

# TENDER DOCUMENT

TENDER SPECIFICATION No : **BAP : ERN : NSPCL : ESP : MECH :C : 233**

## NAME OF WORK:

**RETROFITTING OF ELECTROSTATIC PRECIPITATOR (ESP) INVOLVING MATERIAL HANDLING AT SITE STORES/ STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING ESP & ID FAN DUCTS TO THE EXTENT REQUIRED, ERECTION, TESTING AND COMMISSIONING OF NEW COMPONENTS OF ESP IN UNIT-1 & 2, CPP-II ( 2 x 60 MW ), NSPCL, ROURKELA STEEL PLANT, ROURKELA, ODISHA USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , CONSUMABLES, MANPOWER ETC.**

Issued to M/s. :

## PART – I ( TECHNICAL BID )



**ERECTION SERVICES DEPARTMENT**  
**BHARAT HEAVY ELECTRICALS LIMITED**  
( A Government of India Undertaking )  
BOILER AUXILIARIES PLANT  
INDIRA GANDHI INDUSTRIAL COMPLEX  
RANIPET – 632 406

**BHARAT HEAVY ELECTRICALS LIMITED**  
**BOILER AUXILIARIES PLANT**  
**RANIPET- 632406.**

**ERECTION SERVICES DEPARTMENT**

TENDER SPECIFICATION NO. : BAP:ERN: NSPCL : ESP : MECH : C : 233

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**BHARAT HEAVY ELECTRICALS LIMITED  
BOILER AUXILIARIES PLANT  
RANIPET – 632 406**

**ERECTION SERVICES DEPARTMENT**

**SPECIAL INSTRUCTIONS TO BIDDERS**

**Page 01 of 02**

1. This Booklet consists of the scope and bill of quantities of the entire work etc.
2. The Bidders are requested to go through the instructions contained in the documents attached and quote in the Rate Schedule attached.
3. The Bidders are advised to go through the General conditions of contract, Special conditions of contract, Tender specifications and all parts of this tender document and fully understand the scope of work before quoting. Any doubt in the documents should be got clarified from Erection Services Department of BHEL, Ranipet before submitting their offer.
4. Bidders shall note that all consumables, tools & tackles and **all the required Cranes (Tower Cranes/ mobile/ telescopic cranes, etc.), Trucks / Trailers / Tractors, Hoists, Derricks with winches, cutting and welding machines, etc.** are to be provided by the contractor.
5. **No advance payment towards mobilization of site operation** or for any other purpose will be made by BHEL. The payment for work will be made strictly as per payment terms in the tender specification.
6. **The Tender Documents should be submitted duly signed and stamped in all the pages** of the Tender Specification, General conditions of contract, special conditions of contract, Annexure etc. by the Bidder.
7. **The retrofitting work shall be carried out in one ESP at a time by isolating it from the system.** Bidders are requested to carefully study and understand the sequence and schedule of activities as the retrofitting work affects the unit's operation. Time is the essence of the contract and all the resources required for completion of work in the stipulated time period has to be mobilized well in advance of the shutdown/ stipulated date.
8. BHEL is not bound to accept the lowest or any bid and will have the right to reject any or all the bids without assigning any reason whatsoever. It is to be noted that a two-part evaluation system will be used for this tender. Please read the relevant portions of the tender / NIT. Hence it is essential that the tenderer submits a comprehensive technical proposal in their bid.
9. **Special tools that are envisaged to be provided by BHEL are given in annexure.**
10. Approval, if any, required from statutory authorities like Labour Commissioner, Electricity Board, etc., should be obtained by the bidder at his own cost and risk.
11. The bidder should mobilise maximum labour force from the local area of work.
12. These Tender Documents are not transferable.
13. Offer of the Bidder with all the required documents should be submitted so as to reach the specified addressee as per schedule given in the notice inviting tender.

**14. ADDRESS FOR SUBMISSION / POSTING OF BID DOCUMENTS**

**THE OFFICE OF MANAGER ,  
CIVIL TOWNSHIP,  
(NEAR MUKUNDARAYAPURAM RAILWAY STATION)  
BHARAT HEAVY ELECTRICALS LIMITED,  
BOILER AUXILIARIES PLANT,  
RANIPET – 632 406.  
Phone No.:04172 - 284883**

**15. Address for communication, clarifications etc.**

**THE ADDL. GENERAL MANAGER,  
FES & ERECTION SERVICES  
BHARAT HEAVY ELECTRICALS LIMITED,  
BOILER AUXILIARIES PLANT,  
RANIPET – 632 406.  
Phone No.:04172 - 241171 / 284973 / 284554  
Fax : 04172 - 242011  
E- mail : [cramiah@bhelrpt.co.in](mailto:cramiah@bhelrpt.co.in)**

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## BHARAT HEAVY ELECTRICALS LIMITED

BOILER AUXILIARIES PLANT, RANIPET- 632406.

### ERECTION SERVICES DEPARTMENT

## NOTICE INVITING TENDER

Sealed offers in TWO PARTS are invited from experienced bidders meeting the requisite Qualifying Requirements (QR) for the work mentioned below. Points relevant to the tender are mentioned below and are to be complied with.

1. TENDER SPECIFICATION NO. : **BAP:ERN:NSPCL:ESP:MECH:C:233**
2. **NAME OF THE WORK** : **RETROFITTING OF ELECTROSTATIC PRECIPITATOR (ESP)** INVOLVING MATERIAL HANDLING AT SITE STORES/ STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING ESP & ID FAN DUCTS TO THE EXTENT REQUIRED, ERECTION, TESTING AND COMMISSIONING OF NEW COMPONENTS **OF ESP IN UNIT-1 & 2, CPP-II ( 2 x 60MW ), NSPCL, ROURKELA STEEL PLANT, ROURKELA, ODISHA** USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , CONSUMABLES, MANPOWER ETC.
3. **EARNEST MONEY DEPOSIT** : **Rs. 2,00,000/-** (Rupees Two Lakh only)
  - 3.1 **EARNEST MONEY DEPOSIT (EMD)** : The offer submitted must be accompanied by the prescribed amount of EARNEST MONEY DEPOSIT. EMD shall be remitted along with the tender in the form of pay order or DEMAND DRAFT only drawn in favour of **BHARAT HEAVY ELECTRICALS LIMITED payable at RANIPET**. EMD in the form of bank guarantee / fixed deposit receipt or in any other form **will not be accepted.**
  - 3.2 **An offer / bid that is not accompanied by the requisite EMD amount is liable to be summarily rejected.**
4. **TENDER SCHEDULE :**

a.	SALE OF TENDER SPECIFICATION DOCUMENTS	<b>01.12.2012 To 24.12.2012</b>
b.	PRE- BID MEETING	<b>12.12.2012 at 10.30 Hrs</b>
c.	DUE DATE AND TIME FOR SUBMISSION OF OFFER	<b>24.12.2012 at 14.30 Hrs.</b>
d.	DATE & TIME OF OPENING OF TECHNICAL BID	<b>24.12.2012 at 15.00 Hrs.</b>

Note : *Please obtain updated information from the BHEL website about the latest applicable dates.)*

5. **PRE BID MEETING** : Pre-bid meeting will be held on the mentioned date at the office of THE ADDITIONAL GENERAL MANAGER, FES & ERECTION SERVICES, BHEL Ranipet.
6. **OPENING OF TENDER** : Technical bids will be opened on the mentioned date at the office of THE MANAGER, CIVIL TOWNSHIP, NEAR MUKUNDARAYAPURAM RAILWAY STATION, BHEL, Ranipet.
  - 6.1 In case the opening of the tender is a non-working day then the opening will be done on the next working day.

7. Tender specification documents with complete details are hosted in web page ([www.bhel.com](http://www.bhel.com)). Bidders can directly download the same and use for submission of offer. Tender document charges shall be paid to BHEL along with or before submission of offer.
8. Interested bidders may alternately collect hard copy of tender specification documents from Erection Services Dept / BHEL / Ranipet on all working days (between 10.00 to 15.00 hrs) within the sale period on payment of tender document charges.
9. **Tender specification document charges (Non-refundable)** : Charges for Tender Specification document @ Rs.2000/- per Tender Specification shall be paid by Account Payee Demand Draft in favour of "Bharat Heavy Electricals" payable at Ranipet or in Cash at the cash counter of BAP/Ranipet. In the case of downloading of Tender Specification documents etc. from the web page, the bidder shall remit the tender document charges (Rs.2000/-) positively along with or before submission of offer. In the case of request by the bidder for dispatch of Tender Specification documents through Courier/Post, extra charges shall be paid @ Rs.500/- per Tender Specification. The tender documents are not transferable.
10. BHEL will not take any responsibility for delay/loss of documents or correspondence sent by courier/post.
11. Acceptance of any bid shall be subject to the approval by BHEL's Customer.
12. BHEL reserves the right to accept or reject any or all the bids without assigning any reasons whatsoever.
13. All corrigenda, addenda, amendments, clarifications etc. to tender specification will be hosted in the web page ([www.bhel.com](http://www.bhel.com) > **Tender notifications** > **view corrigendum**) only and not in the news paper. Bidders shall keep themselves updated with all such developments.
14. BHEL reserves the right to reject any offer on the basis of unsatisfactory performance of the bidder in any on going job or any similar job in the past.
15. BHEL will operate CPSE purchase preference policy as applicable.

**16. QUALIFYING REQUIREMENTS (OR) :**

Bidders shall essentially meet all the qualifying requirements in (a) & (b) as under:

- a. Bidder must have successfully executed Erection of mechanical components and Commissioning of atleast one ESP for any of the BHEL units in the last seven years as on 31.10.2012.

**(OR)**

Bidder must have successfully executed Erection of mechanical components and Commissioning of ESP in at least one unit of 45 MW or higher rated thermal power plant in the last seven years as on 31.10.2012.

**(OR)**

Bidder must have successfully executed Erection of mechanical components and Commissioning work in industries like steel plants, Refineries, Cement plants, Thermal Power plants, Captive power plants etc., which includes erection of atleast one ESP in the last seven years as on 31.10.2012 as follows.

- (i) One work of atleast Rs.454.00 lakhs in a single work order.
- (ii) Two works of atleast Rs.284.00 Lakhs each..
- (iii) Three works of atleast Rs.2270.00 Lakhs each.

(AND)

- b. The contractor must have achieved minimum average annual financial turn over of **Rs.170.00 Lakhs** during the last three financial years (FY) ending on 31/03//2012 or 31/03/2011, if the account for the FY 11-12 is not audited.

**Fulfillment of QUALIFYING REQUIREMENTS:** A bidder must satisfy all the qualifying requirements enumerated as in (a) & (b) above concurrently in order to qualify to participate in this tender.

17. Erection of ESP mentioned in 16.0 above shall also include Retrofitting / revamping works mentioned above (21.a) shall mean works involving replacement of entire internals of fields in an ESP, encompassing all the Collecting Electrodes (C.E), C.E supporting frames, Emitting Electrodes (E.E), E.E frames, Rapping systems etc. by opening out the complete inner and outer roofs. Normal O & M works/ Services, replacement of limited quantities of spares in the fields and minor rectification works shall not be considered as Erection /Retrofitting / Revamping of ESP.
18. **Supporting documents for QR:**  
**Bidder shall submit documents in support of possessing qualifying requirements as under, duly self certified and stamped by the authorized signatory.**
- (i) List of jobs done with the name of the project, Owner of the project, Name of the customer, Work order reference No and date, brief details of jobs, executed value, date of start, date of completion.
  - (ii) Certified Photocopies of work orders issued by the Customer containing details of bill of quantities/schedule of rates and certificates for proof of satisfactory completion of work.
  - (iii) Certified Photo copies of Audited profit and loss account accompanied by relevant schedules for turn over figures.
19. **Seeking clarification on Tender Specification:** Clarifications, if any shall be sought through written communication only, indicating the specific clauses in the Tender Document, so as to reach the specified office at least seven days before the last date for bid submission. BHEL shall not be responsible for receipt of queries after the due date for seeking of clarification due to postal delay. Any clarification / query received after the last date for seeking the same may not be normally entertained by BHEL and no time extension will be given.
20. BHEL may decide holding pre-bid meeting (PBM) with any /all intending bidders. On such communication from BHEL, the bidder shall ensure participation in the same at the appointed time, date and place as may be decided by BHEL. **Bidders are advised to visit the site and completely familiarize themselves with the site conditions for this Retrofit job.**
21. All the information as called for in the various clauses and annexure of tender specification should be furnished. Please refer to the check list. The details so furnished shall be complete in all respects and as per the formats prescribed in the Tender specification (Statutory requirement of Contract). The bidder may have to produce original documents for verification, if so desired by BHEL.
22. Offers received with any deviation or without relevant information are liable to be rejected.
23. Price bids received in any form other than prescribed in Part-II (PRICE BID) are liable to be rejected.
24. **VALIDITY OF OFFER :** The validity of the offer shall be 180 days from the date of bid opening ( including extensions , if any). No unsolicited revision in the tender offer shall be entertained after opening of tenders and till expiry of the validity period.

25. **LIQUIDATED DAMAGES:** BHEL will impose Liquidated Damages as per suitable clauses in the Tender Specifications on account of delay, violation of contract conditions and non-performance attributable to the contractor.
26. **REVERSE AUCTION (RA):** BHEL Reserves the right to adopt the process of **Reverse Auction** (ON LINE BIDDING on INTERNET) among the bidders who are found to be qualified on the basis of technical bid. Refer the **General Terms and Conditions of reverse auction** in SECTION-VIII. No extension of time on this account will be entertained for bid submission.
27. If the reverse auction is unsuccessful as defined in the RA rules / procedure, or for whatsoever reason, the sealed Price Bids may be opened for deciding the successful bidder.
28. **BID EVALUATION :** The offer submitted by bidders who meet the requisite Qualifying Requirements will be evaluated in two stages, namely Technical- Bid Evaluation and Price Bid Evaluation. The Technical bid will be evaluated as per 'Technical-bid Acceptance Criteria'(TAC) enumerated in ANNEXURE-1 to NIT. The bids which obtain the minimum score specified in the TAC will only be acceptable and further considered for Price Bid Evaluation.
29. Bidders whose technical bids are found acceptable to BHEL shall be intimated separately about the status of their offers. Date of price bid opening shall be intimated to the qualified bidders only.
30. **PRICE BID EVALUATION CRITERIA :** The successful bid shall be based only on the total quoted value for the entire scope of work, in the sealed "Price bid" or RA as applicable.
31. The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site "[www.bhel.com](http://www.bhel.com)".
32. **EPF registration :** Bidders should furnish the EPF code and registration details along with the bid. Bidders who have not registered and do not possess EPF code, if awarded the work, should immediately register and obtain the code.
33. **ORDER OF PRECEDENCE :** In the event of any ambiguity or conflict between the clauses / statements in Tender Documents, the order of precedence shall be in the order below.
- a. Amendments / clarifications / corrigenda / errata etc. issued.
  - b. Notice Inviting Tender (NIT)
  - c. Price Bid
  - d. Technical Conditions of Contract
  - e. Special Conditions of Contract
  - f. General Conditions of Contract
  - g. Forms & Procedures
34. In the event of any conflict between requirements of a clause/s of this specification /documents/drawings/data sheets etc. and different standards / codes specified, the same is to be brought to the notice of BHEL before submission of offer, else BHEL's interpretation shall prevail.
35. Typographical error/missing pages/other errors in the tender documents noticed, must be brought to the knowledge of BHEL in writing before pre-bid meeting / submission of offer, else BHEL's interpretation shall prevail.
-

<b>ANNEXURE – I</b>				
<b>Technical bid acceptance Criteria (TAC)</b>				
<b>S. No</b>	<b>Evaluation Parameter</b>	<b>Document to be submitted</b>	<b>Max Score (MS)</b>	<b>Evaluated Score (WS)</b>
1	<b>General Technical Competence based on past experience</b> More than 10 years experience in heavy erection jobs with welding gets 10 marks. Anything less gets marks proportionate to no. of years of experience	List of works & Completion certificate	10	
2	<b>Ability to complete on Schedule based on past records</b> Contractor to submit the actual time periods of completion for his past projects along with contractual schedules	Proof of contract dates	5	
3	<b>Similar ESP Retrofit Experience</b> More than 3 similar ESP retrofits gets 15 marks anything less gets proportionate marks	Completion letter/certificate	15	
4	<b>Past Safety Records &amp; Safety Plan Proposed</b> Reasonable and complete Plan gets 10 marks. Else proportionate	Plan/Availability of safety officer	5	
5	<b>Dismantling and Erection Methodology</b> If 5 sections covering (a) correct choice of type of crane, (b) correct positioning of crane, (c) reasonable productivities & schedule, (d) feasible methodologies to be followed, (e) sketches-- are all there 20 marks; else proportionate marks	Verifiable sections in the bid	20	
6	<b>Work Breakdown Structure and Time Schedule</b> Reasonable and complete schedule gets 10 marks. Else proportionate marks	Macro Schedule	10	
7	<b>Appropriate Equipment committed to be mobilised</b> If cranes, derricks, welding machines, trailers, winches are covered with appropriate capacity and numbers including source for procurement 15 marks; else proportionate marks	Equipment list	15	
8	<b>Company Organisation and Appropriate Project Staff Organisaion</b> If appropriate no. of staff with 10 years similar erection experience are committed 10 marks; else proportionate	Staff list	5	
9	<b>Appropriate Skilled Labour committed to be mobilized</b> If appropriate no. of skilled labour with similar erection experience including welders are committed 5 marks; else proportionate	Letters/ Certificate	3	
10	<b>Status reporting and Quality Control</b> Appropriate Quality control procedures for different works and appropriate project reporting system	Quality document	2	
11	<b>Bid Appreciation / Site visit</b> If site problems are brought out and site visit has been made full marks; else proportionate	Proof of visit	5	
12	<b>Completeness of bid submission</b> If all stipulated documents are submitted full marks; else proportionate	Index and corresponding contents	5	
	<b>Maximum Total Points (MS)</b>		<b>100</b>	
	<b>Acceptance of Technical bid - Minimum Score to pass Technical Evaluation</b>		<b>50</b>	

**BHARAT HEAVY ELECTRICALS LIMITED**  
**BOILER AUXILIARIES PLANT**  
**RANIPET- 632406.**  
**ERECTION SERVICES DEPARTMENT**

**PROCEDURE FOR SUBMISSION OF SEALED TENDERS**

- A. The bidders must submit their offer 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 following details.
- a. TENDER SPECIFICATION NUMBER
  - b. NAME OF WORK and
  - c. DUE DATE AND TIME FOR SUBMISSION
- B. **PART-I (TECHNICAL BID) COVER-I :**
- a. Excepting Rate Schedule, all other schedules, data sheets, formats, drawings and other details called for in the NIT / specification shall be enclosed in Part-I "Technical Bid".
  - b. Supporting documents / annexure etc. as required in line with Qualifying Requirement shall be enclosed. The documents shall be indexed properly.
- C. **PART-II (PRICE BID) COVER-II :**
- a. All indications of price shall be given in this PART-II "Price Bid" only. Discounts, if any shall be indicated only in the price bid.
- D. These two Covers - I & II (PART-I AND PART-II) shall together be enclosed in a **third envelope (COVER-III) along with requisite EMD** as mentioned in the Notice Inviting Tender and this SEALED COVER shall be superscribed and submitted to **THE MANAGER, CIVIL TOWNSHIP, BHEL, Ranipet** at the address given in "Special Instructions to Bidders " on or before the due date.
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**OFFER OF THE BIDDER**  
**(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)**

To

**The Additional General Manager**  
 FES & Erection Services Dept,  
 Bharat Heavy Electricals Limited,  
 Boiler Auxiliaries Plant,  
 Indira Gandhi Industrial Complex,  
 RANIPET –632 406. (TAMIL NADU).

Sir,

I/We hereby offer to carry out the work detailed in the Tender Specification No. BAP:ERN:NSPCL:ESP:MECH:C:233 issued by M/s. Bharat Heavy Electricals Limited, Boiler Auxiliaries Plant, Ranipet in accordance with the terms and conditions thereof:

I/ we have carefully pursued the following documents connected with the above work and agree to abide by the same. We herewith confirm that we have visited the site of work at NSPCL, Rourkela.

- a. General terms and conditions of work (ES: F:010)
- b. Statutory requirement of Contract (ES: F:009)
- c. Special conditions of Contract for Mechanical works (BAP:ERN:SPN:MECH:ESP:01)
- d. Tender Specification no. BAP: ERN:NSPCL:ESP:MECH:C:233
- e. Special Instructions to Tenderer
- f. General terms and conditions of Reverse Auction.
- h. Other sections, appendices, schedules and drawing.

I/We have deposited / forwarded herewith the Earnest Money Deposit in the form prescribed and as stipulated in Clause No.1.4. of the General Conditions of Contract for Works towards the Earnest Money Deposit for a sum of **Rs.2,00,000/- (Rupees Two Lakh only )** vide Pay Order No.....Dt..... 2012 / Demand Draft No.....dt..... 2012 which shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit such additional sum, within the stipulated time as may be indicated by BHEL, which along with the sum of **Rs.2,00,000/-** mentioned above, shall make up the Security Deposit for the work as provided for in clause 1.8.2 of the General Conditions of Contract for Works.

I/We further agree to execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as indicated in the Annexure enclosed thereto.

**SIGNATURE OF TENDERER:**

Place:  
Date:

ADDRESS:

**WITNESSES WITH FULL ADDRESS**

SIGNATURE	NAME	ADDRESS
1)		
2)		
3)		

**TENDER SPECIFICATION NO. : BAP:ERN:NSPCL:ESP:MECH:C:233****PROJECT INFORMATION**

1. Purchaser and Owner : M/s. NTPC-SAIL POWER SUPPLY CO. PVT. LTD., (NSPCL)  
NOIDA
2. Location : **CPP – II ( 2 X 60 MW)**  
NSPCL,  
ROURKELA STEEL PLANT  
ROURKELA, ODISHA.
3. Nearest Railway station : Rourkela
4. Air Quality : Normal Power Plant conditions
5. **Climate & Limitation to work**

	<b>Description</b>	<b>From</b>	<b>To</b>
Season ( months)	Summer	March	May
	Rain	June	September
	Winter	Dec	Jan

<b>Monthly Wind, Rainfall and Temperature</b>				
<b>Month</b>	Avg. Rainfall (mm)	Avg. Wind Velocity (m/s)	Atmospheric Temperature ( deg c)	
<b>January</b>	5.12		24.7	8.7
<b>February</b>	18.52		27.2	11.6
<b>March</b>	3.74		33.5	15.7
<b>April</b>	23.2		38.8	21.5
<b>May</b>	40.02		40.9	25.3
<b>June</b>	199.02		38.5	26.8
<b>July</b>	380.46		33.2	25.2
<b>August</b>	385.36		32.5	24.9
<b>September</b>	265.72		32.7	24
<b>October</b>	44.66		32.1	20.1
<b>November</b>	18.48		29.2	14.3
<b>December</b>	8.54		25.5	9.4

Above Data collected from : India Meteorological Department (<http://www.imd.gov.in/>)

Highest parameters recorded	Value	Month
Peak Rainfall ( mm)	385.36	August
Peak Wind velocity(m/s)	39	
Highest Temperature (deg)	40.9	May
Lowest Temperature ( deg)	8.7	January

**Before submitting his/her/their offer, the tenderer has to get thoroughly acquainted with the site conditions with reference to Operating procedures inside the plant, security rules for access and movements, HSE rules prevailing in the plant, site interference problems, movement of cranes / derricks etc. in the store yard / work site during material handling, erection, storage facilities available, constraints on access and movements, etc. No compensation or revision of rates will be entertained at a later date for not having proper knowledge of the site conditions.**

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**TENDER SPECIFICATION****TENDER SPECIFICATION NO. BAP:ERN:NSPCL:ESP:MECH:C:233**

**1.0 SCOPE OF WORK :** The scope of work includes **Dismantling** of existing Electrostatic Precipitator (ESP) & ID Fan ducts, Handling at BHEL/Customer storage yard and shifting of new components / materials of ESP to site of erection, Erection, testing and commissioning of **ESP Unit- 1 & 2, CPP-II (2 X 60 MW), NSPCL, Rourkela** using contractor's own tools and plants, cranes, material handling equipment, consumables, manpower etc. The detailed scope of work is further explained herein under and further enumerated in the **Annexure – III** attached with this tender specification.

**1.1 Hiring of a SUITABLE TOWER CRANE for major erection work, preferably with base ballast, is included in the contractors scope of work. The bidder has to visit site and ensure suitability of crane. The details of the Tower crane shall be submitted along with the offer.**

**1.2 In addition, any other mobile crane required to execute the work (to handle outlet gates etc.) shall be mobilized in time to meet the schedules.**

**1.3** Retrofitting work of the Electrostatic Precipitator (ESP) in Unit-1&2 involves dismantling of the **internals of the existing 05 fields** (all the components materials except Support columns, Casing panels, Hoppers and slide bearings) and erection of new ESP components, including addition of **02 fields in series**, thereby increasing the height & length of ESP.

**1.4** Each Unit has two ESPs. Retrofitting work will be carried out for one ESP at a time by isolating the same during a short shutdown of unit. While retrofitting of an ESP is in progress, the unit will be in operation through the second ESP. Hence suitable modification/ blanking of ducts and providing of temporary supports for existing outlet ducts would have to be provided.

**1.5** Replacement of the **complete insulation** of the existing ESP, including the cladding sheet etc. is in the scope of work.

**1.6** In order to install the extended additional fields the following works have also to be carried out. These shall form part of the work.

- a. Dismantling of the existing pipes & pipe rack structure below the outlet funnels.**  
The pipe lines have to be re-routed behind the stack/chimney as shown in the layout drawing.
- b. Dismantling of the existing outlet duct & duct support structures, Fan handling structures.**
- c. Modification of the ID Fan outlet ducts to enable handling of ID Fan impellers for maintenance purpose.**
- d. Modification of the existing Hoppers** to install new heating chambers suitable for tubular type heaters. The existing panel type heaters have to be dismantled. The existing insulation of hopper has to be removed to the extent required to carry out this modification.
- e. Inlet Funnel & GD system** - required modification / replacement of inlet funnels to the extent required.
- f. Dismantling of existing outlet Guillotine gates** (05 Nos. per Unit) and re-erection after servicing of the same. Servicing shall be carried out as per the instructions of BHEL.

**g. Dismantling / rerouting / erection of Fire fighting lines/other pipes interfering with the new proposed control room, between ID Fan & Chimney etc. shall be in the scope of contractor.**

- 1.7** Work includes handling of ESP components at site stores / storage yards, transportation to site of erection, handling at site of erection, preassembly, water washing etc. complete and hook up of the entire system as per drawings of BHEL.
- 1.8** Any dismantling and re-erection of existing material/s that is required to complete the specified work shall form part of the work and shall be carried out at no extra cost to BHEL.
- 1.9** Removal and refitting / relaying of existing Air & Water lines, if any, which are required to enable dismantling & erection activities shall be in the scope of contractor.
- 1.10** Removal and relocating electrical cables / components below the existing outlet funnels & ducts of ESP, which are required to enable dismantling of Pipe rack & ID Fan handling columns shall be in the scope of contractor. Any other minor works related of electrical cables/components to enable retrofitting activity shall be in the scope of work.
- 1.11** The distance of BHEL / Customer stores / storage yard within the plant to site of erection is in a radius of about 1.0 km.
- 1.12** Area illumination for enabling the retrofitting work shall be in the scope of contractor.
- 1.13** All the ESP materials & components will be supplied by BHEL / Client on free issue basis and the contractor has to take receipt of them at the designated point, store them carefully, use them in the works as specified and required and finally account for them.
- 1.14** Dismantling of existing High Voltage Rectifier (HVR) Transformers and Erection & alignment of new HVRs shall be in the scope the contractor. However, testing and commissioning shall be carried out by other agencies.
- 1.15** Fabrication and erection of temporary structures, platforms, supports etc. for dismantling and erection of ESP components forms part of the work. The temporary structures etc. erected shall be removed after completion of work at no extra cost.
- 1.16** Adequate quantity of winches, steel ropes, pulleys etc shall be arranged by the contractor for safe dismantling and erection.
- 1.17** The scope of work also includes shifting and proper storage of dismantled materials at storage yard. The dismantled materials should be segregated and unusable materials should be devoluted to NSPCL scrap yard.
- 1.18** Being a retrofitting job, any work like cutting/grinding etc. of supplied materials/existing materials to suit to site conditions shall form part of the erection work and no extra charges will be paid on this account.
- 1.19** After completion of revamping work, all the materials/equipment removed/shifted shall be re-installed/re-erected/placed back in their original locations or at locations as instructed by BHEL.
- 1.20** The contractor shall make suitable security arrangements including employment of security personnel (round the clock) to ensure the protection of all materials/equipments and works from theft, fire, pilferage and any other damage and loss at stores/storage yard/pre-assembly area/erection site, till the completion of work.

**1.21** The contractor shall supply manpower and consumables to carry out the required tests on the equipment such as **Air-in leakage Test** ( using air blower provided by BHEL), Gas tightness test by smoke test method or kerosene method and other tests such as **Gas Distribution test, Performance Guarantee test etc.**, to be specified by the Resident Engineer, BHEL at free of cost. Contractor's quoted rate shall include blanking of hopper, funnel and ducts to conduct air-in leakage test, smoke test etc. and all other contingencies such as checking of coupling alignments, various clearances between stator and rotor components, bearing clearing, trial runs etc.

**1.22** Trial-run, testing & commissioning of the entire system within the contract time and to the entire satisfaction of the customer and BHEL forms part of the work.

**2.0 ROUND THE CLOCK WORK :** Part of the work is to be carried during shutdown of the running plant and the relevant works have to be completed within the planned shutdown. This will call for working with enhanced resources and round the clock. The contractor shall provide for suitable illumination, security, labour amenities, etc for such working. Necessary safety gadgets shall be provided and ensured for the manpower during late hours. The bidder shall consider all such contingencies in their offer.

**3.0 TERMINAL POINTS :** The terminal points shall be from Inlet Funnel to Outlet of ID Fan (inlet to stack) and outlet of Ash handling system below ESP.

**4.0 SITE LOCATION :** Please see project information sheet.

**5.0 TOOLS & TACKLES :** It may be noted that **BHEL will not provide** any cranes , trailers / trucks / tractors, tools and plants for execution of the work. All required resources including derricks, winches, wire ropes and tackles, etc are to be arranged by the contractor only. Higher capacity crane/s required for completion revamping work within the stipulated period shall be arranged by the contractor at no extra cost to BHEL. The quoted the rate shall consider all the eventualities that may arise during such works.

**6.0 CONSTRUCTION POWER & WATER :** Required construction power and water to site shall be provided by BHEL on **FREE OF CHARGE** at one point only (within 500m). Necessary power cabling from the source to distribution boards, energy meters etc. and distribution pipe lines to different locations of water point with taps, valves etc., shall be provided by the bidder at his cost.

**7.0 HEALTH, ENVIRONMENT AND SAFETY :** The contractor shall follow good safety practices at the site. All personnel shall be provided the required safety protective gear and contractor to ensure that they are used. Safety training to be provided to all personnel at the site. In addition, the prevailing rules and regulations pertaining to Health, Environment and Safety (HSE) procedures of M/s NSPCL, project site rules, prevailing labour laws enforced by local authorities, labour regulations, movement of labour / vehicles inside the plant area, time keeping systems etc., in force and other local political conditions shall be studied before submission of this budgetary offer. The bidder shall submit a write-up, along with the Technical-bid, on the HSE procedures to be adopted subject to modification and acceptance by BHEL, covering at minimum Personal Protective Equipment such as helmets, hard shoes, goggles, gloves, etc, safety training to staff and labour, daily safety pep talks & inspections, safety sign boards, housekeeping procedures, etc.

**8.0 COMPLIANCE TO STATUTORY REQUIREMENTS:** It is the responsibility of the contractor to obtain the required labour license from the appropriate authorities before commencement of work.

**8.1** The contractor shall comply with all State/Central Laws, Statutory Rules, Regulations etc. inclusive of those regarding Labour and Industrial Laws which are applicable from time to time and shall comply with the provision of the same Labour Legislation, Rules and Regulations framed under the provision of Employees' Provident Fund and Miscellaneous Provision Act 1952, ESI registration, Labour License etc..

**9.0 SITE MANAGEMENT :**

- a. The contractor shall arrange to print all materials management forms, daily labour progress reports, and all other forms & reports etc., as indicated / instructed by BHEL and customer's HSE plan and project site rules. The Contractor shall depute well experienced senior site manager who shall liaise with BHEL and clients, coordinate all resources and works and complete the job satisfactorily. The bidder shall submit in his Technical bid a resume of the proposed site manager. In addition, the Contractor shall mobilize adequate numbers of well experienced site technical supervisory staff as well as skilled and unskilled labour.
- b. Erection Progress Reports shall be accompanied by Photographs (both hard & soft copies) as directed by BHEL Engineer at site.**

**10.0 MOBILISATION ADVANCE :** No advance payment towards mobilization of site operation or for any other purpose will be made by BHEL. The payment for work will be made strictly as per payment terms in the tender specification.

**11.0 FIRM PRICE :** The Contractor has to keep his quoted rates firm for the entire contractual period including total extended period, if any, and no claim for revision of rates or price escalation is allowed under any circumstances.

**12.0 VARIATION IN QUANTUM OF WORK :** The details of quantum of work are indicated in the rate schedule which is only approximate and is likely to vary to the extent of PLUS or MINUS 15% of the scheduled quantities, as per site conditions ( except for Sl. Nos. 02, 03,4,05,06 & 11 for which the quantities may vary beyond 15%).

**13.0 EARNEST MONEY DEPOSIT (EMD) :** The EMD amount to be remitted along with the offer and the mode of remittance shall be as indicated in the "Notice Inviting Tender".

**14.0 SECURITY DEPOSIT (SD) :** The successful tenderer shall within the time specified in the letter of intent deposit the required amount of security deposit. The SD shall be as per clause 1.8 of General Conditions of Contract (GCC).

**15.0 TAXES AND DUTIES :** Rates quoted shall include all royalties, taxes, terminal taxes, Octroi, duties, Sales Tax on Works Contract, Entry Tax, Central or Provincial Excise Tax and other taxes (**except Service Tax**) leviable under the state and the central Government Rules. BHEL will not entertain any claim whatsoever in this respect. No reimbursement on account of increase in rate of existing levies shall be made.

**15.1** The bidder shall not include Service Tax in their quoted rates. **Service Tax** as applicable to this contract will be reimbursed by BHEL. The successful tenderer shall register themselves with the service tax authority and pay separately the Service Tax as applicable to this contract during execution of the work and get it reimbursed at actuals by BHEL by submitting necessary invoices / documentary proof as required by BHEL.

**15.2 Procedure for reimbursement of Service Tax :** The service tax claimed in the first Running Account Service Invoice will be paid by BHEL. For subsequent invoices, Service Tax amounts will be paid only on production of proof for having remitted the previous service tax amounts paid by BHEL

- 15.3** Work Order for Man Power Supply shall be released separately to facilitate the application of Service Tax rules.
- 16.0 PAYMENT TERMS :** All payments for the works completed shall be paid based on bills raised by the contractor as payment terms and certified by Engineer-in-Charge of BHEL. **Payment will be made within a period of 30 days from the date of submission of bills along with all the enclosures as called for by BHEL. Payment will be only through e-payment** (through electronic fund transfer (EFT) / RTGS) only after deducting Bank charges as per BHEL terms of payment.
- 16.1 DETAILS OF PAYMENT TERMS :** The payment terms are indicated in SECTION-III, IV and VI of the Special Conditions Contract (SCC) enclosed.
- 17.0 PERIOD OF CONTRACT / DURATION OF WORK :** **The total duration for the tendered scope of retrofitting work is 22 (twenty two) Months. The time period shall commence from date of receipt of first ESP component at site ESP.** The Time period for shutdown and erection activity are enumerated below and shall be strictly adhered to.
- 17.1 Tentative Time period of work : Refer Annexure -II**
- 17.2** The contractor shall mobilise the resources like manpower, cranes, consumables, tools and plants required to complete the entire work with in the above said schedule.
- 18.0 LIST OF TOOLS & TACKLES :** The list of Tools and tackles, cranes etc proposed to be deployed by the contractor shall be given along with the offer. In case of cranes, the range diagrams and load charts should be included for the models to be used for the job.
- 19.0 G.A Drawing :** Layout, GA and site survey drawings are attached for reference. The drawings are for ‘Tender’ purposes only, even if indicated otherwise, which may undergo revisions / changes during construction /execution stage.
- 20.0 Accommodation for Contractors’ personnel :** BHEL **shall not** provide any accommodation facilities for the contractors’ personnel. All the necessary arrangements have to be made by the contractor, outside the Plant premises, at no extra cost to BHEL.
- 21.0 LIQUIDATED DAMAGES :** If the work completion gets delayed and the contract period gets extended due to reasons attributable to the bidder, liquidated damages as per provisions of contract (clause No.2.7.5 of General conditions of Contract for Works) shall apply. All decisions of BHEL in this regard will only be final and binding on the tenderer.
- 22.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORKS:** Refer Section-VII of the special conditions of contract.
- 23.0 OVER-RUN COMPENSATION (ORC):** Refer Section-VIII of the special conditions of contract.
- 24.0 The following documents enclosed shall also form part of the tender:**
- a. Technical bid evaluation Criteria – (Annexure-I)
  - b. Tentative Schedule of activities – (Annexure –II)
  - c. Technical Specification – (Annexure- III, Section- 1 to 5)
  - d. Statutory requirement of contract (ES:F:009)
  - e. General terms and conditions of work (ES:F:010)

- f. Special Conditions of Contract for ESP works (BAP:ERN:SPN:MECH:ESP:01 – SECTION-III, IV & V)
  - g. Special Conditions of Contract – ( Section –VI, VII and VIII)
  - h. General Terms and Conditions for REVERSE AUCTION (SECTION-IX)
  - i. Appendix-I, II, III and IV
  - j. Drg Nos. 1-00-111-28717 Rev01 and 0-00-111-27412 Rev01
  - k. Site Survey Drg EPMCR/202/BHEL/RSP02
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**ANNEXURE – II**

TENDER SPECIFICATION No. : BAP:ERN:NSPCL:ESP:MECH:C:233

**TENTATIVE SCHEDULE OF ACTIVITIES FOR COMPLETION OF RETROFITTING WORK**

<b>S.No</b>	<b>Description of work</b>	<b>From</b>	<b>To</b>	<b>Time period</b>
01.	Receipt & Unloading of materials.  (Note - All the major materials are proposed to be supplied before pass isolation/ shutdown of the ESPs)	Jan 2013	July 2014	19 months
02.	Erection of new Pipe rack and Pipe lines behind the stack/chimney and hooking up	Middle Jan2013	End Feb 2013	45 days
03.	Erection of supporting arrangement for O/L duct, gates etc.	Feb2013	Feb2013	30 days
04.	Dismantling of existing pipe rack & pipes below outlet funnel	March 2013	Middle March 2013	8 days
05.	Modification of Fan handling columns	March 2013	Middle March 2013	8 days
Retrofitting of Ist ESP in Unit-2.				
06.	Dismantling & Retrofitting of 1 <sup>st</sup> ESP in Unit-2, only existing fields.	May 2013	July 2013	90 days
07.	Erection of new extended fields of 1 <sup>st</sup> ESP in Unit-2.	June 2013	July 2013	45 days
Retrofitting of the balance 3 ESPs shall be executed in a similar manner, as in s.no.06 & 07. The schedules for the total work in old and new fields of the ESPs are given below.				
08.	Retrofitting of 2 <sup>nd</sup> ESP of Unit-2	Sep 2013	Nov 2013	03 months
09.	Retrofitting of 1 <sup>st</sup> ESP of Unit-1	Jan 2014	March 2014	03 months
10.	Retrofitting of 2 <sup>nd</sup> ESP of Unit-1	May 2014	July 2014	03 months
11.	PG Test and site closing	Sep 2014	Oct 2014	02 months

**ANNEXURE – III**

TENDER SPECIFICATION No. : BAP:ERN:NSPCL:ESP:MECH:C:233

**TECHNICAL SPECIFICATION****SECTION - 1****1. INTRODUCTION**

- 1.1 The NSPCL Rourkela CPP-II comprises of two Units of 60 MW, each commissioned in the Year 1987 & 1988 respectively. Each Unit is installed with two numbers of ESPs. The ESPs were originally supplied by Elektrim, Warazawa, Poland.
- 1.2 The ESPs were originally designed for an outlet emission of 350 mg/Nm<sup>3</sup>. Due to deterioration in the coal quality and change in the operating condition of the boiler, the present level of emission is more than the specified norms by Pollution Control Board. Therefore, now NSPCL intends to take up Renovation & Modernizations of ESPs to bring down the outlet emission level to 75 mg/Nm<sup>3</sup>.
- 1.3 In this R & M/ Retrofitting work, BHEL envisages the modification in existing ESPs by extending the casing vertically to accommodate taller electrode system and extending the casing horizontally to accommodate additional two series fields in the available space between ESP outlet and ID fan.

**2.0 RETROFITTING METHODOLOGY :**

- 2.1 The existing precipitator casing will be increased in height from 11.6 m to 15.0 m to accommodate taller fields. Also the casing will be extended horizontally to have seven fields in total.
- 2.2 The existing ESP internals and roof will be completely dismantled. However the existing supporting structures, hoppers and casing are retained.
- 2.3 Existing ducting system and gates from APH outlet to ESP inlet will be retained. Modified ESP inlet funnel will be connected to existing inlet duct as shown in the layout drawing.
- 2.4 The ESP outlet funnel and its ducting will be new one and connected to existing ID fan inlet duct. The existing gates at outlet duct will be re-used & will be relocated.
- 2.5 Insulation of the entire ESP, including hoppers, funnels etc., is to be replaced.
- 2.6 Existing supporting structure will be strengthened, if required.
- 2.7 Existing ESP hoppers of first five fields will be retained and existing heaters will be replaced with thermostatically controlled electrical tubular type heating elements.

- 2.8 To facilitate the additional two fields in series for each ESP, the existing pipes / pipe rack between existing ESP outlet and ID fan and part of the Fan handling structure shall be dismantled.
- 2.9 Before dismantling the existing pipe /pipe rack below the outlet funnels, new re-routing pipe / pipe rack structure is to be erected behind the chimney.
- 2.10 The existing Fan handling structure below outlet duct is to be dismantled to the extent required.
- 2.11 There will be 7 fields in series, for each ESP, after completion of retrofitting work.
- 2.12 Existing handling arrangement for the transformer rectifier sets mounted on the precipitator roof will be reused and relocated.
- 2.13 Existing 3 numbers guillotine gate along with electrical actuator per boiler will be reused, one number at outlet duct of each ESP, one number at outlet interconnecting duct. Two (2) numbers new bi-plane dampers at ID fan inlet duct will be provided.

### **3.0 BRIEF SCOPE OF SUPPLY**

**A brief scope of supply by BHEL for retrofitting of ESP per unit is as follows:**

- 3.1 The new internals of 15m tall, 750mm collecting electrodes and of 400mm pitch.
- 3.2 The extended casing consisting of prefabricated wall and roof-panels fabricated from 5 mm mild steel plate adequately reinforced with vertical columns and intermediate stiffeners.
- 3.3 4 number pyramidal ash collection hoppers for two new series fields at outlet side, each complete with inspection door, outlet flange and thermostatically controlled electrical tubular type heating elements. The hoppers are fabricated mild steel plate, adequately stiffened.
- 3.4 Gas distribution screens consisting of double screen arrangement at the inlet of ESP and a single screen arrangement at the outlet of ESP. The inlet screen is provided with rapping system.
- 3.5 14 number High voltage emitting system consisting of frame work supported from insulators, emitting electrodes of spiral type made out of stainless steel wires and rapping mechanism including rapping shafts, shaft insulators, angularly displaced tumbling hammers, drive arrangements and geared motor.
- 3.6 14 number Collecting electrode system consisting of supporting arrangement, collecting electrodes fabricated from roll-formed sheets of 18 BWG thick (1.2 mm thick) mild steel, rapping mechanism including shockbars, rapping shafts, angularly displaced tumbling hammers, drive arrangement and geared motor.
- 3.7 Double walled insulator housings complete with thermal insulation and access doors for inspection and service of support insulators of the emitting system.
- 3.8 High voltage bus duct connections between the transformer rectifier and the high voltage emitting system complete with bushing insulator and disconnecting switches.

- 3.9 Gas screening plates for casing and hoppers.
- 3.10 Inner & Outer roof forming a convenient inspection floor on top of each casing.
- 3.11 Inlet and outlet funnels reinforced with beams and stiffeners and complete with splitters etc.
- 3.12 Heating elements of tubular type for the hoppers, support insulators complete with thermostats and heaters alone for shaft insulators.
- 3.13 Thermal insulation made of lightly bonded mineral wool mattress, 75 mm thick, having  $100 \text{ kg/m}^3$  density with single side wire netting and plain aluminium sheet of 0.91 mm thick (20 SWG) as cladding material.
- 3.14 Ducting system from ESP outlet funnel connected to existing ID fan inlet duct as shown in the layout drawing. Duct will be made of 6 mm thick mild steel.
- 3.15 Biplane Dampers at outlet of ESP.
- 3.16 Scope of supply for **ash handling** for additional two (2) new series fields.
1. Four number adopters and four number knife edge gate.
  2. Four number pipes & metallic expansion joint as required for connecting hopper outlet flange and flushing apparatus.
  3. 4 sets of flushing apparatus
  4. 4 sets of isolation valves & piping as required from existing near by water pipe line
- 3.17 Materials in for New re-routing pipe rack structure and modified fan handling structure.
- 3.18 Pipes for rerouting work.
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**SECTION -2****4.0 Bidders Scope of Work****4.1 General**

4.1.1 This specification covers the dismantling and erection of structural steelwork and equipment including receiving and taking delivery of fabricated structural steel materials, equipment and other materials arriving at site, and/or from Owner's site stores or stores yard, installing in position, painting etc., complete as per drawings, this specification and other provision of the contract. All the works shall in the scope of work shall be carried at bides own cost.

**4.1.2 Work to be provided by the contractor**

1. The contractor shall provide all construction and transport equipment, tools, tackle, consumables, materials, labour and supervision required for unloading / loading, storing, dismantling and erection of structural steelwork and equipment. If necessary suitable temporary approach roads, culverts or slabs over trenches shall be built for transportation and positioning of cranes.
2. Unloading, checking, moving to storage yard of site and storing including prompt attendance to all insurance matters as necessary for all components arriving at site. The contractor shall pay all demurrage and/or wharfage charges etc., on account of default on his / her part.
3. Dismantling works include weighing of the dismantled materials at NSPCL weigh bridge and transportation to NSPCL's scrap yard inside plant premises.
4. Erection work includes handling at site stores / storage yard, shifting to erection location, erection, providing temporary supports, alignment, welding and testing as per BHELs specification / drawings / FQP. If necessary suitable temporary approach roads or slabs over trenches shall be placed for transportation of fabricated materials to erection location.
5. Erection of new pipe rack and pipes behind the chimney as shown in layout drawing.
6. Transportation of all fabricated pipe rack structures, pipes and other materials to erection location, handling, rigging, assembling, bolting, welding and satisfactory installation of new pipe rack and pipes behind the chimney in proper location according to approved layout / erection drawings and/or as directed by the Engineer.
7. For Steam lines IBR procedure needs to be followed for welding. The tentative list of pipes materials proposed to be supplied for this project for pipe rerouting is given section-5.
8. Dismantling of existing pipe and pipe rack (for fuel oil, water, steam etc.) between ESP outlet and ID fan to facilitate erection of additional two fields. Safety precautions are to be taken to avoid fire hazard.
9. Dismantling of required columns, monorails, bracings etc. of the Fan handling structure between ESP outlet columns and ID Fan (including pipe rack support columns) to facilitate civil foundation work of extended fields.
10. Providing temporary supports for existing outlet ducts & gates, when the columns are dismantled to facilitate civil foundation work. The work involves fabrication of supports, modification of Fan handling columns etc. as per the drawing / instructions of BHEL.
11. The electrical hoists for ID Fan handling, along with maintenance platforms, are to be relocated between ID fan and chimney.

12. Modification of ID Fan outlet duct and support structures to facilitate removal and handling of ID Fan impeller. Required temporary / permanent supports to be provided. The outlet ducts have to be provided with three flanged joints, with suitable cutting and fabrication, so as to enable removal of fan impeller towards the chimney side.
13. Rerouting of Fire hydrant / other pipe lines that interfere with new control room proposed , ID fan handling structure etc.
14. Dismantling and replacement of the **complete insulation and cladding of the ESPs**, including that of hoppers, funnels etc. Adequate scaffolding materials have to be arranged to complete the insulation work within the ESP shutdown period.
15. Dismantling of HVR transformers.
16. Dismantling and reuse of existing HVR handling structure at ESP roof for transformer handling.
17. Dismantling of complete internals of existing ESP, namely outer & inner roof, support insulators, rapping drives, platforms & hand rails (to the extent required- which will have to be reused), collecting electrodes & supporting frames, emitting electrodes & its frames, the complete rapping systems, deflection plates, inlet & outlet Gas Distribution screens etc.
18. Dismantling / modification of existing ESP inlet funnel to suit the height increase in ESP.
19. Dismantling of outlet funnels & outlet ducting up to ID fan inlet.
20. Dismantling, of existing outlet guillotine gates 5 numbers per Unit at ESP outlet side and re-using / relocating of existing guillotine gates 3 numbers per Unit at ESP outlet side at new location.
21. Dismantling and relocation / reuse of existing collecting rapping platform to suit the new rapping drive height (lowering of the platform height).
22. Checking centre lines, levels of all foundation blocks including checking line, level, position and plumb of all bolts and pockets. Any defect observed in the foundation shall be brought to the notice of the Engineer. The Contractor shall fully satisfy himself regarding the correctness of the foundations before installing the fabricated steel structures on the foundation blocks.
23. Aligning, plumbing, leveling, bolting, welding and securely fixing the fabricated steel structures and equipment in accordance with the drawings or as directed by the Engineer.
24. Painting as per specification / instructions of exposed surfaces of ESP structure.
25. All minor modifications of the fabricated steel structures as directed by the Engineer including, but not limited, to the following:
  - a. Removal of bends, kinks, twists etc. for parts damaged during transport and handling.
  - b. Cutting, chipping, filling, grinding etc. if required for preparation and finishing of site connections.
  - c. Reaming of holes for use of higher size bolt if required.
  - d. Welding of connections in place of bolting for which holes are either not drilled at all or wrongly drilled during fabrication. Welding in place bolting will be permitted only at the discretion of the Engineer.
  - e. Carry out tests in accordance with this Specification if directed.
26. Air-in leakage test by arranging blanking all the ESP openings and pressurizing using blowers, test equipments etc.

27. Gas distribution test - assistance for BHEL Test Team.

28. Performance Guarantee test - all the necessary assistance for BHEL test team.

#### 4.2 PLANT & EQUIPMENT REQUIREMENTS (TOWER CRANES & MOBILE CRANES)

4.2.1 The successful completion of dismantling and erection work depends on the right selection of hoisting equipment. The selection of the hoisting equipment is governed by the lifting load, height, working radii and working spaces available around the ESP. Dynamic factors like wind load, swinging load, hoisting speed and stopping the hoist also impact the selection of hoisting equipment. A partial factor of safety with respect to the tipping considering the dynamic factors has to be introduced and the rated load of the lifting equipment shall not be exceeded. Selection of crane shall be done after analyzing the maximum weights of ESP components to be lifted, ESP layout, crane diagram, range diagram and load chart

4.2.2 **.Tower cranes are ideal hoisting equipment for ESP dismantling and erection work considering the following factors:**

- a. Limited working spaces with many constraints for marching / swinging mobile cranes
- b. operator visibility with better safety and better productivity
- c. Larger working radii and no relocation required
- d. Higher lifting height,
- e. Requirement of lifting lower weights ( 5MT)
- f. Repeated cycle of operations
- g. Highly cost effective for required duty

4.2.3 The selection of tower crane shall be done with considerable planning because the crane is a fixed installation on the site for all the major dismantling and erection activities. From its fixed position the tower crane has to cover all points from which loads are to be lifted and reach the locations where the loads are to be erected. Following points shall be considered while selecting a tower crane:

- Weight, dimensions and lifting radii of the loads
- Maximum free standing height of the tower crane
- Maximum braced height of the tower crane
- Maximum jib length, counter jib length and tip load load capacity
- Tower climbing arrangement
- Weight of tower crane assembly, base ballast and counter jib ballast
- Foundation requirement if base ballast is not possible
- Open spaces, tall structures, trenches etc around ESP
- Mobile crane for erecting the tower crane
- Hoisting speed, Trolley speed, slewing speed
- Length of cable the hoist drum can carry

4.2.4 Considering the above factors refer the rated load capacity chart of tower cranes for selection, which are provided by the manufacturer or hirer. The chart contains the information like Tower crane model no., load diagrams, tower crane diagrams etc. Suitable partial factor of safety needs to be provided considering the dynamic factors during erection at site.

4.2.5 The suitability and adequacy of all other mobile cranes, erection tools, plant and equipment proposed shall be efficient, dependable, in good working condition and shall have the approval of the Engineer. The type and capacity of tower crane, mobile crane and all plant and equipment proposed to be used shall be mentioned and shall have its test certificates and calibration certificates.

#### 4.3 METHOD AND SEQUENCE

4.3.1 The contractor shall schedule and develop detailed methods and sequence of loading, unloading, storing, pre-assembly, and dismantling and erection work which shall have the prior approval of the Engineer. The contractor shall plan for most economical method and sequence with the drawings and specifications and such information shall be furnished to BHEL prior to the execution of the Contract.

#### 4.4 CRANE POSITIONING & LIFTING DETAILS

4.4.1 Detailed crane position and location, particularly adjacent to structure elements, such as ash handling silo, boiler, drains, pipe racks, chimney, etc., with details of load distribution on wheels and outriggers throughout each lift shall have the approval of Engineer.

4.4.2 The method shall provide the details of lifting of critical ESP components like Casing panels, Outlet gates, roof beams, emitting frame, collecting electrodes, duct gates, inlet / outlet funnel, GD screens, hopper etc., with vertical forces at the lifting points and on the lifting devices.

#### 5.0 DIMENSIONAL CHECK

5.1 Before taking possession and erecting the ESP components, the Contractor shall verify that the dimensions of the components, the layout of the ESP supporting structure, its elevations and the location of the anchor bolts are in accordance with the Drawings. All discrepancies discovered by the Contractor shall be brought immediately to the attention of the Engineer.

5.2 It is essential that the ESP components be erected with utmost attention being given to positioning, alignment, and elevation.

5.3 The BHEL Engineer shall approve of all proposed methods of jacking, loading, winching, etc. prior to the work being undertaken.

5.4 Unloading, loading, dismantling and erection of ESP shall be under the direction of a qualified erection Engineer of the contractor.

#### 6.0 TEMPORARY STRESSES

6.1 The Contractor shall assume full responsibility for ensuring that all component stresses are within permissible limits at all stages of the erection work. The Contractor shall provide all necessary additional bracing or other measures required to ensure that the erection procedures do not overstress any temporary or permanent member or component at any stage of the Work.

6.2 Temporary bracing : Unless adequate bracing is included as a part of the permanent framing, the erector during erection shall install, free of cost to BHEL, temporary guys and bracings where needed to secure the framing against loads such as wind or seismic forces comparable in intensity to that for which the structure has been designed, acting upon exposed framing as well as loads due to erection equipment and erection operations. If additional temporary guys are required to resist wind or seismic forces acting upon components of the finished structure installed by others during the course of the erection of the steel framing, arrangement for their installation by the contractor shall be made free of cost to BHEL

6.3 The responsibility of the Contractor in respect of temporary bracings and guys shall cease when the structural steel is once located, leveled, aligned and welded within the tolerances permitted under the specification and guyed and braced to the satisfaction of the Engineer.

## 7.0 TEMPORARY STAGING AND PLATFORMS

- 7.1 The contractor shall provide adequate staging with platforms for a minimum of 2 ESPs during dismantling and erection works. Also additional staging may be required if strengthening of columns are necessary as per design. Suitable staging shall be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra labour shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1 in 4 (1 horizontal 4 vertical).
- 7.2 Staging more than 12' above the ground floor, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise rewinded at least 3' high above the floor or platform of staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such staging shall be so fastened as to prevent it from swaying from the structure.
- 7.3 Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stairway is more than 12', above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened
- 7.4 The staging and platform shall be approved by the Engineer prior to the fabrication and installation.

## 8.0 SETTING OUT

Positioning and leveling of all steelwork, plumbing of columns and placing of every component of ESP structure with accuracy shall be in accordance with the approved drawings and to the satisfaction of the Engineer. Concrete foundations, foundation bolts and grouting where required, shall be made by other agencies. The Contractor shall check the positions and levels of the foundation bolts, etc. before concreting and get them properly secured against disturbance during pouring operations. Contractor shall remain responsible for correct positioning. No extra payment shall be made for this. Each tier of column shall be plumbed and maintained in a true vertical position subject to the limits of tolerance allowable as per drawing / FQP. No permanent field connections by bolting or welding shall be carried out until proper alignment and plumbing has been attained.

## 9.0 WELDING

- 9.1 All field assembly and welding shall be carried out in accordance with the requirements of the specification and drawings applicable to the project. Where the fabricated structural steel members have been delivered painted, the paint shall be removed before field welding for a distance of at least 50 mm on either side of the joints. IBR weld procedure to be adopted for steam lines, where required.
- 9.2 Welder's Qualification : For the welding work in contractor's scope of work and for the various type of welding works of erection, repair etc. only tested welder as approved by the Inspection Engineer or Engineer (after a test) shall be engaged. Only qualified welders are accepted for testing. Each welder must satisfy the job requirements in welding work or applicable code/standard. The welder may be allowed to work in other jobs of similar nature. The Inspection Engineer/Engineer has the power to disqualify any welder at any time without assigning any reasons whatsoever and this shall be binding on the contractor.
- 9.3 Welder qualification certificate issued to the welder shall be valid for one year subject to further renewal by Engineer. In case, welder is found to be idle for a continuous period of 3 months or more, he may be asked by the Engineer for re-appearance of welder qualification test.

9.4 Before conducting welder test, the welder shall produce his past experience details and if found suitable, he may be considered for qualification test. A welder shall be qualified only for the material and position and other conditions under which he performs the test. However, he may be allowed to work on other position also as permitted in the codes / standard.

10.0 **HOLES, CUTTING AND FITTING** : No cutting of sections, flanges, webs, cleats, rivets, bolts, welds etc., shall be done unless specifically approved and/or instructed by the Engineer. The erector shall not cut, drill or otherwise alter the work of other trades, or his own work to accommodate other trades, unless such work is clearly specified in the Contract or directed by the Engineer. Wherever such work is specified the Contractor shall obtain complete information as to size, location and number of alterations prior to carrying out any work. The Contractor shall not be entitled for any payment on account of any such work.

#### 11.0 **PAINTING AFTER ERECTION**

11.1 Field painting by the erection contractor shall only be done after the structure is erected, levelled, plumbed, aligned and grouted in its final position, tested and accepted by the Engineer. However, touch up painting, making good any damaged shop painting and completing shall be carried out by the erection Contractor free of cost to the Owner. The materials and specification for such painting in the field shall be in accordance with the requirements for the project.

11.2 Painting shall not be done in frosty or foggy weather or when humidity is such as to cause condensation on the surfaces to be painted. Before painting of steel, which is delivered unpainted, is commenced, all surfaces to be painted shall be dried and thoroughly cleaned from all loose scale and rust.

11.3 Bolts and fabricated steel members which are galvanized or otherwise treated and steel members to be encased in concrete shall not be painted.

11.4 The specification of paint, number of coats and the shades to be used shall be as specified or as directed by the BHEL Engineer at site.

12.0 **FINAL CLEANING UP** : Upon completion of erection and before final acceptance of the work by the Engineer, the Contractor shall remove free of cost all falsework, rubbish and all Temporary Works resulting in connection with the performance of his work.

13.0 **SAFETY MEASURES DURING DISMANTLING AND ERECTION** : CPP – II is an operational area, therefore, contractor and their employees shall observe all fire & safety regulations of the RSP and shall so organise their work as not to interfere with the running of the plant in any manner whatsoever. Before starting any work, contractor shall apply one day ahead for fire & safety permit for excavation, electrical, gas/arc welding and cutting work to Engineer of work/works who in turn will arrange for such permits. The contractor shall make all the precautions given in the permit before starting of the work to the full satisfaction of the Engineer. On account of operational problem it is possible that the clearance and permit may get delayed for which the contractor shall not demand idle labour charges and no such claim will be entertained by BHEL. The safety measures to workmen and supervisors during all types dismantling and erection work (e.g., use of lifting appliances, slinging, welding, gas cutting, etc.) should be taken as per IS:7205. When any statutory provisions exist, the same shall be complied with in addition to the provisions contained in the above code. Safety barricade wherever necessary are to be put up at his own cost.

#### 14.0 **PROJECT MANAGEMENT**

14.1 The successful completion of any retrofit job during shutdown depends on precise planning and execution. The contractor shall plan and sequence activities such that the project is completed on or ahead of schedule. The contractor shall develop schedule under the following work packages:

1. Site Preparatory Works
2. Pre-Shutdown Works

3. Shutdown Works
4. Post Shutdown Works

#### 15.0 **SITE PREPARATORY WORKS:**

The site preparatory works shall involve, but not limited to, the following:

1. Mobilisation of labour, P&M and materials
2. Establishment of site office, labour camp, open storage yards, closed storage yards, local labour rest area and other amenities.
3. Obtaining local / statutory permits and licenses
4. Receipt of BHEL materials, documenting, storing and securing
5. Develop / strengthen road access for crane and trailer movements in storage area and in erection area

#### 16.0 **PRE-SHUTDOWN WORKS**

The site Pre-shutdown works shall involve, but not limited to, the following:

1. Coordination with the Civil contractor for new Piperack column locations and levels
2. Erection of new pipe rack structure, pipes and commissioning
3. Dismantling of existing pipe rack structure and pipes below outlet duct of ESPs.
4. Dismantling and relocation / modification / fabrication / erection of part of the existing ID fan handling structures.
5. Strengthening of existing ESP support columns ( where required)
6. Coordination with the Civil contractor for additional ESP field column locations and levels.
7. Erection of new ESP columns and bracings to the extent feasible.
8. Erection of staging / scaffoldings around ESP.
9. Inspection of ESP columns, beams and components for dimensions as per drawing and site condition

17.0 **PIPE REROUTING WORK :** The dismantling of existing pipe rack, fan & outlet duct handling columns (partly) during pre-shutdown can be done only on completion of erection & commissioning of new pipe rack system, provision of temporary supports for outlet duct structure and provision for fan handling.

#### 18.0 **SHUTDOWN WORKS:**

18.1 The shutdown work shall be done for one ESP at a time. The shutdown duration for retrofit of one ESP is 120 days which includes dismantling and erection of new components for the existing 5 fields, erection of 2 new fields and other structures to complete as per drawing. During the shutdown the retrofit for 5 fields of existing ESP shall be taken up first without dismantling the outlet duct of the ESP. The dismantling of outlet duct and erection of 2 new fields shall be taken up during the last 45 days of the shutdown period and the complete work in one ESP shall be completed within 120 days from the date of shutdown. The dismantling and erection works shall involve, but not limited to, the following:

1. Water washing of ESP
2. Dismantling of existing insulation of ESP and replacement with new materials.
3. Dismantling of existing ESP outer & inner and internals.
4. Dismantling of ESP internal components, funnel, GD screens etc.,
5. Erection new materials in the first 5 fields.

6. Erection of new extended fields of ESP.
7. Erection of outlet funnel, ducts, gates, dampers etc.
8. Completion of all alignments, trial runs and pre-commissioning tests as per Field Quality Plan.
9. Air leakage test
10. Gas Distribution test
11. Hooking up of retrofitted ESP and commissioning.
12. Shut down of the next ESP.

#### 19.0 **POST SHUTDOWN WORKS**

The post shutdown works shall involve, but not limited to, the following:

1. Performance Guarantee test

#### 20.0 **SCHEDULE OF WORK**

A detailed network schedule shall be developed by the contractor considering all scope of work within 15 days from the award of work and get approved from the Engineer. The schedule shall clearly indicate the Site preparatory works, Pre-Shutdown works, Shutdown works and post shutdown works. The schedule shall clearly indicate the shutdown start and complete of each ESP as milestones. Based on the agreed schedule, the contractor shall submit his Schedule of plant & equipment, Schedule of project staff and Schedule of labour within 10 days from the submission of network schedule.

#### 21.0 **PROGRESS MONITORING & REPORTS**

The contractor shall prepare the progress monitoring reports based on the formats given by BHEL and get approved from the Engineer. The progress monitoring shall be done on daily basis and shall include the physical progress of works, labour statistics, P&M status, and material issue status and safety statistics. The network schedule shall be updated as per the daily progress update. The Engineer shall organize the progress review meeting as and when required with the contractor. The contractor shall prepare revised catch-up programs for the progress delays or foreseen delays and get it approved from the Engineer. Progress reports shall include copies of photographs (hard & soft copies) as directed by BHEL Engineer at site. All the activities shall be at no extra cost to BHEL.

#### 22.0 **CODES AND STANDARDS**

All work under this Specification shall, unless specified otherwise, conform to the latest revisions and/or replacements of the following or any other Indian Standard Specification and codes of Practice of equivalent:-

- IS-800 : Code of Practice for use of structural steel in general building construction.
  - IS-456 : Code of Practice for plain or reinforced concrete.
  - IS-7205 : Safety Code for erection of Structural Steel work
  - IS-12843 : Tolerance for erection of Steel Structures.
-

## SECTION -3

## TECHNICAL DATA OF THE ESP AFTER COMPLETION OF RETROFITTING WORK

TECHNICAL			
1.	<i>Type of ESP</i>	:	FAA-7x37.5M-72150-2
2.	<i>Number of ESP per boiler</i>	:	2
3.	<i>Number of bus sections per ESP across gas flow direction</i>	:	1
4.	<i>Number of electrical fields (Zones) in series in the direction of the gas flow</i>	:	7
5.	<i>Total number of electrical fields per boiler</i>	:	14
6.	<i>Space between the centres of collecting electrodes across the gas path, mm</i>	:	400
7.	<i>Nominal height of collecting electrode, in metre</i>	:	15
8.	<i>No. of collecting electrodes per row in a field along direction of gas flow</i>	:	5
9.	<i>Number of transformer rectifier set</i>	:	14
10.	<i>Rating of each transformer rectifier units, kV (peak)</i>	:	95
11.	<i>Thickness of casing, funnel, hopper.mm</i>	:	5
12.	<i>Thermal Insulation, mm</i>	:	75
13.	<i>Thermal Insulation cladding sheet</i>	:	0.91 mm plain aluminum
14.	<i>Collecting electrode</i>	:	1.25 mm thick mild steel sheet
15.	<i>Hopper heater type, rating</i>	:	Tubular type electric heater, 8 KW / hopper
16.	<i>Type &amp; no. of emitting electrode/field</i>	:	405 (Spiral wire type)
17.	<i>No. of collecting electrodes / field</i>	:	95 Nos. (C.E width-750 mm)

**SECTION 4****LIST OF PIPE LINES FOR RE-ROUTING OF PIPE TRESTLE**

The following is the tentative list of pipes lines proposed to be re-routed.

<b>Sl.no.</b>	<b>Description</b>
1.	CARBON STEEL PIPE, OD 220 X 6.35 thick (Service water line)
2.	CARBON STEEL PIPE, OD 220 X 6.35 thick (Furnace oil heating steam line)
3.	CARBON STEEL PIPE, OD 165 X 4.85 thick (DM water line)
4.	CARBON STEEL PIPE, OD 115 X 3.65 thick (cooling water line)
5.	CARBON STEEL PIPE, OD 90 X 4.85 thick (Service air line)
6.	CARBON STEEL PIPE, OD 70 X 3.25 thick (Furnace oil line)
7.	CARBON STEEL PIPE, OD 70 X 3.25 thick (Furnace oil re-circulation line)
8.	CARBON STEEL PIPE, OD 60 X 4.5 thick (potable water line)
9.	CARBON STEEL PIPE, OD 60 X 4.5 thick (Cooling water line to ID Fan bearing (2 NOs I/L & O/L))
10.	CARBON STEEL PIPE, OD 50 X 2.08 thick (instrument air line)
11.	CARBON STEEL PIPE, OD 50 X 2.08 thick (HSD line)
12.	CARBON STEEL PIPE, OD 40 X 3.25 thick (Heating steam line)

**SECTION 5****TENTATIVE LIST OF PIPE & FITTING MATERIALS PROPOSED TO BE SUPPLIED BY BHEL  
FOR REROUTING WORK**

PAGE 01 OF 02

S.No.	Description	Unit	Qty	WT in Kgs
1	S W LINE 219.1 X 6.35	MR	170	5663.55
2	S A LINE-GI 89.5 X 4.85 GAL	MR	170	1721.08
3	P W LINE 60.8 X 4.5	MR	170	1062.16
4	I A LINE-GI 50.8 X 2.08 GAL	MR	170	424.83
5	C W LINE 113.9 X 3.6	MR	170	1657.5
6	F O LINE 57 X 8	MR	170	1643.39
7	M H S LINE 219.1 X 22.2	MR	170	18324.81
8	F O R LINE 88.9 X 6.3	MR	170	2181.44
9	F O H S LINE 21.3 X 4	MR	170	290.02
10	H S D LINE 57 X 8	MR	170	1643.39
11	H S D R LINE 57 X 8	MR	170	1643.39
12	T S LINE 44.5 X 4.5	MR	340	1508.92
13	A C W LINE 60.8 X 4.5	MR	170	1062.16
14	MS RUBBER PIPE 166.5X4.85 FLEND	MR	185	4144
15	TEE FOR MATCHING SL NO 1 RUBBER	NO	2	23.2
16	90 DEG SMOOTH SHOT RADIUS	NO	7	49
17	ANSI B 16.5 FLAN TO MATCH SL NO 1	NO	20	142
18	TEFLON GASKETS THICKNESS 5MM	NO	10	2.7
19	FASTENERS OF GR 8.8 FOR SL 1	ST	1	108.8
20	TEE PIPE OD 219.1 X 6.35	NO	2	35.6
21	GALVANISED TEE MATCH 89.5X4.5	NO	2	5.8
22	TEE TO MATCH PIPE 60.8X4.5	NO	4	4.8
23	GALVANISED TEE PIPE 50.8 X 2.08	NO	2	0.64
24	TEE FOR PIPE 113.9 X 3.6	NO	2	4.84
25	TEE FOR PIPE 57 X 8 MM	NO	8	2.56
26	TEE FOR PIPE 219.1 X 22.2MM	NO	2	93.2
27	TEE FOR PIPE 88.9 X 6.3 MM	NO	2	4.88
28	TEE FOR PIPE 21.3 X 4 MM	NO	2	0.2
29	TEE FOR PIPE 44.5 X 4.5 MM	NO	2	0.2
30	90 DEG SMOOTH SHOT RAD BEND	NO	7	74.9
31	90 DEG SMOOTH SHOT RAD BEND	NO	7	9.8
32	90 DEG SMOOTH SHOT RAD BEND	NO	14	7
33	90 DEG SMOOTH SHOT RAD BEND	NO	7	10.5
34	90 DEG SMOOTH SHOT RAD BEND	NO	7	11.2
35	90 DEG SMOOTH SHOT RAD BEND	NO	28	296.24
36	90 DEG SMOOTH SHOT RAD BEND	NO	7	240.8
37	90 DEG SMOOTH SHOT RAD BEND	NO	7	10.71
38	90 DEG SMOOTH SHOT RAD BEND	NO	7	4.06

39	90 DEG SMOOTH	SHOT RAD BEND	NO	7	4.06
40	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	652
41	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	504
42	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	8.8
43	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	8.8
44	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	15.4
45	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	8.8
46	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	26
47	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	8.8
48	FLANGE GASKET	TEFLON 5 MM THIC	ST	40	6.8
49	FLANGE GASKET	TEFLON 5 MM THIC	ST	80	13.6
	TOTAL				45371.33

# STATUTORY REQUIREMENT

*OF*

# CONTRACT

**ES : F : 009**



R 05- 275

**ERECTION SERVICES DEPARTMENT**  
**BHARAT HEAVY ELECTRICALS LIMITED**  
( A Government of India Undertaking )  
BOILER AUXILIARIES PLANT  
INDIRA GANDHI INDUSTRIAL COMPLEX  
RANIPET – 632 406

**BHARAT HEAVY ELECTRICALS LIMITED  
BOLIER AUXILIARIES PLANT  
INDIRA GANDHI INDUSTRIAL COMPLEX  
RANIPET –632 406.**

**TENDER SPECIFICATION NO. BAP:ERN:NSPCL:ESP:MECH:C:233**

**CHECK LIST**

Tenderers are required to fill in the following details:

- |   |                   |
|---|-------------------|
| <b>1. a. Name of the Tenderer<br/>With address</b>  | <b>:</b>          |
| <b>b. Nature of Firm</b>  | <b>:</b>          |
| <b>2. Whether EMD submitted as per tender<br/>Specification Terms and conditions</b>                        | <b>: YES / NO</b> |
| <b>3. Validity of offer (offer shall be kept valid for<br/>acceptance for a period of minimum 6 months)</b> | <b>: YES / NO</b> |
| <b>4. Whether tenderer visited the erection Site and<br/>acquainted with Site Conditions before quoting</b> | <b>: YES / NO</b> |
| <b>5. Whether the following details are furnished.</b>  |                   |
| <b>a. Previous Experience – Photocopies as in QR</b>  | <b>: YES / NO</b> |
| <b>b. Present assignments</b>   | <b>: YES / NO</b> |
| <b>c. Organization chart of the Company</b>   | <b>: YES / NO</b> |
| <b>d. Financial status of the Company</b>   | <b>: YES / NO</b> |
| <b>e. In case of Company, proof of<br/>registration of the Company</b>                                      | <b>: YES / NO</b> |
| <b>f. Memorandum and Articles of Association of<br/>Company / copy of Partnership Deed.</b>                 | <b>: YES / NO</b> |
| <b>g. Profit and Loss Account For the last three Years</b>  | <b>: YES / NO</b> |
| <b>h. Balance sheet for the last three years</b>  | <b>: YES / NO</b> |
| <b>i. Income Tax clearance Certificates</b>   | <b>: YES / NO</b> |
| <b>j. Solvency Certificate from a Nationalized Bank</b>   | <b>: YES / NO</b> |
| <b>k. Power of Attorney of the person signing the tender<br/>duly attested by a Notary Public</b>           | <b>: YES / NO</b> |

- l. Names and addresses of Directors, Partners their Experience and qualification : YES / NO**
- m. Manpower Organization chart and Tools list with deployment plan at Site for satisfactory completion of work under this specification : YES / NO**
- n. EPF registration No. ( with a copy of certificate) : YES / NO**
- o. Service Tax registration No. ( with a copy of certificate) : YES / NO**
- p. E- payment acceptance as per appendix. : YES / NO**
- q. Rate schedule as per the schedule appended : YES / NO**
- 6. Whether the Tenderer is conversant with local labour laws and 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) filled : YES / NO**
- 9. Whether the erection schedule (as per appendix enclosed) furnished : YES / NO**
- 10. Whether all the pages are read, understood and signed : YES / NO**

**SIGNATURE OF TENDERER**

**NOTE : The tenderers are requested to peruse the Tender Specification terms and conditions carefully and furnish the above information also in detail as required.**

**TENDER SPECIFICATION No. : BAP:ERN:NSPCL:ESP:MECH:C:233**

(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

**CERTIFICATE OF NO DEVIATION**

I / We .....of M/s .....  
hereby certify that there is no deviation from the Tender conditions either technical  
or commercial and I am / We are agreeing to all the terms and conditions mentioned  
in the Tender Specification (No. : **BAP:ERN:NSPCL:ESP:MECH:C:233**).

**Date :**

**SIGNATURE OF THE TENDERER**

**TENDER SPECIFICATION No. : BAP:ERN:NSPCL:ESP:MECH:C:233**

(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

**DECLARATION SHEET**

I, .....  
hereby certify that all the information and data furnished by me with regard to this Tender Specification No. BAP : ERN : NSPCL : ESP: MECH: C :233 are true and complete to the best of my knowledge. I have gone through the specification, conditions and stipulations in detail and agree to comply with the requirements and intent of specifications. 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 AND ADDRESS:

AUTHORISED REPRESENTATIVE'S SIGNATURE  
WITH NAME AND ADDRESS

**FINANCIAL VIABILITY**

1. **Owner's Capital in the business**  
(In case of Partnership please : Rs.  
Mention percentage of shares and  
Amount)
  
2. **Quantum of business done during : Rs.**  
Last three financial years.
  - 1.
  - 2.
  - 3.
  
3. **Value of Fixed Assets of the : Rs**  
business in last three years
  - 1.
  - 2.
  - 3.
  
4. **Guarantee limits (if any) : Rs.**  
Enjoyed by the firm
  
5. **Overdraft limits (if any) : Rs.**  
Enjoyed by the firm
  
6. **Income Tax paid during the last : Rs.**  
three Years
  
7. **Please state whether audited :  
profit and Loss Account and  
Balance Sheet for last 3 Years  
and Solvency Certificate are  
Enclosed.**

**Signature of the Tenderer**

## ORGANISATION STRUCTURE

1. **Management structure of the firm:**  
Whether public limited / Private Limited / Sole Proprietorship / Partnership.
2. **Details of the staff presently on permanent rolls of the organization.**
  - a) **Engineering / Supervisory Staff.**  
Quote Experience in types of works as well as number of years in each.

Sl. No.	Name and Designation	Qualification	Experience	Proposed to be deployed at Site for this job	Remarks if any

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**Signature of the Tenderer**

**b) Details of Technical staff:**

<b>Sl. No.</b>	<b>CATEGORY</b>	<b>Total Number on Experience Rolls</b>	<b>Numbers Proposed to be deployed at site for this job</b>
01.	Supervisors / Foreman		
02.	Store Keepers		
03.	Electrician		
04.	Fitters		
05.	Welders		
06.	Sarang		
07.	Rigger		
08.	Painter		
09.	Light Vehicle Driver		
10.	Heavy vehicle Driver		
11.	Semi-skilled worker		
12.	Unskilled Worker		
13.	Crane Operators		
14.	Crane Maintenance Staff		
15.	Other vehicles maintenance staff		
16.	Other category of staff, if any		

**Signature of the Tenderer**

**FACILITIES FOR STAFF & WORKERS AT SITE****1. ACCOMMODATION:****a) For Engineer / Supervisor / other staff**

<b>Sl. No.</b>	<b>Category</b>	<b>Type of accommodation</b>	<b>Facilities provided</b>	<b>Remarks if any</b>
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**b) No. of quarters, plinth area of each quarter and estimated cost proposed to be constructed for workmen.****1. MEDICAL:****2. CONVEYANCE:****3. OTHER AMENITIES:**

**Signature of the Tenderer**

**SCHEDULE TO BE FURNISHED BY THE TENDERER**

1. Bidder shall submit the following technical proposal documents (a detailed write-up on his erection plan) along with the offer indicating the proposal to achieve the milestone dates, giving details of erection sequence, manpower deployment plan and T&P deployment plan for the various erection activities. The bidder shall submit histograms for Equipment, Staff and Labour to be deployed on the Work.
  - a. Method Statements along with appropriate drawings for pre-assembly works, dismantling works and erection works
  - b. Site establishment plan based on the ESP layout drawing provided, showing the locations of site office, storage yard, tower crane location, mobile crane/ trailer movement to facilitate the pre-assembly works, dismantling works and the erection works
  - c. Cycle time calculations for critical activities
  - d. Rated Load chart, Range diagrams, Manual of the proposed tower crane
  - e. Rated Load chart, Range diagrams, Manual of the proposed mobile crane

**2. Bidders are required to submit details for the above. Bids received without above documentary proof are liable to be rejected.**

**3. The Tenderer is required to submit the following schedule along with his offer.**

**Schedule A:**

PERT / CPM Bar Chart showing Work Breakdown Structure, time schedule and Milestone dates

**Schedule B:**

Schedule of Plant, Equipment and Tools

**Schedule C:**

Schedule of Project Staff ( identifying skill and work area)

**Schedule D:**

Schedule of Labour -Day wise deployment of skilled / semiskilled / unskilled and other categories of workers to suit the above programme.

**Schedule E:**

Schedule of Consumables ( LPG, Oxygen, Welding Electrodes, etc.,)

**Schedule F:**

Day wise schedule of erection quantities

**SCHEDULE ‘G**

**Construction power / electricity required for / Office / stores / workshop sheds, etc. of the tenderer in the following format.**

**a) Construction power required**

**Average**

**Peak**

**Amp .....**

**KVA .....**

**b) Electricity required for Office & Storage sheds**

Average

Peak

Amp .....

KVA .....

**4. Tender offers are liable to be rejected in the event of non-submission of above schedules along with the offer complete with all the details asked for.**

**Note: Contractor may also indicate their ability in completing the contract in a period shorter than that mentioned.**

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**ANALYSIS OF UNIT RATE QUOTED (Only Percentages to be Quoted)**

Sl. No.	Description	Percentage of the unit rate quoted	Remarks if any
01.	Site facilities viz. electricity, water, workshop and other infrastructure facilities		
02.	Salary & wages for staff and workers		
03.	Consumables		
	a) Gases		
	b) Electrodes		
	c) Steel materials		
	d) Others		
04.	Depreciation and maintenance for T&P, other items		
05.	Establishment and Administration expenses of sites		
06.	Retrenchment benefit		
07.	Overheads		
08.	Extra work incidental to erection		

**NOTE: All Tenderers are requested to take care that the rates quoted by them are not disclosed in any way while furnishing the above details.**

**Signature of the Tenderer**

## A - 1

**STATUS OF TOOLS & PLANTS**

List of equipments / Machinery / T&P owned by the contractor and proposed to be deployed by the contractor for this work.

NOTE: Tenderers are required to furnish the details as desired below with regard to the equipments machinery, tools & plants, consumables and workshop facilities owned by them along with documentary proof for the same.

Sl. No.	Name of the equipment	Total Qty. Available	Quantity Proposed to be Deployed	Type Capacity Specification	Year of make	Date of Purchase	Registration Number	Present Location	Utility Factor of the Machine
1	2	3	4	5	6	7	8	9	10
01	Tower Crane								
02	60 MT / 75 MT / 90 MT Mobile cranes.								
03	a) 18T / 14T /12T Capacity Mobile crane								
04	5T or 8T Capacity fork-lift or Hydromack								
05	Tractor Trailors								
06	Trucks								
07	Wooden sleeper for use in the Stores. Storage yard,								

Signature of the Tenderer

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1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

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08. DC Welding Generator / Welding transformer with cables

09. Air Compressors

10. Electrical winches

10 MT Capacity

5 MT Capacity

2 MT Capacity

11. Hand winches

12. Hydraulic Torque wrenches

13. Electrode drying oven

14. Portable electrode drying oven

15. Spur gear chain pulley block

5T Capacity

3T Capacity

2T Capacity

16. Gas cutting set with hoses

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Signature of the Tenderer

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1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

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## 17. Hydraulic jacks

5T Capacity

10T Capacity

20T Capacity

## 18. Low voltage transformer with

Hand lamps

## 19. Single sheave snatch pulley blocks

5T Capacity

10T Capacity

20T Capacity

## 20. Double sheave pulley blocks

3T Capacity

5T Capacity

10T Capacity

## 21. 3T Capacity D shackle

## 22. 5T Capacity D shackle

## 23. 10T Capacity D shackle

## 24. 20T Capacity D shackle

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Signature of Tenderer

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1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

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25. Various sizes of portable grinders

26. Bench grinder

27. Heavy duty high speed portable grinder

28. Flexible shaft grinders

29. Pneumatic drill ½” & 1”

30. Torque wrenches      300mm  
                                    450mm  
                                    600mm

31. Pull lifts 1.5T Capacity  
                                    3T Capacity  
                                    6T Capacity

32. Compensating Cables

33. Steel wire ropes for guy ropes

34. Bench files of various sizes

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Details of Maintenance facilities to be provided at Site for maintaining the various Equipment:

Signature of the Tenderer

B-I

**ANALYSIS OF SIMILAR JOBS EXECUTED / IN PROGRESS IN THE LAST SEVEN YEARS**

Sl. No.	Details of Jobs executed / In progress With location of projects	Financial value of the contracts	Number of Strikes / work stoppages with duration and mandays Lost during Execution of job	Number of accidents (fatal / Minor)	Details of insurance provided for the workers for accidents / deaths	Details of safety equipments provided to workers
1	2	3	4	5	6	7

Signature of the Tenderer

## B – II

**( FOR ESP PROJECTS ONLY )**

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Sl. No.	Name of the Project with unit capacity	Date of letter of Intent	Date of start of erection	Date of collecting electrode Loading	Trial run of rapping motors	Date of air tightness test	Date of GD test	Testing & commissioning
1	2	3	4	5	6	7	8	

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Signature of the Tenderer

# GENERAL CONDITIONS OF CONTRACT

FOR

WORKS

( SECTION – I & II )

**ES : F : 010**



**ERECTION SERVICES DEPARTMENT**

**BHARAT HEAVY ELECTRICALS LIMITED**

( A Government of India Undertaking )

**BOILER AUXILIARIES PLANT**

**INDIRA GANDHI INDUSTRIAL COMPLEX**

**RANIPET – 632 406**

**BHARAT HEAVY ELECTRICALS LIMITED**  
**BOILER AUXILIARIES PLANT**  
**RANIPET 632 406**  
**GENERAL CONDITIONS OF CONTRACT FOR WORKS IN ERECTION SERVICES DEPARTMENT OF**  
**BHARAT HEAVY ELECTRICALS LIMITED (RANIPET)**

**SECTION -I**

**1. GENERAL INSTRUCTIONS TO TENDERERS**

**1.1. DESPATCH INSTRUCTIONS:**

- 1.1.1.** This tender specification as a whole, duly furnishing all the details required and other documents as required in the following pages, shall be duly signed and sent in a sealed cover duly super scribing the name of work as given in the tender notice.
- 1.1.2.** The tender shall be addressed to Officer inviting tender as indicated in the tender notice.
- 1.1.3.** Tenders submitted by post shall be sent by “REGISTERED POST WITH ACKNOWLEDGEMENT DUE “and shall be posted with the due allowance for any postal delay. The tenders received after the due date and time of opening are liable to be rejected. Telegraphic offers and offers received by telex may not be considered.
- 1.1.4.** Tenders shall be opened by authorized officer of BHEL at his office at the time and date as specified in the tender notice in the presence of such of those tenderers or their authorized representatives who may be present.
- 1.1.5.** The Tenders shall closely pursue all the clauses, specifications and drawings indicated in the tender documents before quoting. Should the tenderer have any doubt in the meanings of any portion of the tender specification or find discrepancies or omission in the drawings or the tender documents issued are in complete or shall require clarification on any of the technical aspect, scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender.
- 1.1.6.** Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later, on the ground of lack of knowledge.
- 1.1.7.** Tenderer must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification must be signed and submitted along with the offers by the tenderer in token of complete acceptance thereof. The information furnished shall be complete by itself.
- 1.1.8.** The tenderers shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words.
- 1.1.9. Discrepancy in Quoted Rates :**
- a. If, in the price structure quoted, there is a discrepancy between the Unit rate quoted and the Total Price (which is obtained by multiplying the unit price by the quantity) due to arithmetical errors, the Unit rate quoted will be considered valid and the Total price will be corrected accordingly, unless in the opinion of BHEL there is an obvious misplacement of decimal point in the unit price. In which case the total price as quoted shall govern and the unit price corrected accordingly.
  - b. If there is an error in total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
  - c. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

- d. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date before which the bidder has to send their acceptance on the above lines. If the bidder does not agree to the decision of BHEL, the bid is liable to be ignored.

**1.1.10.** In case of difference in rates between words and figures, the least of the two will be treated as valid rate.

**1.1.11.** For the purpose of the tender, the metric system of units shall be used.

**1.1.12.** All entries in the tender shall either be typed or be written in ink. Erasers and overwriting are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer.

**1.2. QUALIFICATION OF TENDERERS:**

Only tenderers who have previous experience in the work of this nature and description detailed in this tender specification are expected to quote for this work duly submitting details of experience along with the offer. Offers from tenderers who do not have proven and established experience in the field are not likely to be considered.

**1.3. DATA TO BE ENCLOSED:**

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

**1.3.1. FINANCIAL STATUS:**

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

**1.3.2. INCOME TAX CERTIFICATE:**

A certificate of Income Tax clearance from the appropriate authority in the forms prescribed there for indicating annual turnover and the Sales Tax clearance certificate from the appropriate authorities as prescribed by the concerned state government, if any. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during the period.

**1.3.3. PREVIOUS EXPERIENCE:**

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

**1.3.4. ORGANISATION CHART:**

The Organisation pattern that is presently available with the tenderer and that will be employed by the tenderer for this work shall be furnished.

**1.3.5.** An attested copy of the Power of Attorney, in case the tender is signed by an individual other than the sole proprietor, shall also be attached. (If it is a Company or Firm, etc., Director/Managing Partner as the case may be is required to sign)

**1.3.6. IN CASE OF AN INDIVIDUAL:**

His full name, address and place and nature of business shall be indicated.

**1.3.7. IN CASE OF PARTNERSHIP FIRMS:**

The names of all the partners and their addresses be furnished along with a copy of the partnership deed/instrument of partnership duly certified by Notary Public shall be enclosed.

**1.3.8. IN CASE OF COMPANIES:**

Date and place of registration including date of commencement certificate in case of public companies (certified copies of Memorandum and Articles of Association are also to be furnished) are to be furnished.

**1.3.9.** Nature of business carried on by the Company and the provisions of the Memorandum relating there of shall be furnished.

**1.3.10** Names and particulars including addresses of the Directors and their previous experiences shall be furnished.

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

**1.3.12** In addition to the above, the particulars required in various annexure shall also be furnished.

**1.4. EARNEST MONEY DEPOSIT:**

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

**1.4.1.1.EMD shall be deposited in cash ( as permissible under income tax act ), Payorder or Demand Draft ( payable at Ranipet in favour of “Bharat Heavy Electricals Ltd.,” ) only. No other form of EMD remittance shall be acceptable to BHEL.**

**1.4.1.2.**In case of payment of EMD in the form of Cash, the amount should be remitted by the tenderer to the Cash Office of Bharat Heavy Electricals Limited, BAP,Ranipet-632 406 during it's working hours and cash receipt issued shall be enclosed along with the tender.

**1.4.2.** Tenders received without Earnest Money in full in the manner prescribed above are liable to be rejected.

**1.4.3.** The Earnest Money Deposit of the successful tenders may be retained towards part of Security Deposit.

**1.4.4.** In the case of unsuccessful tenderers, the Earnest Money will be refunded to them within a reasonable time after finalisation of the tender.

**1.4.5.** Earnest Money Deposit by the tenderer will be forfeited as per tender documents if the tenderer:

**1.4.5.1.**Fails to communicate unqualified acceptance of Letter of Intent within 15 days of date of Letter of Intent.

**1.4.5.2.**Does not commence the work within the period as per LOI/Contract. In case the LOI/Contract is silent in this regard then within fifteen days after award of contract.

**1.4.5.3.**After opening of Tender, revokes/withdraws his tender within the validity period or revises/alters his earlier quoted rates/conditions.

**1.4.5.4.**Fails to submit SD as indicated in the Letter of Intent.

**1.4.6.** Earnest Money deposit shall not carry any interest.

**1.5. AUTHORISATION AND ATTESTATION:**

**1.5.1.** Tenders shall be signed by persons duly authorized /empowered to do so. Certified copies of such authority and relevant documents shall be submitted along with the tenders.

**1.6. VALIDITY OF OFFER:**

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

## **1.7. EXECUTION OF CONTRACT:**

The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The successful tenderer shall be required to execute an agreement in the prescribed form (Annexure-D) with BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment. The expenses for completion, stamping and registration of the agreement with prescribed authority, if necessary, shall be borne by the Contractor.

## **1.8. SECURITY DEPOSIT:**

**1.8.1.** Upon acceptance of tender, the successful tenderer within the time specified in the letter of intent must deposit the required amount of Security Deposit for satisfactory execution of work and shall not commence work under this contract before remitting security deposit except as directed by BHEL.

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

**1.8.2.1.** In the case of work costing up to Rs.10 lakhs – 10% of the quoted value.

**1.8.2.2.** In the case of work costing Rs.10 lakhs to Rs.50 lakhs – Rs.1 lakh plus 7.5% of the amount exceeding Rs.10 Lakhs.

**1.8.2.3.** In the case of work costing more than Rs.50 Lakhs – Rs.4 lakhs plus 5% of the amount exceeding Rs.50 Lakhs.

### **1.8.3. The Security Deposit may be furnished in any one of the following forms:-**

**1.8.3.1.** Cash ( as permissible under the income tax act ).

**1.8.3.2.** Payorder , Demand Draft in favour of BHEL.

**1.8.3.3.** Local cheques of Scheduled Banks, subject to realization.

**1.8.3.4.** Securities available from Post Offices such as National saving Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).

**1.8.3.5.** Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the companies act. The Bank Guarantee format should have the approval of BHEL (Annexure-E). The Bank Guarantee furnished towards Security Deposit should be kept valid by proper renewal till the expiry of 6 Months after the said work is actually completed.

**1.8.3.6.** Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the companies act. The FDR should be in the name of the contractor, account BHEL, duly discharged on the back.

**1.8.3.7.** Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases atleast 50% of the security deposit ( as Bank Guarantee or Demand Draft ) should be remitted before start of the work and balance 50% may be recovered from the running bills till the full Security Deposit is made up.

**1.8.3.8.** EMD of the successful tenderer may be converted and adjusted against the security deposit on specific request by the contractor.

**1.8.3.9.** Acceptance of security deposit as per clause 1.8.3.4 and 1.8.3.6 above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith.

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

**1.8.5** Failure to deposit the Security Deposit within the stipulated time, may lead to forfeiture of Earnest Money and cancellation of the award of work.

**1.8.6** If any part of Security Deposit of the Contractor is held in the form of approved securities it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Ranipet, in such a manner that the same can be realized fully without referring to the Contractor, BHEL shall not be responsible for any depreciation in the value of the Security while in BHEL's custody or for any loss of interest thereon.

**1.8.7** BHEL reserves the right to forfeiture of Security Deposit in addition to the other claims and penalties in the event of the Contractor's failure to fulfill any of the Contractual obligation including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL or in the event of termination of Contract as per terms and conditions of Contract. BHEL reserves the right to set off the Security Deposit, against any claims of any other contracts with BHEL.

**1.8.8 RETURN OF SECURITY DEPOSIT:**

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

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

**1.9.1.** The acceptance of Tender will rest solely with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.

**1.9.1.1.** To reject any or all of the tenderers.

**1.9.1.2.** To split up the work amongst two or more Tenderers.

**1.9.1.3.** To award the work in part.

**1.9.1.4.** Either of the contingencies stated in (1.9.1.2) and (1.9.1.3) above to modify the time for completion suitably.

**1.9.2.** Conditional and Unwitnessed tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.

**1.9.3.** If a tenderer expires after the submission of his/her tender or after the acceptance of his/her tender, BHEL may at their discretion cancel such tender. If a partner of a firm expires the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.

**1.9.4.** BHEL will not be bound by any power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the Contract. They may, however recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

**1.9.5.** If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or cancel the contract, if awarded. The Earnest Money/Security Deposit /any other money due shall also be forfeited.

**1.9.6.** Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing in any form are liable to rejection.

**1.9.7.** Should a tenderer or contractor or in the case of a firm or company of contractors one or more of its partners/share holders/Directors have a relation or relations employed in BHEL, the

authority inviting tender shall be informed of the fact along with the offer, failing this BHEL may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.

- 1.9.8.** The successful tenderer should not sub-contract the part or complete work detailed in the tender specification undertaken by him without written permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him.
  - 1.9.9.** No deviation from the tender specification shall be acceptable to BHEL. Tenderers shall confirm their unqualified acceptance of the terms and conditions by giving an undertaking to this effect in a separate letter as specified by BHEL.
  - 1.10. NO INTEREST shall be payable by BHEL on Earnest Money / Security Deposit / or any money due to the Contractor by BHEL.**
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## SECTION -II

### 2.1. DEFINITION:

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

- 2.1.1. BHEL or (B.H.E.L Ltd)** shall mean Bharat Heavy Electricals Limited a Company registered under Indian Companies Act 1956, with its Registered Office at BHEL House, Siri fort, New Delhi 110 049 or its Authorised Officers or its Resident Engineer or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
- 2.1.2. “GENERAL MANAGER”**  
shall mean the Officer in Administrative charges of contracting unit of BHEL.
- 2.1.3. “ENGINEER” or “ENGINEER IN CHARGE”** shall mean Engineer who is in-charge for the works referred in Erection Services. The term also includes PROJECT MANAGER, “RESIDENT MANAGER” “SITE ENGINEER “ “ RESIDENT MANAGER” and “ASSISTANT SITE ENGINEER “ of BHEL at the site as well as the Officers in-charge at Head Office.
- 2.1.4. “SITE”** shall mean the place or places at which the plants/equipments are to be erected and services are to be performed as per the specification of this contract.
- 2.1.5. “CLIENTS OF BHEL” or “CUSTOMER”** shall mean the project authorities to whom BHEL is supplying the equipments.
- 2.1.6. “CONTRACTOR”** shall mean the individual, firm or company who enters in to this contract with BHEL and shall include their executors, administrators, successor and permitted assignees.
- 2.1.7. “CONTRACT” or “CONTRACT DOCUMENT”** shall mean/and include the agreement or work order, the accepted appendices of rates, schedules, quantities, if any and general conditions of contract, the special conditions of contract, instructions to the tenderers, the drawings, the technical specifications, the special specifications, if any, the tender documents and the Letter of Intent/Acceptance Letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender document or subsequent letters shall not form part of the contract unless specially accepted in writing by BHEL, in the Letter of intent and incorporated in the agreement.
- 2.1.8. “GENERAL AND SPECIAL CONDITIONS OF CONTRACT”** shall mean the “Instructions to Tenderers and General and Special Conditions of Contract” pertaining to the work for which the tenderers are called for.
- 2.1.9. “TENDER SPECIFICATIONS”** shall mean the “SPECIFIC CONDITIONS, Technical specifications, appendices, site informations and drawings” pertaining to the work in which the tenderers are required to submit their offer, Individual specification number will be assigned to each tender specification..
- 2.1.10. “TENDER DOCUMENTS”** shall mean the General and Special Conditions of Contract(2.1.8) and tender specification(2.1.9).
- 2.1.11. “LETTER OF INTENT”** shall mean the intimation by a letter to the tenderer that the tender has been accepted in accordance with provisions contained in that letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.
- 2.1.12. “COMPLETION TIME”** Shall mean the period by date specified in the acceptance of tender or date mutually agreed upon for handing over of the erected equipment/plant which are found acceptable by the Engineer being of required standard and conforming to the specifications of the contract.

- 2.1.13. “PLANT”** shall mean and cannot the entire assembly of the plant and equipments covered by the contract.
- 2.1.14. “EQUIPMENT”** shall mean all equipments, machinery, materials, structurals, electricals and other components of the plant covered by the contract.
- 2.1.15. “TESTS”** shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contract work or part thereof.
- 2.1.16. “APPROVED” “DIRECTED” or “INSTRUCTED”** shall mean approved, directed or instructed by BHEL.
- 2.1.17. “WORK OR CONTRACT WORK”** shall mean and include supply of all categories of labour specified consumables, tools and tackles required for complete and satisfactory site transportation handling, stocking, storing, erecting, testing, and commissioning of the equipments to the entire satisfaction of BHEL.
- 2.1.18. “SINGULAR AND PLURAL ETC”** works carrying singular number shall also include plural and vice versa, where the context so required. Words importing the masculine gender shall be taken to include the feminine gender and words imparting persons shall include any company or association or body of individuals, whether incorporated or not.
- 2.1.19. “HEADINGS”**  
The headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
- 2.1.20. “MONTH”** shall mean calender month, unless specified otherwise in the tender.
- 2.1.21. “WRITING”** shall include any manuscript typewritten or printed statement under the signature of BHEL.
- 2.2. LAW GOVERNING THE CONTRACT AND COURT JURISDICTION**  
The contract shall be governed by the Law for the time being in force in the Republic of India, and shall be subject to the Jurisdiction of the courts having Jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu).
- 2.3. ISSUE OF NOTICE:**  
The Contractor shall furnish to the BHEL ENGINEER the name, designation and address of his authorized agent and all complaints, notices, communication and reference shall be deemed to have been duly given to the contractor or his authorized agent or left or posted to the address of either the contractor or of his representative and shall be deemed to have been so give in the case of posting on the day on which they would have reached such address in the ordinary course of post or on which they were so delivered of / or left.
- 2.4. USE OF LAND:**  
No land belonging to BHEL or their customer under temporary possession of BHEL shall be occupied by the Contractor without the written permission of BHEL.
- 2.5. COMMENCEMENT OF WORKS:**
- 2.5.1.** The Contractor shall commence the works within the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay.
- 2.5.2.** If the successful tenderer fails to start the work within the stipulated time, BHEL, at his sole discretion will have the right to cancel the contract. His earnest money and/or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL’s other rights and remedies in this regard.

- 2.5.3.** All the works shall be carried out under the direction and to the satisfaction of BHEL.
- 2.5.4.** The erected/constructed plant or work performed under this contract shall be taken over when it has been completed in all respects and/or satisfactorily put in to operation at site.
- 2.6. MODE OF PAYMENT AND MEASUREMENT OF THE WORK COMPLETED:**
- 2.6.1.** All payments due to the contract shall be paid through E-PAYMENT (EFT / RTGS) only. The contractor has to furnish acceptance for e-payment, duly indicating the bank account details in the prescribed format.
- 2.6.2.** For Progress running bill payment:  
The contractor shall present detailed measurement working sheets, in quadruplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per letter of intent. The basis of arriving at the quantities/weight shall be the relevant documents and drawings released by BHEL.
- 2.6.3.** These measurement working sheets will be checked and vetted by BHEL Engineers and quantities and percentage eligible for payment under various groups shall be decided by BHEL engineers. The abstract of quantities and percentage so arrived based on the terms of payment shall be entered in Measurement Book and signed by both the parties.
- 2.6.4.** Based on the above quantity, contractor shall prepare the bills in prescribed proforma and work out the financial value. These will be entered in Measurement Book and signed by both the parties and paid duly effecting recoveries due.
- 2.6.5.** All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained otherwise.
- 2.6.6.** Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this contract.
- 2.6.7.** The measurement shall be taken jointly by persons duly authorized on the part of BHEL and by the contractor.
- 2.6.8.** The contractor shall bear the expenditure involved, if any, in making the measurement. The contractor shall, without extra charges provide all the assistance with appliances and other things necessary for measurement.
- 2.6.9.** If, at any time due to any reason, whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re-measurements shall be borne by the contractor.
- 2.6.10.** Passing of measurement as per bills does not amount to acceptance of the completion of the work mentioned. Any left out work has to be completed if pointed out at a later date by BHEL.
- 2.6.11.** Final measurement bill shall be prepared in the final bill proforma prescribed for the purpose based on the certificate issued by BHEL Engineer that entire work as stipulated in the tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractors shall give unqualified 'No Due' and 'No Demand' certificate. All the tools and tackles loaned to them should be returned in condition satisfactory to BHEL. Quantities/Weight erected shall be prepared and paid, within a reasonable time after completion of work. After payment of final bill, only guarantee obligation percentage shall remain unpaid which shall be released in accordance with clause 2.13. The final bill quantities and financial value shall also be entered in Measurement Book and signed by both the parties to the contract.

## **2.7 RIGHTS OF BHEL**

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

- 2.7.1.** To get the work done through other agency at the risk and cost of the Contractor, in the event of Contractor's poor progress, or inability to progress the work, persistent disregard in instruction of BHEL, assignment transfer, subletting of the contract without permission of BHEL, non fulfillment of any contractual obligation etc., and to recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit / other dues.
- 2.7.2.** To withdraw any portion of work and/or to restrict/alter quantum of work as indicated and get it done through other agency and/or with departmental labour to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergency reasons/BHEL's obligation to its customer.
- 2.7.3.** To terminate the contract after due notice to cause forfeiting of Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of :
  - 2.7.3.1.** Contractor's continued poor progress.
  - 2.7.3.2.** Withdrawal from or abandonment of the work before completion of the work.
  - 2.7.3.3.** Corrupt act of contractor.
  - 2.7.3.4.** Insolvency of the contractor.
  - 2.7.3.5.** Persistent disregards to the instructions of BHEL.
  - 2.7.3.6.** Assignment transfer, sub-letting of the contract without BHEL's permission.
  - 2.7.3.7.** Non-fulfillment of any contractual obligations.
- 2.7.4.** To recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.
- 2.7.5.** To claim compensation for losses sustained including BHEL's supervision charges and overheads for completion on termination of contract and to impose penalty for delay in completion of the work at the rate of ½% of the contract value per week of delay or part thereof subject to a ceiling of 10% of contract value.
- 2.7.6.** To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contracts with their customers are terminated for any reason.
- 2.7.7.** To effect recovery from any amount due to the contractor under this or any other contractor in any other form the moneys BHEL is forced to pay to anybody, due to contractor's failure to fulfill any of his obligation.
- 2.7.8.** To restrict or increase the quantity and nature of work to suit the site requirements since the tender specification is based on preliminary documents and quantities furnished there in are indicative and approximate and the rates quoted shall not be subject to revision.
- 2.7.9.** To deploy BHEL's fitters, welders, operators and technicians in case of emergency/poor progress/deficiency in skill on the part of employees of contractor and to recover the expenditure on account of the same from contractor's bills.
- 2.7.10.** While every endeavor will be made by BHEL they cannot guarantee un-interrupted work to the contractor due to conditions beyond their control. Contractor will not be entitled for any compensation extra payment on his account.
- 2.7.11.** In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the contractor.

**2.7.12. Cancellation of contract in part or full for contractor's default:**

If the contractor:

- a) makes default in commencing the work within a reasonable time from the date of handing over of the site and continue in that state after a reasonable notice from Engineer-in-charge.

OR

- b) in the opinion of the Engineer-in-charge at any time whether before or after the date / extended date for completion, make default in proceeding with the work, with due diligence and continue in that state after a notice of seven days from Engineer-in-charge

OR

- c) fails to comply with any of the terms and conditions of the contract or after 7 days notice in writing with orders properly issued there under

OR

- d) fails to complete the work order and items of work as per individual dates for completion and clear the site on or before the date of completion or fails to achieve the progress set out in accordance with the provisions of contract.

The Accepting Officer may, without prejudice to any other right or remedy which shall have accrued or shall accrue to BHEL, cancel the contract as a whole or in part thereof or only such work order items of work in default from the contract. Whenever the Accepting officer exercises his authority to cancel the contract as a whole or in part under this condition he may complete the work at the contractor's risk and cost, provided always that in the event of the cost of completion (as certified by Engineer-in-charge, which is final and conclusive) being less than the contract cost the advantage shall accrue to the BHEL. If the cost of completion exceeds, the money due to the contractor under this contract the contractor shall either pay the excess amount ordered by General Manager or the same shall be recovered from the contractor by other means. Engineer-in-charge will have power to take possession of site and materials, constructional plant, implements, stores etc there on.

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

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

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

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

- 2.8.1.** As far as possible unskilled workers shall be engaged from the local areas in which the work is being executed.
- 2.8.2.** The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customs.

- 2.8.3.** The contractor shall comply with all state and Central Laws, Statutory Rules, Regulations etc., inclusive of those regarding labour and industrial laws which are applicable from time to time and they shall comply with the provisions of the said labour legislations, rules and regulations framed under the provisions of Employees Provident Fund and Miscellaneous Provisions Act 1952 shall be strictly followed.
- 2.8.4.** The contractor shall pay all taxes, including sales Tax on works contract if any fees, license, charges, deposits duties, tool royalty commissions or other charges which may be leviable on account of any of his operations in execution of the contract in case BHEL is forced to pay any of such taxes. BHEL shall have the right to recover the same from the contractor either from his bills or other wise as deemed fit.
- 2.8.5.** While BHEL would pay the inspection fees, of the Boiler Inspectorate, all other arrangements for the visits periodically by Boiler Inspector to site, Inspection Certificate etc., will have to be made by the contractor. However BHEL will not make any payment to Boiler Inspector in connection with contractor's welders qualification/requalification tests etc.
- 2.8.6.** The contractor shall be responsible for provision of health and sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act) safety precautions etc., as may be required for safe and satisfactory execution of the contract.
- 2.8.7.** The contractor shall be responsible for providing proper accommodation including adequate medical facilities for the personnel employed by him.
- 2.8.8.** The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.
- 2.8.9.** The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused it is the responsibility of the contractor to make good the losses or compensate for the same.
- 2.8.10.** All the properties/equipments/components of BHEL their client loaned with or without deposit to the contractor in connection with contract shall remain the properties of BHEL/their client. The contractor shall use such properties for purpose of execution of this contract, all such properties/equipments/components shall be deemed to be in good condition when received by the Contractors unless he notifies within 48 hours to the contrary. The Contractor shall return them in good condition as and when required by BHEL/their client. In case of non-return, loss, damage, repairs etc, the cost thereof, as may be fixed by the site Engineer, will be recovered from the Contractor.
- 2.8.11.** It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However, depending upon the availability/possibility BHEL's customer's handing equipment and other plants may be made available to the contractor on payment of the hire charges/free of charges, as fixed subject to the conditions laid down by BHEL/Customer from time to time. Unless paid in advance such hire charges if applicable shall be recovered from contractors bills/security deposit in one installment.
- 2.8.12.** The Contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection/construction/performing work under the contract.
- 2.8.13.** In case the Contractor is required to undertake any work outside the scope of this contract the rate payable shall be those mutually agreed upon.
- 2.8.14.** Any delay in completion of works/non-achievement of periodical targets, due to reasons attributable to the contractor, the same will have to be compensated by the Contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.
- 2.8.15.** The contractor shall arrange and co-ordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.

- 2.8.16.** All safety rules and codes applied by the client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards signs etc, or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view prevent pilferage, accidents, fire hazards and due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment, materials and construction tools and tackles shall be posted at site by the contractor till the completion of the work under this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipments, lifting tools, tackles, etc., as per prescribed standards and practices.
- 2.8.17.** The contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the type payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL Site office on or before 15th of every succeeding month.
- 2.8.18.** In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.
- 2.8.19.** No levy of payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.
- 2.8.20.** Also no idle labour charges will be admissible in the event of any stoppage caused in the work resulting contractor's labour being rendered idle due to any cause at any time.
- 2.8.21.** The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL/their client.
- 2.8.22.** Contractor shall not stop the work or abandon the site for whatsoever reason or dispute, excepting for force major conditions. All such problems/dispute, shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.

## **2.9. CONSEQUENCES OF CANCELLATION:**

Whenever BHEL exercises its authority to terminate the contract/withdraw a portion of work under the clause 2.7 they may complete the work by any means. In the event of the cost of completion as certified by the site Engineer which is final and conclusive being less than the contract cost, the advantage shall accrue to BHEL and that if the cost of completion exceeds the moneys due to the contractor under the contract, the contractor shall either pay the excess amount ordered by BHEL or the same shall be recovered from the contractor by any other means. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per the relevant clauses.

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

## **2.10 INSURANCE:**

- 2.10.1.** BHEL/their customer shall arrange for insuring the materials/properties of BHEL / customer covering the risks during transit, storage, erection and commissioning.
- 2.10.2.** It is sole responsibility of the contractor to insure his workmen against accidents and injury while at work as required by relevant Rules and to pay compensation, if any, to workmen as per workmen's Compensation Act. The work will be carried out in a protected area and all the

rules and regulations of the client/BHEL in the area of project which are in force from time to time will have to be followed by contractor.

- 2.10.3.** If due to negligence and/or non-observance of safety and other precautions, any accident/injury occurs to any other persons/public, the contractor shall have to pay necessary compensation and other expenses if so decided by the appropriate authorities.
- 2.10.4.** If due to contractor's carelessness's, negligence of non-observance of safety precautions damage to BHEL's /customer's property and personnel should occur and if BHEL is unable to recover in full cost from the insurance company, the same will be recovered from the contractor.
- 2.10.5.** It shall be the responsibility of the contractor to provide security arrangement for the equipment/ materials belonging to BHEL and handed over to the contractor for erection/transportation till the same are taken over by BHEL after erection/returned to BHEL stores.

**2.11. STRIKES & LOCKOUTS:**

- 2.11.1.** The contractor will be fully responsible for the entire dispute and other issues connected with his labour. In the event of the contract labour resorting to strike or the contract resorting to lock-out and if the strike or lock-out declared is not settled within a period of one month, BHEL, shall have the right to get the erection work executed employing its own labour or through any agencies or both and the cost so incurred by BHEL be deducted from the contractor's bills.
- 2.11.2.** For any purpose whatsoever the employees of the contractor shall not be deemed to be in the employment of BHEL.

**2.12. FORCE MAJEURE:**

- 2.12.1** The following shall amount to FORCE MAJEURE:

Act of God or of any Government, War, Sabotage, Riots, Civil commotion, Police action revolution, Flood, Fire, Cyclones, Earth quake and epidemic and other similar causes over which the contractor has no control.

- 2.12.2.** If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by FORCE MAJEURE as defined above, the agreed time of completion of the job covered by this contract or the obligation of contractor shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.

**2.13. GUARANTEE:**

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

**2.14. ARBITRATION:**

Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in anyway arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or

otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the General Manager of BHEL and if General Manager is unable or unwilling to act, to the sole arbitration of some other person appointed by the General Manager, willing to act as such arbitrator.

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

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

Subject as aforesaid the provision of the Arbitration and Conciliation Act 1996 or any statutory modification or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

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

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

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

The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion. The award of the Arbitrator shall be final conclusive and binding on all parties to this contracts.

In the event of disputes or differences arising between one public sector and a Government Department or between two public sector enterprises the above stipulations shall not apply, the provisions of BPE Office memorandum No.BPE/CL/001/76 MAN/2(1.10)76-BPE(GM-1)dated 1<sup>st</sup> January 1976 or its amendments for arbitration shall be applied.

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**ANNEXURE –‘D’**

**BHARAT HEAVY ELECTRICALS LIMITED  
(A GOVERNMENT OF INDIA UNDERTAKING)  
BOILER AUXILIARIES PLANT  
INDIRA GANDHI INDUSTRIAL COMPLEX  
ERECTION SERVICES DEPARTMENT  
RANIPET – 632 406**

**CONTRACT AGREEMENT****AGREEMENT NO: BAP : ERN : BHE :****DATE:**

Name of work :

Name of the contractor with full address :

Amount of tender accepted :

Letter of Intent No. :

Time allotted for completing the work :  
(date of completion)

(Officer authorized to sign the agreement)

**CONTRACTOR**

**CONTRACT AGREEMENT****AGREEMENT No: BAP: ERN : BHE :****DATE:**

This agreement made this day, the \_\_\_\_\_ of \_\_\_\_\_ between the Bharat Heavy Electricals Limited, Ranipet having its Registered Office at 'BHEL House' , Siri Fort, New Delhi 110 049 (herein after called the FIRST PARTY) of one part and Messrs. \_\_\_\_\_ (herein after called the ("CONTRACTOR") of the SECOND PARTY.

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

3. WHEREAS IN PURSUANCE of the said Contractor's Tender having been accepted, the first party has decided to give the above said work to Contractor, and WHEREAS the contract between the parties was concluded by virtue of a letter of intent issued by the First Party under reference. \_\_\_\_\_ Dt.

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

5. AND WHEREAS the said contractor has furnished a Bank Guarantee for a sum of Rs. \_\_\_\_\_ Valid up to \_\_\_\_\_ towards initial 50% security Deposit and has further agreed for balance 50% Security Deposit being recovered at 10% of value of each running bill till the full Security Deposit is made up for the satisfactory completion and performance of the work and whereas the validity of the said Bank Guarantee has to be extended by the Contractor, if so required before for the balance period of contract period and in the event of his failure to do so, the contractor shall pay or accept recovery of this amount of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only), from the bills forthwith in one installment and it has further been agreed that the failure to extend the validity of Bank Guarantee or failure to pay the aforesaid amount the manner specified above shall constitute the breach of contract, and first party reserved the right to take easy legal action deemed fit for recovering the said sum of Rs. \_\_\_\_\_ ( Rupees \_\_\_\_\_ only). This amount of Rs. \_\_\_\_\_ Will be refunded (and Bank Guarantee will be returned) to the Contractor on satisfactory completion of the work as specified in the Contract documents.

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

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

8. That the said contractor shall carry out and complete the execution of the said work to the entire satisfaction of the Engineer within the agreed time schedule.

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

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

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

12. That all charges on account of Octroi, terminal and sales-tax or other duties on materials obtained for the work shall be borne by the said contractor.

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

14. That the expression BHEL wherever occurring means THE BHARAT HEAVY ELECTRICALS LIMITED, RANIPET.

15. The contract is subject to RANIPET(TamilNadu) jurisdiction.

16. The document hereto attached viz. shall also form part of this agreement.

17. General Conditions of Contract attached to the Notice inviting tender shall form part of this contract in so far as any thing is not provided specifically in this agreement.

18. In witness hereof the parties have respectively set their signatures in the presence of :

**WITNESSES:**

(with full address)

1.

2.

**Signature of the Contractor (to be signed by a  
Person holding valid power of Attorney of the Company)**

**Date:**

**WITNESSES:**

(with full address)

1.

2.

**For and on behalf Bharat Heavy Elec.Ltd.**

**Date:**

## ANNEXURE 'E'

## PROFORMA FOR SECURITY DEPOSIT

THIS DEED OF GUARANTEE made this day of \_\_\_\_\_ by Messrs. \_\_\_\_\_ (hereinafter called the Bank) in favour of Messrs. BHARAT HEAVY ELECTRICALS LIMITED, RANIPET having its Registered Office at New Delhi (hereinafter called the Principal)

WHEREAS Messrs. \_\_\_\_\_ (hereinafter called the Contractor) has entered in to a Contract with Bharat Heavy Electricals Ltd., Ranipet arising out of Letter of Intent No. \_\_\_\_\_ Dt. \_\_\_\_\_ addressed by the Principal to the Contractor (hereinafter called the said agreement) for

AND WHEREAS the said Agreement provides that the contractor shall pay a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) towards 50% of full Security Deposit to be made in the form and manner therein specified.

AND WHEREAS the Contractor have approached the Bank and at their request and in consideration of the agreement arrived at between the said contractor and the Bank, the Bank has agreed to give such guarantee as hereinafter mentioned to the Principal.

NOW, therefore, these present witness that we the Bank by the hand Mr. \_\_\_\_\_ its lawfully and duly constituted attorney, do hereby undertake to pay to the principal a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) without demur on demand being made by the principal and to keep the principal indemnified to the extent of Rs. \_\_\_\_\_ by virtue of this guarantee against any loss or damage caused to or suffered by the principal by reason of any breach by the aforesaid contract of any of the terms and or conditions, stipulations or undertakings of any one of them contained in the said Agreement and the tender documents attached thereto and for the payment of any money or moneys payable by the said contractor to the principal under the terms and conditions of the said Agreements (the decisions regarding the breach, loss damage or payment due being solely in the discretion of the Principal).

We further undertake to pay without demur the aforesaid amount in a lump sum on demand or such part thereof as the Principal may demand from time to time irrespective of the fact whether the said contractor admits or denies such claim or questions its correctness in any Court Tribunal or Arbitration Proceedings or before any authority. The aforesaid guarantee will remain in force and we shall be liable under the same irrespective of any concession or time being granted by the principal, to the Contractor in or fulfilling the said agreement between contractor and the principal and the guarantee will remain in full force irrespective of any change of terms, conditions or stipulation or any variation in the terms of the said agreement irrespective of whether notice of such change or/variation is given to us or not and claim to receive such notice of any change/and or variation of the terms and or variation of the terms and or/conditions of the said agreement is hereby specifically waived by us. Further we shall not be release from this guarantee by any forbearance of the exercise or non-exercise of any of the powers or rights under the said agreement by the principal against the contractor irrespective of whether notice of such forbearance enforcement or non-enforcement of any powers or rights, modifications or change made in the said agreement or concessions shown to contractor by the principal is given to us or not.

The guarantee herein contained shall not be determined or affected by the liquidation or winding up or insolvency of or change in the constitution of the contractor but shall in all respects and for all purposes be binding and operative until all payments of all moneys due or that may hereafter become due to the principal in respect of any liability or obligations of the contractor under the said agreement.

We, the Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the principal under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the principal certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges the guarantee subject to however that the principal shall have no rights under this guarantee after the expiry of six months from the date of completion of the contract (the date of completion shall be as certified by the Principal) unless this guarantee is extended by agreement.

Any claim or dispute arising under the terms of this contract shall only be enforced or settled in the Court having jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu)

And lastly the Bank undertakes not to revoke this guarantee during its currency except with the previous consent of the principal in writing.

The bank hereby declares that it has power to issue this guarantee under that Bank's Memorandum and Articles of Association and the undersigned has power to do so on its behalf under the power of Attorney granted to him by the proper Authorities of the Bank.

**Date:**

**(Name of the Bank & Place)**

**Seal:**

**DESIGNATION OF THE AUTHORISED**

**PERSON SIGNING THE GUARANTEE**

**ANNEXURE –‘F’****NO DEMAND CERTIFICATE**

- 1) Name of work :
- 2) Agreement Date :
- 3) I/We certify that
  - a) I/We have completed the above work to the entire satisfaction of BHEL.
  - b) I/We have handed over all the balance materials, components, tools and tackles, machinery and other equipment of BHEL.
  - c) I/We have received the final payment from BHEL for the above work.
  - d) I/We have no further demand whatsoever from BHEL.

I/We, therefore request you to refund to me/us the security deposit of Rs. (Rupees dt. for Rs. only) and the Bank guarantee No.: After deducting all cost of expenses or other amounts that are to be paid by me/us to BHEL under this contractor other contract entered into by me/us with BHEL.

**SIGNATURE OF THE  
CONTRACTOR WITH SEAL**

**Place:**

**Date:**

- Witness**
- 1)
  - 2)
  - 3)

# SPECIAL CONDITIONS OF CONTRACT

*FOR*

# MECHANICAL WORKS

**BAP:ERN :SPN :MECH: ESP:01**



**ERECTION SERVICES DEPARTMENT**  
**BHARAT HEAVY ELECTRICALS LIMITED**  
( A Government of India Undertaking )  
BOILER AUXILIARIES PLANT  
INDIRA GANDHI INDUSTRIAL COMPLEX  
RANIPET – 632 406

**SECTION-III****SPECIAL CONDITIONS OF THE CONTRACT FOR UNLOADING AND TRANSPORTATION WORKS****3.1 RESPONSIBILITIES OF THE CONTRACTOR & SCOPE OF WORK**

- 3.1.1** Unloading of electrostatic precipitator components with connected ducts, cables, cable Trays, Electrical panels, all accessories and miscellaneous equipment including insulation & any other materials required for erection from Railway Wagons/Trailors /Lorries at the Railway Siding/ Railway Station/ Transport Godowns, Re-loading at Siding/ Godowns and transportation to storage yard/work site using Contractor's own cranes, tractors, trucks, lorries, trailers and other unloading and transporting equipments (having valid permits for their operation) unloading at storage yard and stacking, handling at storage yard for verification and restacking after verification shall be the responsibility of the contractor under this contract
- 3.1.2** It would be responsibility of the contractor to keep in contact with the BHEL authorities at site to find out the arrival of the consignment. The Railway receipt/Lorry Way Bill/ Truck Way Bills for the consignments shall be furnished by the Contractor immediately on receipt.
- 3.1.3** The Contractor is required to find out from Transport authorities regarding arrival of consignment prior to the receipt of consignment note, if any and take delivery of the same on 'Indemnity Bond'. Indemnity Bonds would be executed by BHEL, when intimation regarding arrival of consignments is furnished by the Contractor. Similar arrangements in respect of consignment received by road also shall be taken care by the Contractor.
- 3.1.4** Payment of all demurrages/wharfages that results due to Contractor's fault would be the responsibility of the Contractor and to his account. If BHEL have to make payment of demurrage/wharfage together with the freight, the amounts so paid as demurrages/wharfages for the reasons stated above shall be paid by the Contractor forthwith or would be recovered from the bills of the Contractor.
- 3.1.5** It would be the responsibility of the Contractor to examine the packages, consignments etc., on arrival and bring to the notice of transport Authorities and BHEL Authorities regarding loss/damages, if any, observed in the consignments proposed to be taken delivery of. Before taking delivery, particularly of consignments in "smalls" the weight of the package shall be checked with the invoiced weight of the packages and any discrepancies shall be reported immediately to BHEL/Transport Authorities. In case it becomes necessary to take open delivery from the authorities, Contractor should make all arrangements for taking open deliveries. All expenses connected there with shall be to the account of the Contractor. Any loss that may accrue to BHEL on account of such failures shall be debited to the Contractor's account and recovery effected from his progress bills.
- 3.1.6** Any discrepancy/shortage/damage found in the consignment after taking delivery from the carriers after giving clear receipt would be the responsibility of the Contractor and the amount liable to be lost by BHEL on such account is recoverable from the Contractor.
- 3.1.7** In case of apparent damages/shortages to/in consignments/packings noticed by the Contractor, such cases shall be brought to the notice of BHEL and cleared only with their knowledge/approval.
- 3.1.8** CONSIGNMENTS coming on Sundays and holidays are also required to be handled by the Contractor. Since the offices and godowns will probably remain closed on these days it will be the responsibility of the Contractor to contact the site Engineer/his authorized representative of BHEL at their residence and obtain instructions.

- 3.1.9** BHEL reserves the right to recover from the Contractor any loss which arises out of undue delay/discrepancy/shortage/damage or any other causes during transit from the godowns of any lorry depot and BHEL Stores or during unloading at lorry head or during stacking or any time in the custody of the Contractor.
- 3.1.10** The Contractor shall make suitable security arrangements including employment of Security personnel (round the clock) to ensure the protection of all materials/equipments and works from theft, fire, pilferage and any other damage and loss at stores/Storage yards till the contract is getting over. The contractor will be responsible for receipt and issue of materials and will maintain proper records in prescribed proforma of BHEL. The materials shall be accounted properly by the contractor on completion of contract.
- 3.1.11** Unloading from Transport equipment, re-loading and transportation, unloading at storage area of heavy/sophisticated equipment like motors, bearings, electrical panels etc., shall be done in the presence of and as per the direction of BHEL's representative, including stacking and restacking if necessity arises.
- 3.1.12** Certain packages are likely to be received by BHEL by passenger trains. The relevant parcel way bills will also be handed over to the Contractor for clearing the same from the Railway parcel office. It is the responsibility of the Contractor to clear the same at railway parcel office, transport and handover to BHEL authorities at site, under the scope of this contract. Consignments coming by road, shall also be similarly cleared, transported and handed over to BHEL authorities at site, under the scope of this contract.
- 3.1.13** Since the Consignments are expected to arrive during any time of the day, contractor shall have his workmen round the clock at site as well other places required to unload the materials. Contractor's quoted rate shall include all such contingencies.
- 3.1.14** Under the scope of this contract, it shall be the responsibility of the Contractor to provide facilities to open the package in the presence of BHEL Engineers, verifying the same, re-packing wherever and whenever necessary, properly stacking them as may be directed by BHEL so as to facilitate proper handling and verification.
- 3.1.15** The required bush clearing, filling, drainage etc. to facilitate access to materials in the storage area etc. shall be carried out by the Contractor at his own cost as directed by the Engineer.
- 3.1.16** ESP components designated for covered storage, field connection materials, motors, equipment, paint, cement etc., shall be stored on well designed racks and platforms off the ground.
- 3.1.17** All the materials shall be stored 6" above the ground level using concrete or wooden sleepers or wooden logs. No material shall be allowed to remain on ground at any time. Materials shall not be stacked in low lying areas, where it is likely to get flooded during rain. Wooden/concrete sleepers and tarpaulins wherever deemed necessary, shall be provided by the Contractor at his own cost.
- 3.1.18** Stacking of the materials shall be done as per the instruction and to the satisfaction of BHEL Engineers. The materials shall be so stacked that it should facilitate easy handling during erection. In case any negligence or improper stacking is noticed, it shall be the responsibility of the Contractor to re-stack at his cost. Failure to do so may force BHEL to get the job done through other agencies and recover the cost from the Contractor. The stacking should be done in such a way not to cause damage to the materials. On occurrence of damages, the tender should rectify the defect at his own cost.

- 3.1.19** The necessary lifting tackles, tools, wire rope slings of suitable capacities and other equipment incidental to carry out this work shall have to be arranged by the Contractor himself. All such lifting tackles and equipment shall be approved by BHEL, before they are actually used for works.
- 3.1.20** The Contractor shall execute the work in the most substantial and workman like manner. The stores shall be handled with care and diligence. Any loss to BHEL due to Contractor's lapse shall have to be made good by the Contractor.
- 3.1.21** If the contractor or his workmen or employees shall break, deface, injure or destroy any part of a building, road, kerbs, fence, enclosures, water pipes, cables, drains, electric or telephone posts or wires, trees or any other property belonging to BHEL or their client or to any part of erected equipment, stores components etc., the Contractor shall make good the same at his own expense or in default, the site Engineer may cause the same to be made good by other workmen or by other means and deduct the expense (of which the site Engineer's decision is final) from any sums that may be then or at any time thereafter become due to the Contractor or from his security Deposit or any other money due.
- 3.1.22** BHEL will carryout periodic stock verification of materials with respect to receipt and issue records. The tenderer should make available all records in proper form, for easy verification by BHEL officials. In case any shortage, pilferage, the tenderer should take all action for replacing the shortages, otherwise BHEL will replace and recover the cost of materials with BHEL overheads from the bills of the Contractor.
- 3.1.23** The contractor should note that all damages/shortages etc., in the lorryway bill/RRs while receipt of materials. Any damages observed on the materials subsequently that are not noted on the LWBs/RRs will be deemed to have been occurred during unloading and stacking of materials and the tenderer shall rectify the damages at his cost and risk.
- 3.2** LABOUR AND SUPERVISORY STAFF
- 3.2.1** The contractor shall engage especially skilled labour, e.g. sarang, riggers, khalasi etc., for works under this contract. Only fully trained and competent men with previous experience in the job shall be employed.
- 3.2.2** The supervisory staff employed by the Contractor to ensure proper out-turn of work and discipline on the part of the labour put on the job by the Contractor and in general ensure that the works are carried out in a safe and proper manner and in coordination with other labour and staff employed directly by BHEL or other Contractors of BHEL or BHEL'S Client.
- 3.2.3** The Contractor shall also furnish daily labour report showing by classification the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineer.
- 3.2.4** 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 equipment and personnel. The Contractor shall be responsible to make good the damages to personnel, equipment or other materials arising out of accidents, during execution of the work by him.
- 3.2.5** The Contractor shall employ adequate competent skilled and other categories of workers, keeping prescribed records and will act as per the rules of Central/State/Local Government factory regulations, etc., in this regards. The workers/Supervisors shall be paid minimum wages prescribed under the relevant laws and including wages of paid holidays/rest days.

- 3.2.6** The contractor and his employees shall abide and act as per the discipline and standing instructions at work site. The contractor as stated elsewhere shall be fully responsible for his workers in all respects and keep us indemnified in this regard.
- 3.2.7** Necessary electrical staff, supervisory personnel, skilled and unskilled labour including personnel with approved licence as per Indian Electrical Rules 1956 as amended.
- 3.2.8** The contractor should provide identity badges for his employees. These badges should be properly displayed by employee during the working hours.
- 3.2.9** The contractor shall employ only competent and skilled workmen fully experienced and capable performance in duties assigned to them. When local law requires your employees shall be required to acquire the necessary certificate competency for his work from the competent authority as instructed by BHEL Engineer.

### **3.3 TERMS OF PAYMENT**

- 3.3.1** The Contractor shall submit his bills once in a month duly furnishing the following information.
- 3.3.2** The gross weight as per RR/LWB/BL.
- 3.3.3** RR/PWB/LWB/BL Number
- 3.3.4** Vehicle/Truck number and number of Bundles/Boxes/Pieces in each Vehicle/Truck.
- 3.3.5** Shortage/Damage reports in BHEL'S standard material management forms.
- 3.3.6** Rate/tonne
- 3.3.7** Amount claimed
- 3.3.8** Recoveries such as hire charges etc., if any.
- 3.3.9** 75% of the rate shall be paid as soon as the materials are unloaded, transported and verified as per RR/LWB/BL/PWB/ if any subject to furnishing following information along with the bill.
- a. Shortage report/open delivery taken with respect to RR/LWB/BL/PWB if any and acceptance there of by Railway authorities/transporters etc.,
  - b. Proof of the claim lodged with Railway/Road Transporters etc., in respect of above shortage/open delivery.
  - c. Material Management Forms duly filled and certified by BHEL Engineer.
- 3.3.10** 20% of the rate shall be paid as soon as the materials are duly stacked and verified as per packing slip by opening the boxes re-packing, stacking etc., wherever necessary. Payment will be released on submission of the information as per Material Management Forms by the Contractor immediately after verification of materials and certified by BHEL Engineers. The requisite profoma would be supplied by the Site Engineer.
- 3.3.11** Balance 5% will be released after completion of the contract in full and certified by BHEL Engineer.

### **3.4 RATE SCHEDULE**

- 3.4.1** The tenderer shall quote the rate per Metric Tonne as per the 'RATE SCHEDULE' vide part II 'PRICE BID' Annexed. Conditional offers are liable to be rejected. The scope of work and the

responsibility of the Contractor as mentioned under all the clauses etc., of the tender specification shall be covered within the quoted rates.

- 3.4.2** 'The rates quoted' in the tender are to be kept firm for entire period/extended period of the contract (if any) from the date of Letter of indent issued by BHEL, No escalation, on any account whatsoever will be accepted by BHEL.
- 3.4.3** The total weight mentioned in the rate schedule is APPROXIMATE and is liable to vary later at the discretion of BHEL. No variation in quoted/accepted rates per Metric Tonne shall be allowed due to increase/decrease in total tonnage mentioned.
- 3.4.4** The work executed will be priced at the unit rate quoted by the contractor and accepted by BHEL for the purpose of the payment. For the purpose of payment the gross weight indicated in RR/LWB/PWB/BL will be taken into account for calculating the tonnage handled.
- 3.4.5** The distance if any indicated in the rate schedule are only approximate. However the tenderer should assess the various distances and site conditions by visiting the site before submitting their offer.
- 3.4.6** The tenderer is also required to quote for all the "PROVISIONAL ITEMS" if any of the rate schedule as the same may be operated according to the site conditions and entirely at the discretion of BHEL during the execution of the contract.
- 3.4.7** The tenderer is expected to fill up the 'RATE SCHEDULE' after satisfying all the terms and conditions stipulated in the TENDER SPECIFICATION.
- 3.4.8** The scope of work under this contract is deemed to be completed only when so certified by the Site Engineer of BHEL.
- 3.4.9** During the entire period of contract, the Contractor shall maintain proper progress, adequate manpower, requisite handling and transportation equipments, tools and tackles and other consumables, to meet the scheduled programme as per the priority given by BHEL Site Engineer.

### **3.5 CONTRACTOR'S PERSONNEL**

To facilitate proper stacking of materials, handling the materials at storage yard/stores, verification of material receipt position periodically, stock taking, re-packing wherever necessary after verification, contractor has to provide the following category of personnel:

- a. Store Supervisor 1 No. (Technically qualified)
- b. Unskilled/Semiskilled workers 4 Nos.

The above personnel shall be working along with BHEL personnel and to be provided by the Contractor besides his regular working personnel engaged for other operations. The rate quoted for unloading work shall be inclusive of the cost of above manpower

If the contractor fails to deploy above personnel, BHEL will deploy the persons on behalf of contractor and cost of the operation will be recovered from Contractor's Running bills.

**SECTION –IV****SPECIAL CONDITIONS OF CONTRACT FOR ERECTION****4.1 SPECIAL CONDITIONS FOR ESP**

The special conditions for ESP shall be comprising of but not limited to the following:

- 4.1.1** Any fixtures, concrete block supports, steel structures, required for temporary supporting for pre-assembly, checking, welding, lifting and handling during pre-assembly and erection shall be arranged by contractor, at his cost. It shall be the Contractor's responsibility to check the various 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 and dressing of foundations up to 40mm, for obtaining of proper face for packer plates/shims, enlarging of the pockets in foundation etc., as may be required for the erection of the equipment/plants will have to be carried out by the Contractor without extra cost.
- 4.1.2** The scope of equipment to be erected under this contract are detailed in tender specification, Technical Description etc. The schedule of weights given are approximate and are meant only to give a general idea to the Tenderer about the magnitude of the work involved.
- 4.1.3** All works such as cleaning, leveling, blue-matching, aligning, assembling for temporary erection and alignment, dismantling of certain equipments for checking/cleaning, surface preparation, fabrication of tubes and pipes as per general engineering practice at site. Cutting, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scraping, shaping, fitting up etc., as may be applicable in such erection work are to treated as incidental to erection and necessary to complete the work satisfactorily, shall be carried out by the Contractor, as part of the work.
- 4.1.4** It shall be the responsibility of the contractor to provide ladders on columns for initial work 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. Temporary welding on any structural member is permitted under special circumstances only with the approval of BHEL.
- 4.1.5** No member of the structure/platform should be cut without specific approval of BHEL.
- 4.1.6** Welding of necessary instrumentation tapping points, will also be the responsibility of the Contractor and will be done as per the instructions of BHEL Engineer. The welding of all the above items will be Contractor's responsibility even if the
- 1) Product groups under which these items are not specifically indicated in the technical Specifications.
  - 2) Items are supplied by an agency other than BHEL.
- 4.1.7** All welded joints should be painted with anti-corrosive paint. Daily welding reports in the proforma suggested by BHEL should be submitted the next day morning without fail.
- 4.1.8** All rotating machineries and equipment shall be cleaned, lubricated, checked for their smooth rotation if necessary by dismantling and refitting before erection. If in the opinion of BHEL Engineer, the equipment is to be checked for clearance at any stage of work or during commissioning period, all such works are to be carried out by Contractor at his cost.

- 4.1.9** 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 and blue matching of packer plates shall be carried out by the contractor with in the quoted rates.
- 4.1.10** The contractor shall take all reasonable care to protect the materials and equipments during stacking and erection. Preservative painting required to be done on any equipment or part during the course of stacking and erection will have to be done by the Contractor at no extra cost to BHEL. Paints and all other materials shall be arranged by the contractor.
- 4.1.11** Electrostatic precipitator collecting electrodes may require strengthening and repair due to minor transport damages before erection and spot heating in position to get correct alignment. This shall be carried out by the contractor as part of the work.
- 4.1.12** Erection, alignment/ fixing in final position of HIGH VOLTAGE RECTIFIER Transformer of ESP are in the scope of work. However testing and commissioning will be done by other agencies.
- 4.1.13** Installation of **High voltage Interlocks** (excepting rotary switch interlock in EC Panels) is in the scope of work.
- 4.1.14** **AIR-IN LEAKAGE TEST** has to be carried out after erection of ESP and before clearing for insulation. Necessary equipment like air blower, venturi, instrumentation etc. will be provided by BHEL free of charges. Handling at stores, transport, erection, commissioning, carrying out the leakage test and attending to leakages till satisfactory sealing / leak proof shall be in thje scope of work. Contractor shall dismantle the test equipment and return to BHEL stores in good condition after due reconciliation, cleaning, servicing. No separate/ additional payment is envisaged for the above.
- 4.1.15** Complete erection, alignment, testing, pre-commissioning etc. of drive motors of collecting electrode and emitting electrode rapping mechanism is in the scope of work.
- 4.1.16** Additional platforms of permanent nature for approaching different equipments, as per site requirements which may not be indicated in drawings, shall be installed by the contractor. The materials required for platforms will be supplied by BHEL in running meters at free of cost.
- 4.1.17** All welders shall be tested and approved by BHEL Engineer / client of BHEL before they are actually engaged on work. BHEL reserve the right to reject any welder without assigning any reason.
- 4.1.18** In case of any class of work for which there is no such specifications as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of BHEL Engineer at the quoted rates only.
- 4.1.19** BHEL Engineer is entitled to stop any welder from his work if found unsatisfactory for any technical reason or there is a high percentage of rejection the work welded by him which, in the opinion of BHEL Engineers, which adversely affect the quality of welding, though the welder has earlier passed the tests.
- 4.1.20** All charges for testing of welders including destructive and non-destructive tests shall have to be borne by the contractor.
- 4.1.21** All welded joints shall be subject to acceptance by BHEL Engineer/client.
- 4.1.22** The contractor shall make suitable security arrangements including employment of security personnel (round the clock) to ensure the protection of all materials/equipments and works

from theft, fire, pilferage and any other damage and loss at stores/storage yard/pre-assembly area/erection site, till the contract is getting over.

#### 4.1.23 APPLICATION OF INSULATION & CLADDING

1. Application of insulation and sheet metal covering includes leading the materials from stacking area/storage sheds to the place of work
2. The insulation work should be carried out with contractor's own scaffolding materials, tools etc.
3. Welding of hooks, supports as per pitch/applying red oxide paint to welded portion as directed and as per the drawings before application of Mineral Wool / Glass Wool mattresses and as instructed by BHEL Engineer.
4. Wool insulations are received at site as bonded / unbonded mattresses in standard sizes. These are to be dressed / cut to suit site requirement by the Contractor.
5. Applying anti-corrosive paint to the inner surface of GI/ALUMINIUM Cladding, Cutting suitable to size, shape grooving and fixing on holders as instructed and as per drawings and specifications. Application of Bituminous Sealing Compound on top of cladding joints shall be done. **SUPPLY OF BITUMINOUS SEALING COMPOUND AND ANTICORROSIVE PAINT IS UNDER THE SCOPE OF CONTRACTOR.**
6. The contractor should ensure that the finished surface of insulation confirms to dimensions and tolerances given in the drawings. Aesthetic finish & accuracy of work and time are most important.
7. Details of application of insulation and GI/Aluminium cladding are given in the various drawings of BHEL supplied to the Contractor.
8. Insulation of ESP casing, funnels, ducts, hoppers, insulator housing etc. shall be by welding of studs with retainers in a spacing of 480mm X 240mm, lagging of mineral wool/LRB wool mattresses over the retainers, sewing the mattress, fixing up of top retainers, fixing casing supports, tying binding wire over the wool, fixing of GI/Al sheets over the wool mattresses, using self tapping screws ( at spacing of 150mm for both vertical and horizontal joints) and application of bituminous sealing compound for vertical joints of sheets. The cladding sheets shall be end grooved and creased to obtain proper shape and strength as per drawing of BHEL. The contractor shall arrange required scaffoldings to undertake the work.
9. Insulation of ESP inner roof shall be by welding of studs in a spacing of 480mmX480mm, lagging of mineral wool/LRB wool mattresses, sewing the mattresses, fixing the top retainers and tying of binding wire over the wool mattresses.

#### 4.1.24 APPLICATION OF PAINT:

1. The scope of final painting work includes supply of **SYNTHETIC/EPOXY/CHROMATE RUBBERISED ENAMEL (2-PACK)** finishing paint should conform to **EPI LUX-4** specification in the rate schedule..
2. The above paint should be purchased from any one of the following brands:  
1) Shalimar 2) Berger 3) Bombay paints 4) Asian
3. Before application of paint, the surface to be painted should be thoroughly cleaned with wire brush to remove dirt, dust, rust, grease etc.

4. The painting work should be carried out with contractor's own scaffolding materials, wire brushes, painting brushes, cleaning materials etc.
5. Finishing paint is to be applied in exposed areas like ESP Supporting structure, rectifier handling system, stairs and galleries, duct supporting structure, hand- rails etc.
6. Paint of approved shade and quality is only to be applied. Approved epoxy enamel TC paint tins/packs/containers will be inspected by BHEL Engineer before opening of the seal at work site.
7. A separate register is to be maintained for painting works and for taking signature of BHEL'S Engineer during stage inspection.
8. After application of each coat of Epoxy enamel BHEL Engineer will clear application of next coat by affixing the signature in the protocol register.

#### 4.1.25 TESTS

1. The contractor shall supply manpower and consumables to carry out the required tests on the equipments such as Air-in leakage Test ( using air blower provided by BHEL), Gas tightness test by smoke test method or kerosene method and other tests such as Gas Distribution test, Performance Guarantee test etc., to be specified by the Resident Engineer, BHEL at free of cost. Contractor's quoted rate shall include blanking of hopper, funnel and ducts to conduct air-in leakage test, smoke test etc. and all other contingencies such as checking of coupling alignments, various clearances between stator and rotor components, bearing clearing, trial runs etc.
2. All the above tests should be repeated till all the equipments satisfy the requirement/obligation of BHEL to their customer.
3. PRE-COMMISIONING TEST AND COMMISIONING OF THE UNITS:
  - i. Commissioning of the equipments will involve trial runs of all the equipments erected, and any other works incidental to commissioning. Contractor shall supply labour for all these without any extra cost under this contract.
  - ii. In case any defect is detected during tests, 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 re-adjustment and re-alignment are necessary, the same shall be done as per BHEL Engineer's instructions. If any part of the equipment needs repair, rectifications or replacement, the same shall be done by the Contractor at his cost. The parts to be replaced shall be provided by BHEL.
  - iii. 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 labour requirement for the successful trial run of equipment till it is handed over to customer.
  - iv. It shall be specifically noted that the above employees of Contractor may have to work round the clock along with the BHEL Commissioning Engineers and hence any overtime payment so involved, the Contractor's quoted rates shall be inclusive of all these factors also.
  - v. During commissioning, re-aligning of rotating and other equipment, attending to leakages and minor adjustment of erected equipment may arise. The quoted rate of Contractor shall be inclusive of all such works.

- vi. In case any rework is required because of Contractor's faulty erection which is noticed during commissioning the same has to be rectified by the contractor at his cost. If, during commissioning, any improvement or rectification due to design requirements is involved the same shall be paid at man-hour rates quoted. For this purpose, daily labour report indicating there in, nature of work carried out, consumables used etc., shall be maintained by contractors and for signed by BHEL Engineers every day.

#### **4.1.26 PROGRESS OF ERECTION WORK:**

1. During the course of Erection, if the progress is found unsatisfactory, or if the target dates are to be advanced, or in the opinion of BHEL if it is found that the welders employed are not sufficient, BHEL will induct on work their own welders, in addition to Contractor's welders working and recover from the Contractor's bills the charges incurred for engaging the welders with the overheads. This is binding on the Contractor.
2. In case the Contractor's progress is found unsatisfactory, BHEL may deploy unskilled, semi-skilled, skilled operators, Technicians and other required manpower and will assist in improving the progress. All the expenses incurred for, will be recovered from Contractor's bills with overheads.
3. It is obligatory on the part of the Contractor to give daily feed back on progress of erection.

#### **4.1.27 PAYMENTS FOR WORK COMPLETED:**

1. The Tenderer shall quote separate rates per metric tonne for each of the categories of work in the rate schedule appended. No eraser should be used and no overwriting is acceptable.
2. The Contractor shall submit his running bills for erection work. The Contractor shall submit his running bills once in a month before end of each month.
3. Subject to any deduction which BHEL may be authorized to make under the contract, the Contractor shall on the certificate of the Engineer at site, be entitled for payment as explained in the payment terms.

#### **4. FOR MECHANICAL ERECTION:**

- i. 35% of contract rate on prorata basis on completion of erection.
- ii. 50% of the contract rate on prorata basis after alignment / fastening / welding / grouting along with supports are completed.

#### **5. LINING AND INSULATION:**

85% of contract rate on prorata basis progressively when the work is completed as per BHEL's drawings and instructions.

#### **6. PAINTING WORK:**

95% of contract rate on prorata basis progressively when the work is completed as per BHEL's instructions.

7. Further 10% of payment for items 4 and 5 shall be released as indicated below:

- a. Further 5% of the contract rate shall be paid on completion of mechanical erection of all the items put together and after completion of air-in leakage test, air-gas tightness test, trial runs of equipment including electrical items and the Unit is ready for commissioning and painting.
  - b. Further 5% of the contract rate shall be paid when the entire equipment is commissioned and Gas Distribution test is conducted to the satisfaction of BHEL and their client.
8. The balance 5% of the contract value for items 4 and 5 shall be paid after the guarantee period of 12 months. The guarantee period will commence from the date of handing over of unit to customer or six months after the date of successful completion of trial run, whichever is earlier, provided all erection, testing and commissioning works are completed in all respects. However this 5% amount can be released against bank guarantee valid for 12 months as aforesaid in the prescribed proforma of BHEL.
  9. The balance 5% of the contract value for item 6 shall be paid on completion of entire painting work.

#### **4.2 SCOPE OF DISMANTLING:**

The Scope of work will comprise of but not limited to following:

- 4.2.1** Disconnection and dismantling of existing mechanical structures / ducts to the extent required at site for hooking up of the system with existing system as per the instruction of Site in-charge, loading of dismantled components to transport equipments, transportation to BHEL'S Clients storage yard after weighment if required and unloading etc., by supplying required manpower, all consumables and using contractors own trucks, lorries, tractors, trailers, cranes and other unloading, transporting and material handling equipments (having valid permission for their operation)

#### **4.2.2 PROGRESS OF DISMANTLING WORK:**

1. During the course of dismantling if the progress is found unsatisfactory, or if the target dates to be advanced, or in the opinion of BHEL if it is found that the workers employed are not sufficient BHEL will induct on work their own workers in addition to contractor's workers and recover from the contractors bills the charges incurred for engaging the workers with the overheads. This is binding on the contractor.
2. In case the contractor's progress is found unsatisfactory, BHEL may deploy gas cutters, fitters and technicians etc., and will assist in improving the progress. All the expenses incurred for will be recovered from contractors bill with overheads.
3. It is obligatory on the part of the contractor to give daily feedback on progress of dismantling.

#### **4.2.3 PAYMENTS FOR WORK COMPLETED**

##### **1) PAYMENT FOR THE DISMANTLING OF EXISTING STRUCTURE:**

- a) 95% payment of the tonnage rate for existing structure dismantling will be released on prorata basis after the materials are dismantled, transported and handed over to BHEL'S Clients storage yard.
- b) Balance 5% will be released on completion of the entire dismantling work as certified by BHEL Engineer.

### 4.3 SPECIAL REQUIREMENTS

- 4.3.1** The entire work of erection testing and commissioning of the ESP and ID FAN shall be completed within the time specified in the time schedule.
- 4.3.2** The contractor has to indicate their ability in completing the contract in all respects shorter than the period mentioned in the time schedule.
- 4.3.3** As time is the essence of this contract, the contractor shall be able to mobilize his manpower round the clock for the entire period to complete the work within the stipulated time.
- 4.3.4** The contractor should be able to mobilize all the tools, plants and consumables necessary for three shifts operation to meet the requirements.

### 4.4 IMPORTANT GENERAL & SPECIAL CONDITIONS OF CONTRACT :

#### 4.4.1 RETURN OF SECURITY DEPOSIT:

If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and their client and presents an absolute “No Demand Certificate” in the prescribed form and returns properties belonging to BHEL, handed over / lent to them for carrying out the said works, security deposit will be released to the contractor after deducting all the cost of expenses, if any, under other contracts entered in to with the contractor. It may be noted that in no case the security deposit shall be refunded /released prior to passing of the final bill.

#### 4.4.2 IDLE LABOUR

If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by FORCE MAJEURE conditions, the agreed time of completion of the contract shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency, the contractor immediately reports to BHEL in writing about the causes of delay. The contractor shall not be eligible for any other compensation.

### 4.5 RIGHTS OF BHEL IN CASE OF POOR PROGRESS OF WORK:

To get the work done through other agencies at the risk and cost of the contractor, in the event of contractor’s poor progress or inability to execute work, persistent disregard to instructions of BHEL, assignment transfer, subletting of contract without the permission of BHEL, non-fulfillment of any contractual obligation etc., and to recover compensation for such losses from the contractor including BHEL’s supervision charges and overheads from the security deposit / other dues.

**SECTION-V****5.1 Scope of Contract**

The intent of this specification is to provide services for execution of projects according to most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for the proper and efficient services towards the work allotted 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.

- 5.1.2** The contractor shall carry out the work in accordance with instructions/drawings/specification standard practices supplied by BHEL from time to time.
- 5.1.3** Provision of all types of labour, supervisors, Stores staff, watch and ward as required, tools and tackles, consumables as specified under various clauses of Tender Specification for unloading, erection, testing and commissioning and dismantling of existing structures.
- 5.1.4** Proper out turn as per BHEL plan and commitment.
- 5.1.5** Completion of work in time.
- 5.1.6** Good quality and accurate workmanship for proper performance of equipment.
- 5.1.7** Repair and rectification.
- 5.1.8** Re-conservation/preservation of all components.
- 5.1.9** **Comprehensive Reporting on the progress of the Work on daily basis, attending review meetings with BHEL to monitor and speed up the work and taking steps as directed to speed up the work/ improve the Quality and Safety of the Work.**

**5.2 FACILITIES TO BE PROVIDED AND DEVELOPED BY THE TENDERER AT HIS COST**

- 5.2.1** It shall be the responsibility of the contractor to construct his own office shed, stores shed, labour tenements, with all facilities like electricity, water supply, sanitary arrangements in the area allotted to him for the purpose.
- 5.2.2** Distribution of water for construction purposes and as well as drinking purpose from the single point provided by BHEL to various works fronts shall be the Contractor's responsibility and at his cost.
- 5.2.3** Necessary meters for recording consumption of water and power for cost analysis purpose and maintenance of the same during execution period shall be Contractor's responsibility.
- 5.2.4** Provision for distribution of electrical power from the given single central point to the required places with proper distribution boards, approved cable laying, including supply of all materials like cables, switch boards, pipes, etc., observing the safety rules laid down by the Electricity Authority of the State/BHEL/their customer shall be the responsibility of the tenderer /contractor.
- 5.2.5** As there are bound to be interruptions in regular power supply, power cut/load shedding in any construction site due to inherent power shortage in State on this account, suitable extension of time only be given and contractor is not entitled for any compensation. Such interruptions should be intimated to BHEL by the contractor timely It shall be the responsibility of the

contractor to have at least a few diesel operated welding generator sets to get urgent and important work done with out interruption.

- 5.2.6** Adequate lighting facilities such as flood lamps, 24V Safety lamps and area flood lighting shall be arranged by the Contractor at the site of constructions, pre-assembly area, Contractor's material storage area and at access roads etc., at his cost.
- 5.2.7** 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.
- 5.2.8** On completion of work, all the temporary buildings, structures, pipelines, cables etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, the same will be arranged to be removed and expenditure therefore will be recovered from the Contractor. The decision of BHEL Engineer in this regard is final.
- 5.2.9** The Contractor shall provide all materials required for scaffolding, form work and centering wherever necessary for erection should arrange at his cost.
- 5.2.10** Depending upon the nature of work and availability of facilities locally, Contractor may have to arrange for a temporary work-shop for facilitating uninterrupted progress of work.
- 5.2.11** The contractor shall secure and maintain comprehensive including third party insurance for appropriate amount to protect your and our interest against all risk and claims to the men/women or for labour force. If failure in securing the insurance policies in this regard shall not absolve you from reimbursing to us for any loss / damages / injuries or death to any person.
- 5.2.12** The contractor shall be fully responsible for obtaining labour licence/approval if any, from State/Central/Local authorities at his own cost and risk.
- 5.2.13** It is the responsibility of contractor to obtain approval from statutory authorities like pollution control board, Factory Inspectorate etc., if necessary.

### **5.3 GASES**

- 5.3.1** All required gases like oxygen / Acetylene / LPG for the 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 attending the required progress.
- 5.3.2** In case of improper arrangement of above gases, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's bill at market value plus BHEL departmental charges as may be fixed from time to time and postponement of recoveries is not permissible. The decision of BHEL Engineer in this regard is final and binding on the Contractor.
- 5.3.2** BHEL reserves the right to reject the use of any gas in case the required purity is not maintained.
- 5.3.3** The Contractor shall submit Weekly / fortnightly / monthly statements / reports regarding consumption of above gases for cost analysis programme.
- 5.3.4** The Contractor shall ensure safekeeping of the inflammable cylinders at separate place away from normal habit with proper security etc.

## **5.4 ELECTRODES**

- 5.4.1** All the electrodes 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 subjected to inspection and approval of BHEL. The Contractor shall inform BHEL, the details regarding type of electrode, batch number, date of expiry etc.
- 5.4.2** Storage of electrode shall be done in an air-conditioned / controlled humidity room as per requirement.
- 5.4.3** Shortage of any of the electrodes for the equipment suggested by BHEL shall not be quoted as reason for deficiency in progress or for additional rate.
- 5.4.4** BHEL reserves the right to reject the use of any electrodes at any stage, if found defective because of bad quality, improper storage, quality, date of expiry, unapproved type of electrodes etc. It shall be the responsibility of the Contractor to replace at his cost with out loss of time.
- 5.4.5** All electrodes shall be dried in the electrodes drying oven to the temperature and period specified by BHEL Engineer before they are used for erection work. Electrode drying ovens shall be provided by the contractor.
- 5.4.6** In case of improper arrangement for 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 the departmental charges of BHEL communicated from time to time. Postponement of such recovery is not permitted.
- 5.4.7** Contractor shall submit weekly / fortnightly / monthly statement / reports regarding consumption of electrodes of all types for cost analysis purpose.

## **5.5 CRANE AND OTHER TOOLS AND TACKLES**

- 5.5.1** All the T&P including Cranes, trucks, Lorries, tractors, trailers etc required for the satisfactory execution of work shall be arranged by the Contractor. BHEL will not arrange any Tools and Plants.
- 5.5.2** All the T&P arranged by the Contractor including electrical connection wherein required shall be reliable / proven tested with necessary test certificate.
- 5.5.3** All the T&P, lifting tackles including wire ropes, slings, shackles and electrically operated equipments arranged by Contractor shall be got approved by BHEL Engineer before they are actually put on use.
- 5.5.4** Civil works required for safe and efficient operation of tools and tackles shall be the Contractor's responsibility.
- 5.5.5** Contractor shall take into consideration the above clauses and quote the rates as called for in the rare Schedule.

## **5.6 SUPERVISORY STAFF AND WORKMEN**

- 5.6.1** The Contractor shall supply all skilled workmen like welders, gas cutters, riggers, erectors, carpenters, fitters, electricians etc., in addition to other skilled, semi-skilled, unskilled

workmen required for all the works of receipt, material handling, transportation, erection, testing and commissioning & dismantling contemplated under this specification. Only fully trained and competent men with previous experience in the job shall be employed. They shall hold certificates wherever necessary. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor. BHEL reserves the right to insist or removal of any employee of the Contractor shall for with remove him.

- 5.6.2** The supervisory staff employed by the Contractor shall ensure proper out-turn of work and discipline on the part of the labour put on the job by Contractor and in general see that the works are carried out in a safe and proper manner and in co-ordination with other labour and staff employed directly by BHEL or other contractors of BHEL or BHEL'S client.
- 5.6.3** The contractor shall also furnish daily labour report showing by classification the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineer.
- 5.6.4** The work shall be executed under the usual conditions affecting major power plant constructions and in conjunction with numerous other operations at site. The Contractor and his personnel shall co-operate with other personnel and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 5.6.5** The Contractor's supervisory staff shall execute the work in the most substantial and work man like manner in the stipulated time Accuracy of work and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship confirm to the dimensions and tolerances given in the drawings/instructions given by BHEL Engineers, from time to time.
- 5.6.6** The Contractor shall employ the necessary number of qualified and approved full time electricians at his cost to maintain his temporary electrical installation till the completion of work.
- 5.6.7** It is the responsibility of the Contractor to engage his workmen in shifts or on over time basis for achieving the target set by BHEL and also during the period of commissioning and testing The Contractor's quoted rate shall include all these contingencies.
- 5.6.8** In case Contractor's progress is found unsatisfactory BHEL may deploy fitters, welders, operators and technicians on BHEL rates and will assist in improving the progress. All expenses incurred for will be recovered from Contractor's bill.
- 5.6.9** If the Contractor or his workmen or employees shall break, deface, injure or destroy any part of 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 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 from the Contractor.

## **5.7 CIVIL WORKS**

- 5.7.1** Column foundation and foundation for other plants, control room building and necessary civil works shall be provided by BHEL. The dimensions of the foundation and anchor bolt pitches shall be checked by the Contractor for their correctness as per drawings. (Further, top elevation of foundations shall be checked with respect to benchmark, etc. All minor adjustments of foundation level, dressing and chipping of foundation, up to 40mm surfaces, enlarging the pockets in foundations etc., as may be required for the erection of equipment/plants shall be

carried out by the Contractor. All materials like cement, steel etc., shall also be arranged by the Contractor.

- 5.7.2** Any civil works required for safe and efficient operation of tools and tackles issued by BHEL like grouting/excavation casting of foundation for anchor points for derricks, winches etc., and any other temporary supports shall be the Contractor's responsibility.
- 5.7.3** The Contractor shall ensure perfect matching of packer plates with foundation by dressing the foundation and between the packer plates and the base plates of structural column/equipment to the satisfaction of BHEL Engineer.
- 5.7.4** Grouting of column base plates/equipments foundation box and base plates shall be carried out by BHEL.
- 5.7.5** The contractor shall satisfy himself regarding the correctness of the civil works, foundation, etc., so that the equipment erected by him shall not suffer due to any defects in the above. For this purpose, he should also visit site during the progress of civil construction works, if necessary, to ensure that the civil work is carried out as per his requirements.

## **5.8 Scope of material handling**

- 5.8.1** While BHEL will endeavor to store/stack/identify materials properly in their open/closed storage yard/shed, it shall be Contractor's responsibility to assist BHEL in identifying materials well in time for erection, taking delivery of the same, following the procedure indicated by BHEL and transport the materials safely to pre-assembly yard, erection site in time, according to programme.
- 5.8.2** The Contractor shall identify necessary supervisor/labour for the above work in sufficient quantity as may be needed by BHEL for areas covering their scope.
- 5.8.3** It shall be the Contractor's responsibility to arrange for necessary crane/tractor/trailor or trucks/slings/tools and tackles /labour/including operators for loading from storage yard on to transport equipment, move it to erection site/pre-assembly yard and unload the same at pre-assembly yard/erection site and to erect the ESP and the quoted rate shall include the same. Tenderers may please note that the storage yards are at an approximate distance of 5.0.km from erection site.
- 5.8.4** All equipments so used by Contractor shall be of proven quality and safe in operation as approved by BHEL Site Engineer's from time to time.
- 5.8.5** Any loss/damage to materials issued to Contractor shall be made good by him or BHEL will arrange for replacement at cost recovery basis and decision of BHEL shall be final.
- 5.8.6** The Contractor shall take delivery of components and equipment and special consumables from storage area after getting the approval of BHEL Engineer on standard indent forms.
- 5.8.7** In the event of Contractor's inability to arrange in time any of the above equipment/T&P etc., if possible BHEL shall provide the same on specific written request from the Contractor subject to the availability of equipment on the normal hire charges of BHEL, applicable from time to time and recoverable from Contractor's subsequent month's running bills.
- 5.8.8** All the surplus, damaged unused materials, package materials/containers, special transporting frames, gunny bags etc. supplied by BHEL shall be returned to BHEL Stores by the Contractor.

- 5.8.9** 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.
- 5.8.10** The Contractor shall make suitable security arrangements (round the clock) 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 at Site.
- 5.8.11** The Contractor shall ensure that all the packing materials and protection devices used for the various equipments during transit and storage are removed before these equipments are installed.
- 5.8.12** All equipments shall be handled very carefully to prevent any damage or loss. No bars, wire ropes, slings etc., shall be used for unloading and/or handling of the equipments without the specific written permission of the Engineer. The equipment from the storage yard shall be moved to the actual site of erection/location at the appropriate time as per the direction of BHEL Engineer so as to avoid damage for such equipment at Site.
- 5.8.13** 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. Whenever 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.
- 5.8.14** The Contractor shall be responsible for taking all safety precautions during the constructions and leaving the site safe at the end of each working day and at all times. When the work is temporarily suspended, he shall protect all construction materials, equipments and facilities from causing damage to existing property interfering with the operation of the station when it goes into service. 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.
- 5.8.15** All lifting tackles including wire ropes, slings, shackles etc., used by the Contractor shall be got approved by BHEL Engineer at Site before they are actually put on the work.
- 5.8.16** 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 and tested and commissioned and taken over by BHEL's client. The stolen/lost/damaged good shall have to be made good by the contractor at his own cost.

## **5.9 Preservation of Components**

- 5.9.1** In order to maintain the surfaces of various components from rusting etc., frequent painting/re-painting of material at storage yard has to be carried out. While BHEL will arrange for supply of paint/thinner etc., it shall be responsibility of Tenderer/Contractor to provide sufficient number of unskilled category of labour for carrying out the preservative painting. The number of labour to be supplied will depend on the quantum of work awarded.
- 5.9.2** The above-referred labour will be given by the Contractor right through the contract period without fail and any failure on their part will entail in reduction of the value of their running bills.
- 5.9.3** It shall be the responsibility of the Contractor to apply preservative painting on equipments erected by him till such time of final painting. All paints and thinner will be supplied by CONTRACTOR and it shall be Contractor's responsibility to arrange for required labour,

scaffolding materials, providing of scaffoldings, supply of cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservative painting from time to time as decided by BHEL Engineer. The quoted rate shall include this work also. It is to be noted that such painting may have to be done twice a year till such time the final painting is carried out.

**5.9.4** 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.

**5.9.5** Any failure on the part of the Contractor to carry out works according to above clauses will entail BHEL c\to carry out the job from any other party and recover the cost from the Contractor.

**5.10 DRAWING AND DOCUMENTS:**

**5.10.1** The detailed drawings, specifications, 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.

**5.10.2** 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.

**5.10.3** Should any error ambiguity be found in the specification or information, the Contractor shall for with 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.

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

**5.10.5** Deviation from design dimensions should not exceed permissible limit. The Contractor shall not correct or alter any dimension/details, without specific approval of BHEL.

**5.11 SITE CLEANLINESS AND SAFETY REQUIREMENTS:**

**5.11.1** During the course of construction, alternation or repairs, scrap lumber with protruding nails, sharp edges etc., and all other debris shall be kept cleared from working areas, passageways and stairs in and around Site. Proper house keeping is the responsibility of the Contractor.

**5.11.2** Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided by the Contractor to facilitate such removal. If this is not done regularly, BHEL will get the job done and debit the cost to Contractor.

**5.11.3** Rigging equipments for material handling shall be inspected prior to use of each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service. Necessary test certificates have to be provided by the Contractor for the rigging and handling equipments brought by them. Otherwise this will be got to be done by BHEL and the cost will be debited to Contractor.

**5.11.4** Rigging equipment shall not be loaded in excess of its recommended safe working load.

**5.11.5** Rigging equipment when not in use shall be removed from the immediate work area so as not to present a hazard to employees.

- 5.11.6** The Contractor will notify the Engineer his intention to bring on to site any equipment or any container with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the conditions under which such equipment or container may be handled and used during the performance of the works and the Contractor shall strictly adhere to such instructions. BHEL Engineers shall have the right to inspect any construction plant and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition shall be entertained.
- 5.11.7** Where it necessary to provide and/or store petroleum products or petroleum mixture and explosives, the Contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in the relevant petroleum Act., Explosive Act and Petroleum and Carbide of Calcium Manual, published by the Chief Inspectorate of Explosives of India. All such storage shall have prior approvals of BHEL Engineer. In case any approvals are necessary from the Chief Inspector of Explosives of any other statutory Authorities, the Contractor shall be responsible for obtaining the same.
- 5.11.8** Valve protection caps shall be in place and secured.
- 5.11.9** Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently.
- 5.11.10** When cylinders are transported by powered vehicles, they shall be secured in vertical position.
- 5.11.11** All the hand lamps used by the contractors workmen shall be of 24V only. Adequate step down transformers should be installed at site to cater to the complete requirement. (230V hand lamps should not be used).
- 5.11.12** All workmen of the Contractor working in construction areas shall wear safety shoes, safety helmets, & safety belt (with double harness - when working at heights). Contractor shall insure his workmen against all accidents, and the policy shall be presented to BHEL. In case of failure to do so BHEL will arrange the same and the expenditure towards this will be debited to the Contractor including BHEL overheads. In case the Contractor fails to provide necessary safety equipments to workmen, BHEL will provide the same to the workers and recover the cost of equipment along with BHEL overheads.
- 5.11.13** All the above safety conditions are not exhaustive but gives an idea for the Contractor and the Contractor shall adhere to all the safety precautions given by the BHEL Engineer at Site. Such of those workmen who do not follow safety precautions shall be turned out from Site. They will not be allowed to work until they fulfill safety regulations.
- 5.11.14** Contractor shall arrange at his cost suitable flood lighting arrangement at various levels for safe and proper working operations during night hours at the work spot as well as at the pre-assembly area.
- 5.11.15** The Contractor shall be responsible for provision of all the safety notices and safety equipments as enjoined on him by the application of relevant statutory regulations/provisions and/or as called upon by the BHEL Engineer and their client from time to time.
- 5.11.16** The Contractor shall provide temporary fencing wherever required as a safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.
- 5.11.17** The Contractor shall ensure the safety of all the workmen, material and equipments either belonging to him or to others working at site.

- 5.11.18** It will be the responsibility of the Contractor to ensure safe lifting of the equipments, taking due precaution to avoid any accidents and damages to other equipments and personnel.
- 5.11.19** The Contractor shall provide necessary first aid facilities for all his employees, representatives and workmen working at Site.
- 5.11.20** All the Contractor's Supervisory personnel and sufficient number of workers shall be trained for fire fighting and shall be assigned specific fire protection duties. Enough number of such trained personnel must be available during the tenure of the Contract. Contractor should nominate one of his supervisors to co-ordinate and for implementation of safety measure.
- 5.11.21** Contractor shall provide enough fire fighting equipment of the types and numbers at his office, temporary structures, labour colony area etc. Access to such fire fighting equipment shall be easy and kept open at all times. Compliance of the above requirement under fire protection shall in no way relieve the Contractor of any of his responsibilities and liabilities to fire accident occurring.
- 5.11.22** The Contractor shall at his cost remove from the vicinity of work, all scrap packing materials rubbish unused and other materials and deposit them in places specified by BHEL engineer to keep the work Site clean and tidy.
- 5.11.23** For this purpose the mechanical completion of erection work shall be deemed to be completed in all respects only when the trial runs of motors and gas tightness tests are completed and certified so by BHEL Engineer. The decision of BHEL in this respect shall be final and binding on the contractor.
- 5.11.24** The commissioning of the unit shall be deemed to be completed in all respects only when all the equipments are tested and commissioned and the Unit is ready for commercial operation.

**5.12 PRICE ESCALATION:**

- 5.12.1** The Contractor has to keep his quoted rates firm for the entire contractual period including total extended period, if any, and no claim for revision of rates is allowed under any circumstances.
- 5.12.2** However, the Contractor shall maintain sufficient work force and other resources required for completion of the job expeditiously for the entire contractual period including total extended period.
- 5.12.3** In case due to unforeseen circumstances and due to reasons not attributable to the Contractor, the work gets delayed and completion time gets extended as per Bar Chart from the date of actual start of work at Site, the Contractor shall not be entitled for any over run compensation for a period of first 3 months after the Contractual completion date. However, the contractor shall be paid over run charges for extension in the completion period beyond 3 months as stated above and for reasons not attributable to the Contractor. This shall be mutually discussed and settled at that time.

## SPECIAL CONDITIONS OF CONTRACT

### SECTION – VI

#### FOR MANPOWER SUPPLY ASSISTANCE ETC.

- 6.0 The quantity of manpower assistance indicated in the rate schedule is only approximate. BHEL will specify the actual requirement as and when the need arises at various stages of execution of contract. BHEL will have the option of not operating any of the items indicated in the rate schedule under manpower supply.
- 6.1 The manpower provided shall be capable of carrying out the assigned work to the satisfaction of BHEL. BHEL reserves the right to decide on the suitability of the personnel deployed and insist on removal of any employee found unsuitable for the work assigned. The contractor shall forthwith arrange for replacement.

#### 6.2 MANPOWER SUPPLY FOR SITE MANAGEMENT ETC:

Compliance with statutory obligations as well as any other requirements / provisions with respect to manpower supplied and equipment including insurance, medical facilities, minimum wages, safety requirements, accommodations, conveyance etc., are the responsibility of the Contractor. **The rates quoted shall be inclusive of all the above requirements.**

THE CONTRACTOR SHALL STRICTLY ABIDE BY THE STATE AND CENTRAL LAWS, STATUTORY RULES, REGULATIONS ETC. AS INDICATED IN THE GCC AND OTHER SECTIONS OF THE SPECIAL CONDITIONS OF CONTRACT. IN ADDITION THE CONTRACTOR SHALL HAVE TO COMPLY WITH PROFESSIONAL TAX / AND PF /ESI/ LABOUR LICENCE REGULATIONS FOR ALL HIS EMPLOYEES / WORKMAN AS PER THE LOCAL AUTHORITIES / GOVERNING BODIES INSTRUCTIONS.

#### 6.3 SPECIFICATION FOR PC SYSTEM ( 01. NO.)

For management of materials receipt, issues etc., site management activities and to prepare statements a PC is required. The Contractor should provide ONE No. of Personal Computer system as per the following specification at their cost. The rate for one no. clerk shall be inclusive of the PC. The scope of contractor shall include providing a licensed operating system ( Vista Business version ), licensed software ( latest version of MS OFFICE with CD/DVD) , maintenance, servicing and replacement of spares. The system will be kept in BHEL site office and used exclusively for BHEL's site management activities. Maintenance of the System including supply of spares is the responsibility of the Contractor, and if any fault / failure of the system occurs, it should be rectified immediately without delay at contractor's cost. The scope also includes supply of consumables like printer cartridges etc. as and when required by BHEL.

#### SPECIFICATION FOR PC SYSTEM:

To be arranged by the Contractor at their cost.

SL.NO	FEATURES	MINIMUM REQUIREMENTS
01	Processor	Intel i-3- 2130 GHz or above
02	Chipset	Appropriate Chipset
03	RAM	2GB DDR SDRAM or above
04	HDD	250 GB SATA or above
05	FDD	1.44 MB
06	Optical Drive	52 X DVD writer or higher, SATA
07	Monitor	15" TFT/LCD or larger
08	Key Board	Minimum 104 Keys Windows keyboard
09	Mouse	2 Button optical mouse

10	Ethernet	Integrated 10/100 Mbps NIC for LAN
11	Ports	Minimum 1 parallel, serial USB
12	OS & Software	Windows 7 & Office Suite
13	USB	USB-2
14	Accessories	Mouse pad & Dustcovers
15	UPS	1KVA UPS with 1 Hr. back up
16	<b>MULTI FUNCTION PRINTER</b>	<b>A4 size laser jet printer with built in FAX and Scanning facility -20 ppm or above (with all consumables, cartridges etc.)</b>

**6.4 PAYMENT TERMS FOR MANPOWER SUPPLY ASSISTANCE ETC.**  
( S.No. B of the Rate schedule)

- a) 95% of the contract rate will be released on prorata basis for the Man Months/ Months of services provided against each item as certified by BHEL Engineer at site.
- b) Balance 5% will be released on completion of the entire scope of work under this contract as certified by BHEL Engineer.
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## SPECIAL CONDITIONS OF CONTRACT

### SECTION - VII

#### 7.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORKS:

- 7.1 BHEL may consider payment for extra works on man-hour basis for such of those works which require major modification of the supplied components which is totally unusual to normal revamping / erection / commissioning work and which are not due to contractor's faulty erection.
- 7.2 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 sheets duly certified by BHEL Engineer at site. But BHEL may opt to get those work done through other agencies if they so desire.
- 7.3 All the extra works, 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 the contractor's representative and BHEL Engineer. Signing of labour sheets does not necessarily mean the acceptance of extra works. Only those works which are identified as not usual to normal revamping / erection and certified so by the Site-in-Charge of BHEL and accepted by designers/supplier's competent authority only will be considered for payment. The decision of BHEL in this regard shall be final and binding on the contractor.
- 7.4 Average single manhour rate including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, **including consumables, if any required**, for carrying out any rework / rectification that may arise during the course of revamping shall be **Rs. 60/- per man hour**.
- 7.5 Extra works are broadly defined as below:
- i) Design changes which will be intimated to the contractor after the start of the work which call for dismantling of the erected components, rectification, modification, etc.
  - ii) Repair / rectification of the components damaged during transit and intimated to BHEL before drawing the materials from BHEL stores.
  - iii) Modification, rectification of components wrongly manufactured/fabricated at works subject to acceptance of the approving authority. Any such modification work costing less than 48 Man Hours per work of a DU shall be considered as incidental to erection and shall not be considered for payment.
  - iv) Jobs which require major modification, major repair, major reworks etc. which will be identified as major and warrant extra payment, certified as such by the Site-in-Charge of BHEL and accepted by the designers/competent authority of BHEL. The decision of BHEL in this regard shall be final and binding on the contractor.

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**SPECIAL CONDITIONS OF CONTRACT****SECTION – VIII****8.0 OVER-RUN COMPENSATION (ORC):**

- 8.1 In case due to reasons not attributable to the contractor, the work gets delayed and the completion gets extended beyond the contract completion date by more than the grace period of 3 months, the contractor shall be paid Over Run Compensation for every month of extended period so determined by BHEL beyond the contract completion date (and the grace period) indicated in this specification.
- 8.2 ORC will be paid only at the end of the contract period, including extension/s of period if any, after ascertaining the actual period of eligibility of delay as aforesaid. For this purpose, the contractor shall submit details of factors with time estimates which accounted for the delay in work completion.
- 8.3 All decisions of BHEL in this regard shall be final and binding on the contractor. The period to be considered for ORC shall not include loss of time due to Force-majeure conditions explained in this tender.
- 8.4 The ORC shall be paid by BHEL only after completion of all works within the scope of the works awarded to the tenderer. Hence, it is obligatory on the part of the tenderer to complete the works during extended period also.
- 8.5 This supplements the clause 5.12 of Special conditions of Contract for Mechanical works - V enclosed along with this tender specification.
- 8.6 The rate of ORC payable per month and the total eligibility period will be determined by BHEL.

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**SPECIAL CONDITIONS OF CONTRACT****SECTION – IX****9.0 GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION**

- 9.1 For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- 9.2 BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on Internet.
- 9.3 BHEL will inform the vendor in writing, in case of reverse auction, the details of service provider to enable them to contact and get trained.
- 9.4 Business rules like event date, time, start price, bid decrement, extensions, etc. also will be communicated through service provider for compliance.
- 9.5 Vendors have to fax the compliance form in the prescribed format (provided by service provider) before start of Reverse auction. Without this the vendor will not be eligible to participate in the event.
- 9.6 BHEL will provide the rate schedule (e.g. EXCEL sheet) for the vendor to enable them to fill-in the price and keep it ready for keying in during the auction. In the event of discrepancy in rate and amount against any item of work, the least of the two will be taken for bid price. In case of discrepancy between the total price indicated in price bid and the arithmetic sum arrived based on rate quoted, then also the least of the two will be taken for the bid price. The bids are compared on the total price quoted and NOT on individual ITEM of works.
- 9.7 Reverse auction will be conducted on scheduled date & time.
- 9.8 At the end of reverse auction event, the lowest bidder value will be known on the network.
- 9.9 The lowest bidder has to fax the duly signed filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of auction without fail.
- 9.10 Opening bid in reverse Auction: The opening bid (in the reverse Auction) of the bidders shall be same as that quoted in their final sealed price submitted to BHEL(along with Technical offer). The bidder shall confirm in writing to BHEL that their opening bid (in reverse auction) shall be same as that quoted in their final sealed price bids submitted to BHEL against this NIT along with Technical Bid (Patr-1).**If any bidder offered a unsolicited discount or rebate, in separate cover etc. in any place other than the sealed price bid, then the opening price bid in reverse auction, by such a bidder in Reverse Auction, shall be the price offered in final sealed price bid submitted (against this NIT) minus discount offered in any place other than the sealed price bid.**
- 9.11 BHEL reserves the right to cancel Reverse Auction (RA) without assigning any reasons and resort to considering the sealed bids submitted by vendor for processing and finalizing the tender.

- 9.12 In case the process of reverse auction is found unsuccessful by BHEL, then BHEL at its discretion may decide to call the L1 bidder of reverse auction for further negotiation.
- 9.13 Any variation between the on-line bid value and signed document will be considered as sabotaging the tender process and will invite disqualification of vender to conduct business with BHEL as per prevailing procedure.
- 9.14 In case BHEL decides not to go for Reverse auction procedure for this tender enquiry, the Price Bids and price impacts, if any already submitted and available with BHEL shall be opened as per BHEL's standard practice.
- 9.15 Only those vendors, who participate in the Online Initial Opening Bid, will be eligible to participate in the subsequent Online English Reverse Auction.
- 9.16 Price bids offered by the bidders during reverse auction process is considered as an offer to execute the work. Bids once made by a bidder cannot be cancelled/withdrawn and bidders shall be bound to execute the work at the final bid price. BHEL shall take appropriate action if the bidder fails to do so.
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**APPENDIX - I****LIST OF MAJOR TOOLS & TACKLES TO BE ARRANGED / DEPLOYED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.**

This is only an indicative list of minimum quantities to be deployed at site. All the tools & tackles, equipment etc. that are required for completion of the work within the scheduled time period shall be arranged by the contractor. All safety equipment required for this work shall be arranged by the contractor. All safety regulations of BHEL/their client M/s.NSPCL must be followed by the contractor during the erection work.

Sl. No.	Description	Minimum Quantity to be deployed at site
01	<b>Tower Crane of suitable capacity (Details to be provided in the Tech-bid)</b>	01 No.
02	Heavy Lift Mobile crane for erection	01 No.
03	Lorry / Tractor Trailors	02 Nos.
04	Mobile crane ( Minimum 12 MT capacity)	02 Nos.
05	Welding Generator / Tranformers / Rectifiers with accessories	10 Sets.
06	Gas cutting sets	06 Sets
07	Chain Pulley blocks of various capacities	12 Nos.
08	Power winches of required capacities	04 Nos.
09	Grinding machine	02 Nos.
10	Portable Electrode Drying oven	06 Nos..
11	24 volt Transformer	02 Nos.
12	Power distribution Board	02 sets.
13	Switch board with extension wire	06 Nos.
14	Flood light fittings.	12 Nos.
15	Hand Lamps	12 Nos.
16.	<b>WOODEN SLEEPERS</b>	100 Nos.
17.	Derricks/ gin poles with mechanical winches, slings	01 No.
18.	Digital distance measuring instrument (Laser based)	01 No.
19.	Digital level measuring instrument	01 No.

**APPENDIX – II**

BHEL will provide the under listed Special Erection Tools only to the Contractor. These tools are to be returned to BHEL after completion of Erection works.

LIST OF SPECIAL ERECTION TOOLS WHICH WILL BE PROVIDED TO THE CONTRACTOR BY BHEL:

SL.NO.	Description
1.	HUCK BOLTING MACHINE WITH ACESSORIES
2.	AIR BLOWER, VENTURY ETC., FOR AIR-IN LEAKAGE TEST
3.	STRETCHING DEVICE FOR EMITTING ELECTRODE ERECTION
4.	HAND OPERATED RIVETTING GUN

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## APPENDIX – III

(To be filled by Tenderer and submitted along with Tender document )

S.No.	PARTICULARS	YES	NO
<b>01</b>	<b>SERVICE TAX</b>		
<b>a.</b>	Service Tax Registration No. of Tenderer (copy to be enclosed)		
<b>b.</b>	Issue of Service Tax Invoice as per Rule 9 of Cenvat Credit rules 2004		
<b>c.</b>	Whether Tenderer is taking Service Tax Credit for their Inputs		
<b>d.</b>	Under which Service Head is Service provided		
<b>e.</b>	If Service Tax is Exempted , furnish reasons		
<b>f.</b>	BHEL Service Tax Registration No. ( To indicate in your Invoice) : <b>AACB/4146/PST/008</b>		
<b>02</b>	<b>INCOME TAX</b>		
<b>a.</b>	PAN No. of Tenderer		
<b>b.</b>	If Exempted , furnish exemption Certificate		
<b>c.</b>	PAN No. of BHEL : <b>AAACB/4146/P</b>		
<b>03</b>	<b>WC ST</b>		
<b>a.</b>	CST Registration No.		
<b>b.</b>	VAT Registration No.		
<b>c.</b>	Whether Tenderer is availing VAT Credit		
<b>d.</b>	If Exempted , furnish Reasons		
	<b>NOTE :</b>		
	1. Rates Quoted shall be clearly indicated that they are <b>INCLUSIVE</b> of all Taxes & Duties except service tax. The Contractor has to issue invoice accordingly. Also refer clause 15.0 of Tender specification regarding Taxes & Duties		
	2. Payment will be made <b>only through e-payment</b> to your account. Payment through Cheque / DD payment will not be made by BHEL.		
<b>Tenderer has to submit Banker's Certificate as per format specified in APPENDIX- IV.</b>			
<b>Agreed to the Above Conditions</b>			
<b>Signature of the Tenderer :</b>			

**APPENDIX - IV****ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS TRANSFER**

01	<b>NAME &amp; ADDRESS OF THE SUPPLIER / VENDOR</b>	
02	<b>VENDOR CODE</b> (as in Purchase Order)	
03	<b>Details of Bank Account:</b>	
A)	<b>NAME &amp; ADDRESS OF THE BANK</b> (WITH PIN CODE)	
B)	<b>BANK TELEPHONE NUMBER</b> (WITH STD CODE)	
C)	<b>BANK BRANCH CODE</b>	
D)	<b>MICR CODE</b>	
E)	<b>ACCOUNT NUMBER</b>	
F)	<b>TYPE OF ACCOUNT</b>	CURRENT A/C / OD / CASH CREDIT
G)	<b>VENDOR NAME AS PER BANK RECORDS</b>	
H)	<b>BANK BRANCH RTGS IFSC CODE</b>	
I)	<b>BANK BRANCH NEFT IFSC CODE</b>	
J)	<b>YOUR EMAIL ID</b> (give two ids)	
K)	<b>NAME OF AUTHORISED SIGNATORY</b>	

**CERTIFICATE**

I / We hereby agree to receive the payments due from BHARAT HEAVY ELECTRICALS LIMITED, RANIPET by the National Electronic Funds Transfer and/or RTGS Transfer mode by credit to my / our above mentioned Bank Account. I / We also agree that payments made to the above mentioned Account is a valid discharge of the liability of Bharat Heavy Electricals Limited, Ranipet. I / We also agree to bear the applicable Bank Charges for the above mode of transfer.

AUTHORISED SIGNATORY OF VENDOR WITH SEAL

**Banker's Certification**

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of \_\_\_\_\_ (name of account holder), the signature of the authorized signatory and the MICR and IFSC codes of our Branch mentioned above are correct.

PLACE:

DATE:

\_\_\_\_\_  
(Manager / Officer's  
signature Under Bank stamp)

**APPENDIX - V****FORMAT FOR SUBMISSION OF DETAILS OF TOWER CRANE PROPOSED TO BE DEPLOYED BY BIDDER**

01.	Tower crane Make / version	
02.	Year of manufacture	
03.	Anchoring details	Base ballast details & Free standing height to be specified.
04.	Max. Lifting capacity	
05.	Working Height	
06.	Tip load	
07.	Jib details	
08.	Tower type	Whether self erecting with hydraulic climbing facility
09.	Other Mechanisms	Details of Hoisting, Top Slewing, trolleying etc.
10.	Safety Devices	
11	Rest platform & guard rail	
12	Electrical power in KVA	
13	Wind speed limitation	
14	Whether Data Sheet enclosed	Yes / No