

# Bharat Heavy Electricals Limited, Jhansi (U.P.)



Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00



## TENDER DOCUMENT

For Works Contract

For Tender Enquiry No.: WEX /TE/06 /25 Dated 31.03.2017

For

“(Brief Description of Work)”

**MATERIAL HANDLING , ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION & HANDING OVER OF NEW COAL FIRED BOILER PACKAGE CONSISTING OF 12 MTPH BFB TYPE MAIN BOILER (FIRING CHAMBERS, DRUM, FUEL FEEDERS & BURNERS, WATER PANEL WALLS), CHS (COAL HANDLING SYSTEM), FWIS (FEED WATER INLET SYSTEM), FHS (FLUE/STACK HANDLING SYSTEM INCLUSIVE OF ESP & CHIMNEY), ESSENTIAL ROTARY MACHINES ( ID, FD, PA FANS), SDS (STEAM DELEVERY SYSTEM) ALONG WITH PIPES, DUCTS, CABLES & OTHER MATERIAL REQUIRED FOR TOTAL OPERATIVE INTEGRATION (MECHANICAL, ELECTRICAL ,CONTROL & INSTRUMENTATION ETC.), ELECTRIFICATION, PAINTING INCLUDING TOTAL LIASIONING WORK FOR ERECTION AND OPERATION OF NEW BOILER AT BHEL PLANT LOCATED IN JHANSI (U.P.), INDIA**

Contact Person

Name: Y.K. Dhingra

Designation: Dy. Manager (WEX/Capital)

E-mail: ykdhingra@bheljhs.co.in

Phone: 0510-2412666

OR

Name: S.J. Chakraborty

Designation: AGM (WEX)

E-mail: sjc@bheljhs.co.in

Phone:0510-2412266

Tender Due Date: 28/04/2017 at 13:15 Hrs.

Tender Opening Date: 28/04/2017 at 14:00 Hrs.

Works Engineering & Services Department  
BHEL, PO: BHEL, Jhansi 284120 (UP)

We hereby accepted above  
(signature & seal of bidder)

Seal & Signature of  
BHEL contracting authority



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## DETAILS OF TENDER DOCUMENT

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**Nature of work:** MATERIAL HANDLING, ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION & HANDING OVER OF NEW COAL FIRED BOILER PACKAGE

1. BHEL JHANSI is in the process of finalizing the Works Contract for **MATERIAL HANDLING, ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION & HANDING OVER OF NEW 12 MTPH COAL FIRED BOILER PACKAGE.**
2. The tender document has been detailed as follows:
  - a) Notice Inviting Tender (Annexure A)
  - b) Work Specifications/Scope of work (Annexure B)
  - c) Qualifying Requirements (Annexure C)
  - d) Instruction to Bidder (Annexure D)
  - e) Tender Evaluation Criteria (Annexure E)
  - f) Contractor's obligations (Annexure F)
  - g) General Terms and Conditions (Annexure G)
  - h) Criteria for measurement of work (Annexure H)
  - i) Technical Bid Application (Annexure I)
  - j) Price Bid (Annexure J)
  - k) Integrity Pact and Guidelines for dealing with discrepancy in words & figures quoted in price bid (Annexure K)

The duly filled in Technical and Price / Rate bids (Annexure I and J, separately) along with the instructions to the tenders, Contractor's Obligations, General Terms and Conditions with the signature of the tender on all the pages and complete in all respects superscribed as "Quotation for Tender No. WEX/TE/06/25 DATED 31.03.2017" should reach us in a sealed cover on or before 28.04.2017 (13.15 hours) through Registered / Speed post or the same may be dropped in the tender box available at the following address:

To,  
Tender Box  
CISF Control Room/Office  
Administrative Building  
Bharat Heavy Electricals Limited  
Jhansi-284 120. UP

### **IMPORTANT NOTE:**

- 1) Dropping of tender in the Tender Box within schedule time and date is the responsibility of the bidder.
- 2) Technical bid and price bid should be submitted in separate sealed envelopes, in case the bids found in one single envelope then the bids are liable to be rejected.

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## Tender Documents

**TENDER ENQUIRY NO: WEX/TE/06/25**

**DATE: 31.03.2017**

### CONTENTS

Sl. No.	Description	Annexure No	Page no (Please Specify as required)
01.	Notice Inviting Tender	A	Page 5-6
02.	Work Specifications/ Scope of Work	B	Page 7 to 66
03.	Qualifying Requirements	C	Page 67 to 70
04	Instructions to Bidders	D	Page 71 to 74
05.	Tender Evaluation Criteria	E	Page 75 to 76
06.	Contractors obligations	F	Page 77 to 78
07.	General Terms & Conditions (with sub annexures I to IV)	G	Page 79 to 94
08	Criteria for measurement of work	H	Page 95 to 96
09	Technical Bid	I	Page 97 to 100
10	Price Bid	J	Page 101 to 104
11	Guide lines for dealing with discrepancy in words and figures quoted in price bid	K	Page 105

**NOTE-** A sample QAP is enclosed with tender document for reference, as a separate file.

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Annexure A

## NOTICE FOR INVITING TENDER

Sl. No:	Particulars	Details
1	Brief Description of work	Material handling shifting, Erection, Testing, Commissioning, Trial Operation , Liaisoning (Erection, Commissioning , Operation), Painting & Handing Over of new coal fired boiler package, at BHEL plant located in Jhansi (U.P.), India
2	Tender Evaluation Criteria	As per Annexure- E
3	Duration of Contract	09 Months including 02 months of trial period (07 Months for work completion up to handing over& 02 months for trial period) from the date of letter of intent /P.O. whichever is earlier.
4	Last date of receipt of the tender	Upto 13:15 hrs on 28.04.2017
5	Date of opening of Techno-commercial BID	14:00 hrs. on <b>28.04.2017</b>
6	Address for submitting the Tender	(as on Page# 2 of 105)
7	Earnest Money Deposit * (EMD)	Rs 3.80.000/- (Rupees three lakhs eighty thousand only)
8	Cost of Tender	Rs1000/-plus VAT/GST 15 % (as applicable) = Total Rs.1150/- (payable in cash at BHEL cash office or through a Demand Draft in favor of BHEL, Jhansi along with technical bid, in case the documents downloaded from website)
9	Validity of Offer	120 Days from the date of tender opening
10	Security Deposit	As per Annexure G (P-79-80)

\* The EMD may be accepted only in the following forms:

- Cash deposit as permissible under the extant Income Tax Act (before tender opening)
- Electronic Fund Transfer credited in BHEL account (before tender opening)
- Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer)
- Bank details required as given below

**Bank Name:- SBI**

**A/c No. :- 10670828866**

**IFSC Code:- SBIN0003807**

**A/c Holder Name:- BHARAT HEAVY ELECTRICALS LIMITED**

### **IMPORTANT**

- The bidder may physically visit the work place before quoting their rates.**
- For relevant details please visit our website "www.bhel.com" & [www.bheljhs.co.in](http://www.bheljhs.co.in)**

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## PROJECT INFORMATION

Name of the Owner	:	BHARAT HEAVY ELECTRICAL LIMITED
Address	:	BHEL, JHANSI, UP, INDIA
New Installation	:	12 MTPH COAL FIRED BOILER
Nearest Railway station	:	JHANSI, UP
Nearest Road	:	JHANSI- LALITPUR ROAD (NH -26)
Nearest City	:	JHANSI (18 Km. from Jhansi Rly. Station)
Nearest Airport	:	GWALIOR AIRPORT (100 km)
Highest Temperature	:	47.1 degree Celsius
Lowest Temperature	:	1.9 degree Celsius
Relative Humidity	:	87% maximum 22% minimum
Seismic Zone	:	II

### Parameters for Electrical Appliances to suit:

**4 WIRE, 415 Volt (Line-Line) , 3 Phase A.C Supply.**

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# Annexure B

## WORK SPECIFICATION

### INDEX

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SECTION-2	Scope of Works & Activities Envisaged.	21 to 48
SECTION-3	Total Scope at a Glance (Appendices)	49 to 55
SECTION-4	Weight Schedule (Appendices)	56 to 66

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Annexure B/Sec-1

## SECTION- 1

### COMMON CONDITIONS OF CONTRACT (Contract Description)

#### 1.1 SCOPE OF CONTRACT

- 1.1.1 The Intent of this specification is to provide **MATERIAL HANDLING ERECTION, TESTING, COMMISSIONING, TRIAL OPERATION & HANDING OVER OF NEW COAL FIRED BOILER PACKAGE** erection and commissioning services for execution of projects according to most modern and proven techniques and codes. The omission of specific reference to any method and equipment or material necessary for the proper and efficient services towards installation of the Plant shall not relieve the contractor of the responsibility of providing such services, facilities to complete the project or portion of project awarded to him. The quoted rate shall deem to be inclusive of all such contingencies.
- 1.1.2 The contractor shall carry out the work in accordance with instructions/ drawings/ specification/ standard practices provided by BHEL from time to time.
- 1.1.3 Provision of all types of labour, Supervisors & Engineers, watch and ward as required, tools and tackles as required, consumables as required under various clauses of tender specification for handling transportation, erection, testing and commissioning.
- 1.1.4 Proper out-turn as per BHEL plan and commitment.
- 1.1.5 Completion of work as per schedule indicated.
- 1.1.6 Good quality and accurate workmanship for proper performance of equipment / systems.
- 1.1.7 Preservation of all components at all stages of pre-assembly/erection/ till unit is handed over.(Ref: Annex-B/Sec-1/Clause No 1.10)

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Annexure B/Sec-1

## 1.2 FACILITIES TO BE PROVIDED BY BHEL /SITE STABLISHMENT

### 1.2.1 OPEN SPACE:

Only open space for building of temporary office shed and contractor's stores shed(s) will be provided free of charges.

### 1.2.2 ELECTRICITY:

For construction purpose, electrical point of 415 V-3 Phase Supply, duly metered will be provided on chargeable (electricity charges will be deducted from monthly running bill at actual charges) basis at one single point nearer to the site. The contractor shall arrange further distribution of electricity in Stores /Shed and for construction as per his requirement at his cost.

### 1.2.3 WATER:

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

### 1.2.4 TOOLS & TACKLES:

All the tools, tackles and instruments required for the complete erection, commissioning and testing of components and assemblies ,shall be arranged by the contractor. The quoted rate shall be inclusive of such requirements.

### 1.2.5 CONSUMABLES :

Only TIG welding wire for pressure part welding will be provided by BHEL free of cost. All other electrodes, gases, thinner, paint, nitrogen gas, hardware and consumables are to be arranged by the contractor at his cost. Any other consumables (than those mentioned) if required, shall be arranged by the contractor at his cost.

### 1.2.6 COVERED SHED:

Covered shed (Approx.180 Sq. meter) & office (Approx.10 X10 feet) will be provided by BHEL for execution & monitoring of site work. No charges shall be recovered for providing this facility

### 1.2.7 AIR SUPPLY

- (i) All requirement of compressed air during the erection stage/ construction of the boiler shall be arranged by the contractor through appropriate means.
- (ii) M/s BHEL will provide the compressed air only for pneumatic items of the boiler during testing / Commissioning / operation .

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Annexure B/Sec-1

## 1.3 WORK TO BE DONE BY THE CONTRACTOR AT HIS COST.

In addition to those covered at Annex. B/SEC. I /Clause 1.2 the following works shall be carried out by the contractor at his cost:-

### 1.3.1 DISTRIBUTION OF ELECTRICITY:

Distribution of electrical power from the given single central common point to the required places shall be the responsibility of the tenderer / contractor. Distribution should be in line with safety rules laid down by electrical authority of the State / BHEL with appropriate statutory requirements.

### 1.3.2 ENSURING ILLUMINATION FOR SITE WORK:

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

### 1.3.3 REMOVAL OF DEBRIS FOR SITE CLOSURE:

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

## 1.4 PROCUREMENT OF GASES/PAINTS/CONSUMABLES:

1.4.1 All required gases like Oxygen/ acetylene/ LPG/ Argon/ Nitrogen, required for work shall be arranged by the Contractor at his cost. It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of these gases. Non-availability of gases cannot be considered as reasons for not attaining the required progress.

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

1.4.3 The contractor shall ensure availability of all gases through timely planning & housekeeping of all inflammable cylinder with proper security etc.

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

1.4.5 All types of paints, thinners, chemicals, accessories for painting and chemical cleaning etc. shall be provided by contractor at his cost.

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## 1.5 PROCUREMENT OF ELECTRODES:

- 1.5.1 On receipt of the electrodes procured by the contractor at site, it shall be got inspected and approved by BHEL. The contractor shall inform BHEL the details regarding type of electrodes, batch number and date of expiry etc.
- 1.5.2 The utilization of the TIG welding wires shall be duly accounted for exercising maximum care and ensuring economical usage for minimum wastage. If during erection, it is found that the consumption of filler wire is more than the actual requirement by improper usage, the cost for the additional quantity so consumed shall be recovered from the contractor.
- 1.5.3 All low hydrogen electrodes shall be baked / dried in the electrode drying oven to the temperature and period specified by the relevant drawing/ documents before they are used in erection work and each welder should be provided with one portable electrode drying oven at the work spot. Electrode drying oven and portable drying ovens shall be provided by contractor at his cost.
- 1.5.4 BHEL reserves the right to reject the use of any electrodes at any stage if found defective because of bad quality, improper storage, date of expiry, unapproved type of electrodes etc. It shall be the responsibility of the contractor to replace at his cost without loss of time.

## 1.6 ARRANGING TOOLS & PLANTS (T&P) FOR EXECUTION OF WORK:

- 1.6.1 T & P as per Annex B, Section -3 Appendix ó III & other equipmentø to suit the site condition / rate of progress / nature of work shall be arranged by contractor at his own cost and shall be got approved by BHEL Engineer before they are actually put to use. Relevant documents should be submitted before their usage.
- 1.6.2 During the execution of the work it shall be contractorø responsibility to arrange all necessary manpower / hand tools / illumination / supports / consumables, etc. and crane to suit the erection condition. The quoted rate shall include such services.

## 1.7 DEPLOYMENT OF MAN POWER:

- 1.7.1 The Contractor shall deploy experienced Engineers, Supervisors all the skilled workmen like High Pressure Welders (gas, TIG and arc ) Carbon, alloy steel welders, Gas cutters, electricians, C&I Technician, Riggers, Slings, Erectors, carpenters, fitters etc. in addition to other skilled, semi-skilled and unskilled workmen required for all the works of handling and transportation from site storage to erection site, transportation, erection, testing and commissioning contemplated under this specification. Only fully trained /experienced and competent men with previous experience of the job shall be employed. The team of contractor should work in proper manner and in coordination with BHEL staff.

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- 1.7.2 The contractor should nominate a authorized site in charge for overall monitoring of the project and coordination with different agencies & BHEL. The name of the overall In charge shall be informed to BHEL before start of work.
- 1.7.3 The Contractor shall also furnish periodic labour report showing by classification the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineer. The contractor shall also give a summary report at the end of the month and plan of deployment for the subsequent month as per the plan of activities as required by BHEL, to meet the overall contract requirement.
- 1.7.4 The work shall be executed under the usual conditions of an established Factory. The bidder and his personnel shall co-operate with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 1.7.5 The contractor's supervisory staff shall execute the work in the most substantial and workman like manner in the stipulated time. Accuracy of work, good workmanship and aesthetic finish are essential part of this contract. The contractor shall be responsible to ensure that assembly and workmanship conform to the dimensions and tolerances given in the drawings / instructions given by BHEL Engineers from time to time. Wherever finish or tolerances are not specified in drawings/documents, BHEL Engineer's instructions are to be taken as final.
- 1.7.6 It is the responsibility of the bidder to engage his workmen in shifts or on overtime basis for achieving the target set by BHEL and also during erection, commissioning and testing period. The contractor's quoted rate shall include all these contingencies.
- 1.7.7 If the contractor or his workmen or employees shall break, deface, damage or destroy any part of a building, road, structure, fence, enclosure, water pipes, cables, drains, electric or telephone posts or wires, trees or any other property or to any part of the erected components etc. The contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL's decision is final) from any money due to the contractor.

## 1.8 INTERFACING/CO-ORDINATION FOR CIVIL & FOUNDATION WORK:

- 1.8.1 Column foundation and foundation of other plants and necessary civil works shall be provided by BHEL. The dimension of the foundation and anchor bolt pits shall be checked by the contractor for their correctness as per drawings. Further, top elevation of foundations shall be checked with respect to bench mark etc. All adjustments of foundations surfaces, enlarging the pockets in foundations etc. as may be required for the erection of equipment's plants shall be carried out by the contractor.

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**Annexure B/Sec-1**

1.8.2 While pockets for placement of foundation bolts will be provided by BHEL, the contractor at his cost shall arrange for grouting of foundation bolt holes of column and equipment as specified in the drawings / specification or as advised by BHEL after preparing the foundation top surface for grouting. The contractor at his cost shall arrange all materials (Ordinary cement, special cement like combextra, GP1 / shrinkomp or its equivalent, special chemicals, etc) for such works.

1.8.3 The contractor at his cost shall arrange for grouting of anchor points of T & P brought by him and also grouting of winches or any other supports required for T & Ps. Necessary grout materials are to be arranged by the contractor at his cost.

## **1.9 ENSURING PROPER MATERIAL HANDLING,SITE STORAGE AND OTHER RESPONSIBILITIES**

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

1.9.2 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.

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

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

1.9.5 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.

1.9.6 All pipe and tube ends shall be covered with plastic caps or will be closed with wooden plugs as the case may be.

1.9.7 The contractor shall take delivery of the components and equipment's and special consumables from the storage area after getting the approval of the BHEL Engineer on

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## Annexure B/Sec-1

standard indent forms to be specified by BHEL. At periodic/intervals of work, complete and detailed account of the equipment so erected and electrodes used shall be submitted to the BHEL Engineer.

- 1.9.8 The contractor shall submit monthly plan for erection and the same will be mutually agreed upon after discussion. The contractor shall arrange for Engineers, Supervisors and labour force and tools and plants and consumables to suit the above plan and execute the work accordingly.
- 1.9.9 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.
- 1.9.10 Once material is handed over to contractor, the contractor shall ensure watch and ward of the same.
- 1.9.11 All equipmentø shall be handled very carefully to prevent any damage or loss. No bare wire ropes, slings etc. shall be used for unloading and / or handling of the equipmentø. The equipmentø from the storage yard shall be moved to the actual site of erection / location at the appropriate time.
- 1.9.12 All the necessary certificates and licenses required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.
- 1.9.13 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. Wherever necessary suitable temporary fencing and lighting shall have to be provided by the contractor as a safety measure against accident and damage of property of BHEL. Suitable caution notices shall be displayed where access to any part may be deemed to be unsafe and hazardous.
- 1.9.14 The contractor shall be responsible for taking all safety precautions during the construction and keeping the site safe at all times. In case work is temporarily suspended he shall protect all construction materials, equipmentø and facilities from causing damage to existing property interfering with the operations of the station when it goes into services. The contractor shall comply with all applicable provisions of the safety regulations clean-up program and other precautionary measures which the BHEL has in effect at the site.
- 1.9.15 Sometimes it may become necessary for the contractor to handle certain unrequired components in order to take out the required materials. The contractor has to take this contingency also into account. No extra payment is payable for such contingencies.

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1.10

## PRESERVATION OF COMPONENTS

- 1.10.1 It shall be the responsibility of the contractor to apply touch up painting on all equipment before erection. It shall be contractor's responsibility to arrange for required labour, brush and other consumables like cotton waste, cloth etc. for carrying out preservative painting. The quoted rate shall be inclusive of above work.
- 1.10.2 The contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts, then and there for their protection.
- 1.10.3 Any failure on the part of contractor to carry out work according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from contractor.
- 1.10.4 Contractor shall ensure speedy alignment and welding of all Equipment erected by him after placement. Also all alignments, Welding, NDT Tests required for stage Inspection shall be completed as per Quality Assurance Procedures, based on QAP (Ref: Annex-B/Sec-1/clause 1.13)  
All the Quality Assurance procedures linked to QAP, have to be complied with, before effecting column erection, Ceiling Beams erection, drum lifting, further structural work, Hydraulic Test, Trial Run of Equipment, Pre-commissioning, Post commissioning and any other tests required to for completing erection and commissioning.

## 1.11.0 INTERFACING/CO-ORDINATION FOR DRAWINGS AND DOCUMENTS

- 1.11.1 The detailed drawing /specification will be made available by BHEL to the contractor during execution of work at site.
- 1.11.2 One set of necessary drawings to carry out the erection work will be furnished to the contractor by BHEL on loan which shall be returned to BHEL at site after completion of work. Contractor's personnel shall take care of these documents given to them.
- 1.11.3 Should any error or ambiguity be discovered in the specification, or information, the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
- 1.11.4 Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimensions/details without specific approval of BHEL.

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## 1.12 ENSURING QUALITY OF SITE WORK

Contractors shall ensure that the Quality is maintained in all the works connected with this contract at all stages as per the requirement of BHEL. Contractor shall ensure that all inspection, Measuring and Testing equipment that are used, whether owned by the contractor or used on loan, are calibrated by the authorized agencies and the valid calibration certificate will be available with them for verification by BHEL. A list of such instruments possessed by contractor at site with its calibration status is to be submitted to BHEL Engineer for control.

The bidder should depute a qualified QAE (Quality Assurance Engineer) to ensure compliance of quality till the completion of the project.

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

## 1.13 ADOPTION OF QUALITY CONTROL PRACTICES :

1.13.1 Various inspection/quality control/ quality assurance procedure/methods at various stages of erection and commissioning shall be in line with codes & practices mentioned in drawing/documents, given by BHEL, as well as guideline of IBR.1950 Reg.04.

1.13.2 The sample QAP is given in in line of note on page No.03 as a separate document file with NIT. The same may be mutually discussed & finalized within one week of start of the work so that these QAPs can be adopted for execution of work under this contract. The final approving authority shall be BHEL.

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

1.13.4 Daily log Book should be maintained by supervisor/Engineer of contractor on the job in Duplicate (One for BHEL and one for Contractor) for detailing and incorporating Alignment / clearance / centering / Levelling Readings and Inspection details as per site QAP.

1.13.5 All the Important Measurements shall be recorded in the Daily Log Book with sketches based on BHEL Drawings indicating Readings / Measurements actually Taken and Signed by BHEL & Contractor Representatives in line with relevant QAP.

1.13.6 Approval Given by BHEL for welding, results tests etc. shall also be recorded in the log book in line with relevant QAP.

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- 1.13.7 Welding Details like number of joints, welder's Name, Date of welding, Details of Repair, Heat Treatment, Etc. will be documented in welding Logs as per BHEL Engineer's Instructions in line with site QAP.
- 1.13.8 Heat Treatment details of HP Welds indicating minimum Temperature Recorded, Heating Rate, Cooling Rate, soaking Time, Etc., shall also be Recorded and documented by contractor as per BHEL Engineer's Instructions/site QAP. High pressure Welder's performance Record shall be furnished every month as per site QAP.
- 1.13.9 All the Electrical/Technical Measuring and Testing Instruments/Gauges, Feeler Gauges, Height Gauges, Dial Gauges, Micrometers, Levels, Spirit Levels, Surface plates, straight Edges, Vernier calipers and all measuring instruments shall be provided by the contractor for checking, leveling, Alignment, Centering etc. of Erected Equipment's at various stages.
- 1.13.10 Total Quality is the Watch & Ward of the work and standards, Procedures laid down by BHEL. Instructions as per BHEL Drawings and Quality / Standards site QAP shall be followed by bidder's quality Assurance Engineer.
- 1.13.11 The Welders performance will be reviewed from time to time as per the BHEL / IBR Standards and any welders not performing to the Standards set by BHEL / IBR Standards will be removed from working, contractor shall arrange for the alternate welders immediately.

## 1.14 INTERFACE /CO-ORDINATION FOR STAGE INSPECTION

- 1.14.1 Apart from Day-to-Day Inspection by BHEL Engineers at the site, Stage Inspection of Equipment under Erection and commissioning at various stages can be made by inspectors from other manufacturing units of BHEL.
- 1.14.2 Any modifications suggested by BHEL / visiting inspectors from BHEL's sister units shall be carried out (after the inspection) by the contractor without any extra cost.
- 1.14.3 Any rectifications towards repairs of defective work found out during stage Inspection shall be done free of cost, by the contractor.

## 1.15 LIASIONING FOR STATUTORY APPROVALS

- 1.15.1 The scope includes obtaining the approvals from the statutory authorities (Like Boiler Inspector, Pollution board and labour officers etc.). This includes arranging for inspection visits in line with BHEL Engineer's instructions and following up the matter with them to obtain required statutory approval/certificate. The final requirement towards this will be to have a certificate from the directorate of Boiler,U.P. to operate & run the boiler once

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it is commissioned. The vendor will have to organize submission of documents to the boiler directorate and to obtain clearance as per IBR at various stages of E&C, which finally culminates to issuance of certificate to run the Boiler. All these works towards liaisoining are to be done by the contractor within the rates quoted by him in the bid.

- 1.15.2 All fees connected with testing his welders / men / workers and testing, inspection calibrating of his instruments and equipmentø, shall be paid by the contractor at his cost. It shall be the contractorø responsibility to obtain approval of statutory authorities, wherever applicable, for conducting any work which comes under the purview of these authorities. Any cost arising out of this shall be born by the contractor. In case these inspections have to be repeated due to default / fault of the contractor and fees have to be paid again, the contractor shall have to bear the additional charges.

## 1.16 COFORMANCE TO SAFETY AND ENVIRONMENT RELATED OBLIGATIONS

### 1.16.1 Rules to be observed, (while inside BHEL premises):

- i) BHEL is a no-smoking zone. This rule shall be observed by all workmen at all times while inside BHEL.
- ii) Workers shall not indulge in gambling or consumption of liquor while inside BHEL.
- iii) No workmen shall enter BHEL in inebriated condition.
- iv) Contractor shall not post any worker at a workplace without instructing him of all Safety requirements, Technical requirements and all rules of proper conduct in line with Factories Act and BHEL Rules and regulations.

### 1.16.2 SAFETY:

- i) No workman shall be below the age of 18 years on the date of starting work in BHEL. Neither shall any contract worker be above 60 years of age during the entire period of contract.
- ii) For any skilled / semi-skilled work, notarized copies of trade certificate such as ITI pass, Diploma, or degree shall be furnished.
- iii) Electricians shall furnish their valid license from Chief Electrical Inspector, State Government. Or Equivalent Certificate of experience as per IEE Rules.
- iv) For Crane operators, Experience certificate stating specific skill in crane operation such as EOT crane, mobile crane etc as may be relevant, names of enterprises where cranes have been operated in the past , period (from and to date) shall be furnished before starting of work in BHEL.
- v) Contractor shall submit proof of crane operator having undergone training for operating the crane. Or that he is sufficiently/adequately skilled and/or experienced in operation of the said crane. This has to be in accordance of Factories Act Rule 62(3) which states òNo person under 18 years of age and no person who is not sufficiently competent AND reliable shall be employed as driver (**meaning : operator**) of a lifting machine (**meaning : crane**) whether driven by mechanical power (**meaning Fork lift truck, mobile crane**) or otherwise (**meaning : JIB crane, Mono-rail/Goliath/semi-goliath crane, EOT Crane, Hoist, Lift** ) , or to give signals to driver ( **meaning : slinger**)

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- vi) For slingers employed by contractor, the minimum educational qualification shall be 10<sup>th</sup> pass .
- vii) List of all Personal Protective Equipment which shall be provided by Contractor must be furnished at the time of quoting for tender. In the event where, after award of work order, it is found that Contractor's workmen are working without the required PPEs, BHEL reserves the right to terminate the contract OR to provide the PPEs at the cost of Contractor. The expenses so incurred shall be deducted from the running/final bills of the contractor.
- viii) At the time of starting work, the contractor shall submit all PPEs through entries in BHEL Material Gate for such items as Helmets, Scaffolding, Safety Shoes, Face Shield, Respirators, Safety Belts, Dungarees, Welding shields etc as relevant and mandatory for adequate safety of personnel. For other consumable nature of PPEs also, such as masks, ear-buds, muffs gloves, inspection at workplace by BHEL personnel shall confirm whether workmen are provided the PPEs and are using the same.
- ix) For items which are relevant with safe performance at workplace, on first day of commencement of work, the contractor shall get the signed endorsement from HOD concerned of the department where work is to be started, that workmen have been issued the relevant PPEs by contractor and that the same are being used.
- x) The Signed endorsement of this sheet shall be kept in record at the division at the time of commencement of work.
- xi) Failing to furnish this endorsed copy will result in objection for processing the running / final bill, whichever is put up first, for clearing.

## 1.16.3 **ENVIRONMENT** (SWACCH BHARAT)

- i) For any Chemicals, Paints or oils etc that the contractor may be required to be bring inside factory, the empty drums, containers etc shall be taken out through material gate under intimation to HOD concerned of the department where work is carried out. OR will be deposited at Scrap Management through concerned department, against credit note.
- ii) No oil, effluent or chemical etc shall be drained in the drains or water pools inside factory.

## 1.16.4 **HEALTH**

- i) Medical certificate of fitness, of current date, from local Registered Medical practitioner (RMP) qualified as per Indian medical degree act 1916 or in the schedule to the Indian medical council Act 1956 and pass the certificate(Rule 63-J of U.P factories rules-1950) in respect of all workmen shall be furnished by contractor before starting work in BHEL.
- ii) For crane operators Medical certificate of fitness with special fitness of eye sight & color-vision from Registered medical practitioner (RMP) shall be furnished before start of work.

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- iii) If and when directed by BHEL, all hired/on-contract crane operators shall be got verified by the contractor from BHEL Safety Department before deployment at site , and from time to time as required in accordance with directive of BHEL.
- iv) As a general rule, no person above age 60 years shall be employed for contract work. However, if a specific skill set necessitates employing of a person above 60 years of age, the contractor shall specify this condition at the time of quoting for a tender. And BHEL reserves the right to allow / permit such a person to work inside BHEL. The necessary condition for this shall be that the contractor shall furnish a certificate (of current date) of Physical Fitness from a registered Medical doctor mentioning the age of the person to be employed. However, this may be allowed only as an exception due to skill-requirement, and not as a general practice. The permission for such exception may be granted after due consideration by an official not lower than BHEL AGM (HOD).
- v) For all such work requiring working at heights (more than 2 meters) such as chimneys, rooftops, columns of blocks, pallets etc, special medical certificate of fitness from Registered Medical practitioner (RMP) doctor shall be furnished showing the person is free from such medical conditions as vertigo, epilepsy etc. Specific written permit shall be obtained from BHEL before undertaking such work.
- vi) The contractor shall follow the Permit system for all dangerous operations as governed under Factories Act and State Rules.

## 1.16.5 **ROAD SAFETY:**

- i) All vehicles brought inside the factory by contractor, shall have valid registration. The drivers, or operators as the case may be, shall have valid licenses. The vehicles shall be Road-worthy and Load-worthy as applicable.
- ii) Operation of Battery operated trucks (BOT) and Fork-lift trucks inside factory shall be done only by workmen who hold valid licenses for light commercial vehicles.
- iii) Maintaining road safety rules inside factory at all times is the prime responsibility of contractor's workmen. Any violation of the same shall be deemed a punishable offence in accordance with road safety rules. Any damage to the property of BHEL by any act of carelessness on road/mishap, shall be recoverable from the contractor.

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## 1.16.6 GENERAL SAFETY ASPECTS:

All Contractor's workmen shall abide by the rules & regulations of BHEL with respect to Safety, Health and Environment while inside BHEL factory:

- i) BHEL's HSE policy shall be honored at all times.
- ii) PPEs shall be used as required at the work-place
- iii) No unsafe act shall be indulged-in, by the workmen.
- iv) Special written permission for working at heights shall be obtained by contractor
- v) Medical clearances as required for work shall be submitted before start of work.
- vi) While working at any machine tool area/dangerous operation, BOTs, Cranes etc mobile phone usage is not allowed.
- vii) No loose clothing's like shawls, mufflers, dupatta etc should be worn Near Machine tools. Clothes shall be reasonably tight fitting and preclude any mishap occurrence.
- viii) Smoking & consumption of intoxicating substances is prohibited at all times inside factory.
- ix) No make-shift arrangements shall be made for any engineering shop-floor work .
- x) Compressed air shall not be used for area or personal cleaning/de-dusting.
- xi) All stipulations of the Factories Act shall be honored and observed by contractor's workmen.

1.16.7 The following requirements are specific to the Skills, Trades and Situations as per Factories Act 1948. These have to be fulfilled by the contractor for allocating his worker(s) inside BHEL for any work awarded to him, for workers working at/on :

(All Factories Act & UP Rules to be fulfilled by contractor for Age, Skill, Training and Instruction for any of the below mentioned equipment, Machinery, Process)

- |       |  |
|-------|--|
| I.    | Revolving Machinery                                  |
| II.   | Pressure Vessels                                     |
| III.  | Lifting Devices                                      |
| IV.   | Power Presses  |
| V.    | Work at heights                                      |
| VI.   | Any confined space                                   |
| VII.  | Electrical Equipment                                 |
| VIII. | In the vicinity of other hazardous process/machinery |

**To be signed by contractor**

(as proof of having read & agreed for compliance)

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## SECTION – 2

### SCOPE OF WORK & ACTIVITIES ENVISAGED (Work Description)

#### 2.1 SCOPE OF WORK

2.1.1 BHEL Jhansi is in the process of procuring a new 12 MTPH Boiler for its captive use & accordingly desire to award the work of material handling Erection, Testing, Commissioning & handing over of all items covered in the new Boiler package to be supplied by various BHEL units (Trichy, Ranipet Hyderabad & EDN.EPD).

2.1.2 The scope of work under this tender consists of material handling Erection, Testing Commissioning & handing over of the new Boiler package including integration (Mechanical, electrical, control etc.), electrification, Painting, All required liaisoning work for erection and operation of new boiler. The Boiler package mainly consists of

**12MTPH Coal Fired BFB Boiler** (complete with fire chambers, boiler drum, water panels, Flue gas exhaust port, feed water inlet port, output steam extract port, fuel input port, painting, liaisoning (for erection & operation of new boiler ) air/draught input ports for induced (ID Fan) and forced (FD Fans) draught) etc.

**Coal Handling System** (Coal Crusher, Coal Bunker, Coal feeding pipes/ducts, Primary Air Fans (PA) etc.),

**Feed Water Inlet System** (Feed Water Tank, DM Plant, Feed Water Pumps, DE aerator, Pipe Lines to link water input to the main Boiler etc.),

**Ash Handling System** (Ash Silo, Ash Collection at Boiler & Collecting Hoppers of ESP, ash carriers for disposal etc.),

**Flue/Stack Handling System** (Pipes/Ducts to carry Flue gases/stack from exhaust port of main Boiler, Flue gas/stack manifold with pipe/duct linkage to inlet of ESP and FD Fans, ESP Hall complete with electrode & other accessories, Pipe/duct linkages between outlet of ESP to Chimney & ID Fan, Chimney),

**Steam Delivery System (Collection** of steam from steam outlet port of main Boiler, Steam Outlet Valve, pipe/duct linkage to the steam delivery network of the factory).

Therefore, the scope of this tender will involve material handling along with E.T.C. (Erection, Testing, Commissioning) of all items as well as integration (Covering all aspects like, mechanical, electrical & Control and Instrumentation) of all system Components / modules of the Boiler package described above in such a way as to ensure proper functioning of the total system as a whole to achieve the desired objectives.

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2.1.3 The scope of the work as described above will comprise of, but will not get limited, to the following activities envisaged below:

- i) Taking delivery of materials to be erected by contractor from factory store./temporary storage loading & transportation of these materials from place of store to erection site. (Approx. distance of stores from erection site is 200 Mtr.)
- ii). Preservation, safekeeping, watch and ward of the materials collected.
- iii). Checking, dressing, chipping, leveling & grouting of foundations.
- iv). Pre-assembly, erection, alignment of structures, pressure parts, non-pressure parts, rotating machines, ESP, and other items described in clause 2.1.2. with laying, trimming, joining of the various integral pipes/ducts, earthing strips, cables, conduits, signal wires pneumatic lines, C&I linkages with reference to the total Boiler Package described in clause 2.1.2. Insulation of main Boiler & associated pipes/ducts, as per requirement shall also be taken care of.
- v). Welding, heat treatment, radiography, UT and other non-destructive tests wherever required
- vi). Hydraulic test, air leak test, clean airflow test and other pre commissioning tests.
- vii). Carrying out of Special processes as per requirement of drawing / documents
- viii). Insulation, touchup and finish painting including supply of paints
- ix). Chemical cleaning, alkali boil out, acid cleaning and passivation PG (Product Group) test as per the scope given in the tender.
- x). Steam blowing and safety valve floating including erection and dismantling of all temporary piping, valves, pumps, tanks etc. required for above operations and other commissioning activities including post commissioning operations and stabilization of the unit.
- xi). Electrical Supply up to boiler. Total wiring & integration of the boiler with other system components of the package by activities, involving cable laying & relevant wiring for
  - (i) Control & instrumentation
  - (ii) General wiring for lamps, alarms, fans at identified locations
  - iii) Electrical earthings & Lighting arresters as per requirement
- xii). Unit trial operation, resolving any deficiencies observed and handing over of Boiler, ESP, Rotating Machines, balance of plant and auxiliaries at location for New 12 MTPH Boiler, BHEL Jhansi.

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2.1.4 The work to be carried out at quoted/accepted rates by the contractor under the scope of these specifications covers the complete work of handling, loading and transporting of materials from project stores sheds / storage yards to site of erection or pre-assembly yard and unloading at pre-assembly area/erection site, checking, cleaning chipping and leveling of foundations, providing packers and shims/pre-assembling of equipments at the pre-assembly yard, inspection, minor rectification, preservation, erection, leveling, grouting and other adjustments, cutting, edge/surface preparation, welding, grinding, radiography, LPI/MPI/UTI testing wherever needed, heat treatment, carrying out air tightness test by soap solution / kerosene, hydraulic test, steam /air blowing light up, chemical cleaning, passivation, steam blowing and safety valve floating including inter connection all the termination points, erection and dismantling of all temporary piping, valves, pumps, tanks etc., required for the above operations, all pre-commissioning tests and trial runs of the CFBC boiler & Aux. Bunker Structure & Bunker and supply and application of final painting covered under the tender specifications and providing adequate assistance during entire commissioning and unit trial operations and final painting of the new 12 MTPH Boiler package at Boiler House of BHEL, Jhansi Plant.

2.1.5 The brief list of equipment to be erected, but not limited to

- i) Circulating Fluidized Bed Combustion Boiler with water circulation system, SH/RH system with complete supporting structure & platforms, Boiler mountings, Trim piping etc., Roof sheeting, cladding etc.,
- ii) Fluidized Bed Heat Exchangers
- iii) Interconnecting platform & Lift structures
- iv) Fuel Handling System, having coal crusher Bunker Bay Structures & Bunkers (Lignite, Lime Stone & Bed Materials), feeders, conveyors etc.
- v) Feed Water Input system, having DM Plant, Feed Water pumps, Feed Water Tank etc.
- vi) De aerator.
- vii) ID/FD/PA Fans
- viii) Air Pre Heaters (RAPH & TUBLER)
- ix) Flue Handling System having ESP, Air & Flue Gas system (Ducts, dampers, gates etc.,) up to Chimney.
- x) Bed ash System
- xi) Soot Blowing System
- xii) Chemical dosing system
- xiii) Equipment Handling System
- xiv) Pressure Parts attachments

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- 2.1.6 The work shall conform to dimensions and tolerances given in various drawings and Manuals provided by BHEL. If any portion of work is found to be defective in workmanship not conforming to drawings or other stipulations, the contractor shall dismantle and repeat the work duly replacing the defective materials at his cost.
- 2.1.7 Contractor shall submit a copy of license to undertake construction of boilers issued by Boiler inspectorate before commencement of Pressure Parts Erection.
- 2.1.8 Contractor shall ensure proper record keeping for erection / material planning by deployment of suitable staff and resources.

## **2.2 FOUNDATION DRESSING AND GROUTING**

- 2.2.1 It shall be contractor's responsibility to check the various equipment foundations for their correctness with respect to level, orientation, dimensions etc., and ascertained dimensions shall be measured and submitted to BHEL for approval before erection. Also minor chipping, dressing of foundations upto 30 mm for obtaining proper surface for packer plates / shims, as may be required for the erection of the equipment / plants will have to be carried out by the contractor without extra cost.
- 2.2.2 The surface of foundations shall be dressed to bring the surface of the foundations to the required level and smoothness prior to placement of equipment/equipment's base on the foundations.
- 2.2.3 All equipment bases and structural steel bases and foundations pockets shall be grouted and finished as per grouting specifications unless otherwise recommended by the equipment manufacturers.
- 2.2.4 The concrete foundation, surfaces shall be properly prepared by chipping, as required to bring the top of such foundation to the required level to provide the necessary roughness for bondage and to ensure enough bearing strength. All litters and surface film shall be removed and cleaned and the packers placed with suitable mortar prior to erection of the equipment. The contractor shall ensure perfect matching of the packer plates with foundations by dressing the foundation and between the packer plates and base plates of structural columns to the satisfaction of BHEL Engineer.

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## 2.2.5 PROCEDURE FOR GROUTING

Contractor has to carry out the grouting as per the work instructions for grouting of equipment's columns etc available at site.

2.2.6 Any special materials required for grouting of foundation bolt holes of column and equipment as specified in the drawings / specification (Refer: Annex-B/Sec-1/1.8.2) are to be arranged by the contractor at his cost if required .

## 2.3 ERECTION

2.3.1 Details regarding boiler components, sub-assemblies, auxiliaries etc. to be erected, tested and commissioned under the scope of this tender is given in Section-4, Appendix- I to IX (Weight Schedule). The schedule of weights given in the appendices are only approximate and meant for giving a general idea to the tenderer, about the magnitude of the work involved. This should not be taken for billing or any other claims. All weights for such purposes will have to be taken from design documents only (Shipping list).

2.3.2 All the works such as cleaning, checking, leveling blue matching, aligning, assembling, temporary erection for alignment, opening, dismantling of certain equipment's for checking and cleaning, surface preparation, edge preparation, fabrication of tubes and pipes as per general engineering practices at site, cutting, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scrapping, shaping, fitting-up bolting, welding etc., as may be applicable in such operation and are necessary to complete the work satisfactorily. These are to be treated as incidental and the same shall be carried by the contractor as part of the work .

2.3.3 Normally the high pressure valves will have prepared edges for welding. But, if it becomes necessary the contractor shall prepare new edges or recondition the edges by grinding or chamfering to match the corresponding tubes and pipes.

2.3.4 All fittings like Tee pieces, weld neck flanges, reducers etc. shall be suitably matched with pipes for welding. The valves will have to be checked, cleaned or overhauled in full or in part before erection, after chemical cleaning and during commissioning.

2.3.5 Adjustments like removal of ovalites in pipes and opening or closing the fabricated bends of high pressure piping to suit the layout shall be considered part of work and the contractor is required to carry out such work free of cost, as per instructions of BHEL, which shall include specific heat treatment procedures etc.

2.3.6 Suspension / supports for piping, pressure parts, ducting etc. will be supplied in running lengths which shall be cut to suitable sizes and adjusted as required.

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- 2.3.7 Ducts / expansion pieces are dispatched to site in loose walls / plates and these are to be assembled at site before erection. All field connection duct / expansion pieces and dampers shall be seal welded on inside as well as outside.
- 2.3.8 Fabricated pipes are sent in standard length and will be cut to suit the site conditions and the layouts. Tubes or pipes wherever deemed to be convenient will be sent in running lengths with sufficient bends. Bends up to NB 65mm will have to be fabricated at site adopting specified heat treatment procedures, wherever required at no extra cost.
- 2.3.9 All welded joints should be painted with anti-corrosive paint, once radiography and stress relieving works are over. Periodic welding reports in the pro-forma suggested by BHEL should be submitted.
- 2.3.10 All the dampers, valves, lifting equipment $\phi$ s, power cylinders, etc. shall be serviced and lubricated to the satisfaction of BHEL Engineer before erecting the same and also during pre-commissioning. The bearings of dampers shall be properly cleaned, serviced and lubricated before commissioning at no extra cost Even after commissioning in the equipment $\phi$ s, if there are problems in the operation they have be attended to by the contractor during the tenure of the contract.
- 2.3.11 In case of any class of work for which there is no such specification as laid down in the contract such as blue matching, welding of stainless steel parts etc. the work shall be carried out in accordance with the instructions and requirements of the BHEL Engineer at the quoted rates only.
- 2.3.12 In the case of structural members / ducts, in certain cases, the raw material will be supplied in andom lengths and the contractor will have to make up the length / prepare the edges to suit the matching profiles, weld / bolt connects the joints at no extra cost. Normally, the machine profile will be cut out for the structural members but the contractor will have to carry out suitable alteration / adjustments at site, without any extra payment, in case it becomes necessary.
- 2.3.13 Attachment, welding of necessary instrumentation tapping points, thermocouple pads, root valves, condensing vessels, flow nozzles and control valves etc. both for regular measurements and performance testing to be provided on boiler / its auxiliaries or pipelines covered within scope of this tender, will also be the responsibility of the contractor and the same will be done as per the instructions of BHEL Engineer.

The erection and welding of all above items will be contractor $\phi$ s responsibility, even if:

- Product groups under which these items are released are not covered in the scope of this tender.
- Items are supplied by an agency other than BHEL.

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

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- 2.3.14 Spring suspensions / constant load hangers have to be pre assembled and adjusted for the required loading and erected as per the instructions, of BHEL Engineer. Any adjustments, removal of temporary arrestors / lockers, etc. have to be carried out as and when required.
- 2.3.15 All tubes and pipes shall be cleaned and blown with compressed air and shown to the Engineer before lifting. Sponge ball test shall be carried out for all tubes before erecting the same. Bigger size pipes should be cleaned with flexible wire brush, wherever necessary. After cleaning is over, the end caps shall be put back in tube openings till such time they are welded to other tubes. Required compressors and other materials shall be arranged by the contractor at his cost.
- 2.3.16 All attachment welding including those for insulation and refractory work coming on the the pressure parts shall have to be done by the contractor. Manual attachment welding on pressure parts shall be done by qualified and certified welders only.
- 2.3.17 It is the responsibility of the contractor to do the alignment checking, etc.,if necessary, repeatedly to satisfy BHEL Engineer with all the necessary tools and tackles manpower, etc., without any extra cost. The alignment will be complete only when jointly approved, by the BHEL Engineer. Also the contractor should ensure that the alignment is not disturbed afterwards.
- 2.3.18 Burner tilt mechanism will be checked for freeness, serviced and adjusted, if necessary to obtain optimum tilt before and after installation.
- 2.3.19 Fine fittings, boiler trim piping, and other small bore piping have to be routed according to site conditions and hence shall be done only in position. As such, layout of small bore piping be got approved from BHEL by the contractor. There is a possibility of slight change in routing the above pipelines when after completion, to suit the site conditions. The contractor should absorb this cost in his quoted rate.
- 2.3.20 Additional platforms for approaching different equipment as per the site requirement, which may not be indicated in drawings, shall be assembled and erected by contractor. The steel materials required for these works shall be supplied by BHEL free of cost and the contractor will have to install them to suit the requirement.
- 2.3.21 Complete penetration of water wall (Panel to panel) fins welding shall be achieved either by single side or double side welding. The decision of BHEL Engineer is final.
- 2.3.22 Work such as minor rectification of foundation bolts, reaming of holes, drilling of dowels, matching of bolts and nuts, making new dowel pin, etc. are covered in the scope of work.

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- 2.3.23 The column erection has to be done tier by tier with all bracings, beams to be erected, welded / bolted. Second tier of erection can be carried out only after grouting of column base. Sequence of erection shall be as per the instructions of site Engineers.
- 2.3.24 Certain extra lengths of various tubes/pipes, steel members and fabricated ducts are provided as erection allowance and the same have to be cut/adjusted to suit the site conditions and layouts or certain small lengths may have to be added for adjustments to suit the site conditions. For any mismatch while matching the joints in tubes, the cutting, adjusting, re-welding, addition spool pieces should be done by the contractor to match site conditions without any extra payment.
- 2.3.25 No temporary supports shall be welded on the pressure parts & piping. Welding of temporary supports, cleats, etc. on the boiler columns shall be avoided. In case of absolute necessity contractor shall take prior approval from BHEL engineer. Further, any cutting or alternation of member of the structure of platform or other equipment shall not be done without specific prior approval of BHEL Engineer.
- 2.3.26 Contractor shall engage separate gangs throughout the contract period, exclusively for proper housekeeping of the site. The contractor has to make necessary arrangements for collection and for bringing down the scrap from, all locations and taking them away from the erection areas to various locations as indicated by BHEL Engineer. The house keeping must be a routine and continuous activity.
- 2.3.27 All hangers, supports and anchors (including concreting or welding) shall be installed as per drawing to obtain reliable and complete pipe installation as per instructions of BHEL Engineer. Normally supports (components) are issued in running meters. Any additional supports as called for by BHEL Engineer shall be fabricated by the contractor and provided at no extra cost. However, the raw material required for fabrication of such supports shall be supplied by BHEL free of cost.
- 2.3.28 Some platform materials in Product Group (PG)- 36(Annex-B/Sec-4, App- IV) and Product Group (PG)- 48(Annex-B/Sec-4, App- IV) approach ladders, suspension materials etc. will be supplied in running meters. The contractor has to cut/join these materials to the required lengths and erect them within the quoted rates.
- 2.3.29 The materials for boiler roofing and side cladding etc. will be supplied by BHEL and contractor has to erect the same at the quoted / accepted tonnage rate.
- 2.3.30 It shall be the responsibility of the contractor to provide ladders on column for initial works till such time stairways are completed. For this the ladder should not be welded on the column and should be fabricated clamping type ladders. No temporary welding on any structural members is permitted except under special circumstances with the approval of BHEL.

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- 2.3.31 Assistance for calibrating / testing the power cylinders / valves, gauges, instruments etc. and setting to actuators coming under various groups shall be provided by contractor within the quoted rates.
- 2.3.32 Hanger rods are shown in the pressure parts arrangement drawing for boiler. Any cutting / welding and required heat treatment and necessary NDT of such hanger rods will be done by the contractor. The hangers for pressure parts will be tested for even distribution of load with the help of torque wrench.
- 2.3.33 Skin casing sheet for covering the boiler roof panels and other areas will be supplied as fabricated items. Any cutting and re-fabrication to suit the site conditions shall be carried out Within the quoted rates.
- 2.3.34 The contractor is strictly prohibited from using any of the boiler components like angles, channels, hand-rails for any temporary supporting or scaffolding work. In case of such misuse, a sum as determined by BHEL shall be recovered from contractor's bills. Also the contractor will be responsible for the safe custody and proper accounting of all materials in connection with the work. If the contractor has drawn materials in excess of design requirements, recoveries will be effected for such excess draws at the rate prescribed by manufacturing units.
- 2.3.35 For all the site routed piping under Product Group (PG)- 24 (Annex-B/Sec-4, App- II) as built drawings are to be submitted by the contractor on completion of work with the approval of Boiler Inspectorate (U.P).
- 2.3.36 The contractor has to remove the scrap/debris periodically as and when required and returned to BHEL stores or the location shown inside the plant area after segregation (Wooden, Ferrous, Non- Ferrous, inflammable etc.). The temporary structures / item welded either to structures or pressure parts are to be cut and removed without any damage to the equipment's erected.
- 2.3.37 Each ceiling girder will be supplied in maximum 3 Pieces and ceiling girders are to be pre-assembled at site and welding with NDT tests, if any are to be carried out, including 100% radiography, for the welded joints in ceiling girders. Relevant record to be submitted by contractor to BHEL

## 2.4 DRUM LIFTING

- 2.4.1 BHEL shall arrange to unload boiler drum in a convenient location as near as possible to Boiler Foundation. Transportation of the same to erection site for erection shall be within the scope of work of the contractor.

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- 2.4.2 For drum lifting BHEL prefer the use of hydraulically Operated Strand Jack method. However depending upon the size & dimension of the drum, if the contractor propose to adopt any alternative method then the same shall be got approved in advance by BHEL. For lifting by Strand Jack method the contractor shall have a necessary tie-up with established vendor who has executed similar job. The credential of the vendor & the procedure for lifting the drum shall be submitted to BHEL for review and approval within a month of award of work. Any additional arrangement/structures required for the same shall be arranged by the contractor with in the quoted rate.

## **Boiler Drum Tentative Weight = 6.5 MT (Approx.)**

- 2.4.3 HSFG bolts of boiler supporting structure are to be tightened, by turn of nut method / Torque Wrench, as per the instructions of BHEL Engineer. The bolted Joints should be jointly checked by the BHEL and contractor's personnel for the required tightness and retightened wherever necessary. The tightened bolts should be identified by colour paints. Facility for checking with calibrated torque wrenches shall also be provided by contractor.

## **2.5 AIR LEAK TEST**

- 2.5.1 Air leak test is to be conducted for the cold & hot secondary air ducts. Also gas tightness test is to be done for the flue gas ducts. In addition to this, leak tests are to be done for the furnace, skin casing works carried out in the boiler roof, furnace bottom etc. to the satisfaction of BHEL.

## **2.6 WELDING, HEAT TREATMENT & RADIOGRAPHY**

- 2.6.1 The pressure parts shall be erected in conformity with the provisions of Indian Boiler Regulations and as may be directed, as per other standard/specification in practice in BHEL. The method of welding (viz) ARC, TIG or other methods as indicated in the detailed drawing or as instructed by BHEL Engineer shall be followed. BHEL Engineer will have the option to change the method to suit site conditions. All the prepared/patched edges will have to be suitably protected to prevent rusting or foreign material ingress.
- 2.6.2 All Welders shall be tested and approved by BHEL Engineer before they are actually engaged on the work even though they may possess the requisite certificate. The welder identification code as approved by the BHEL Engineer shall be stamped by the welder on each joint done by them. The contractor will be responsible for the periodic renewal, retesting of the welders as demanded by BHEL statutory requirements. BHEL reserves the right to reject any welder without assigning any reason.

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- 2.6.3 BHEL Engineer is entitled to stop any contractor's welders from his work if his work is unsatisfactory for any technical reasons or there is a high percentage of rejection of joints welded by him in the opinion of BHEL Engineer, will adversely affect the quality of welding. Even though the welders has earlier passed the tests it does not relieve the contractor from his contractual obligations, to check the performance of the welders.
- 2.6.4 All welded joints shall be in line with documents/drawings of BHEL in general & in line with IBR 1950 Reg-4, in particular..
- 2.6.5 Pre-heating/post heating and stress relieving after welding are part of erection work and shall be performed by the contractor in accordance with relevant document/drawing/work requirement.
- 2.6.6 All butt joints of high pressure tubular system of boiler and piping shall be carried out by TIG root run and subsequent runs by Arc welding. Full TIG welding, wherever necessary shall be carried out within the quoted rates. For oil system piping root run of all the butt joints shall be carried out by TIG welding only.
- 2.6.7 The technical particulars, specifications and other general details of works shall be in accordance with BHEL welding, Heat treatment and NDE manuals or equivalent as decided by the BHEL Engineer.
- 2.6.8 Contractor shall carryout Radiography as per Welding Manual Booklet applicable as per IBR. However, percentage radiography shown in the respective drawings welding schedule/ welding manual shall be final and binding on the contractors.
- The field joints in the ceiling girders are to be radio graphed and preheating and post weld heat treatment to be done as per relevant documents.
- The percentage given in drawing/document are tentative, which may be increased depending upon the quality of joints at the discretion of BHEL.
- 2.6.9 All radiography report should be comprehensive & clear with necessary identification tags.
- 2.6.10 Penetrometer as per ASME/ISO, shall be used for all exposures in line with relevant document.
- 2.6.11 Pipe on the down stream side of the weld. for the multiple exposures on pipes, an overlap of about 25mm of film shall be provided.

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- 2.6.12 The contractor shall be fully equipped with radiography equipment, with required consumables and accessories. There must be a proper radiographic personnel with sufficient experiences and certified by BARC for field radiographic inspection. Further the contractor must follow strictly the safe rules laid down by the BARC, from time to time. Contractor's radiographers shall also be registered with BARC for future linkages.
- 2.6.13 Contractor shall provide all skilled, unskilled workmen required for the job, which will include Engineers, supervisors, operators, as required for timely and satisfactory execution of radiography work.
- 2.6.14 If the contractor does not carry out radiography work in time BHEL shall get the work done through some other agency at the risk and cost of the contractor.
- 2.6.15 All radiographs/radiograph reports shall be properly preserved.
- 2.6.16 Radiography of joints shall be so planned after welding that the same is done either on the same day or next day of the welding to assess the performance of high pressure welders. If the performance of the welder is unsatisfactory, he shall be replaced immediately.
- 2.6.17 The defects as pointed out by the BHEL Engineer shall be rectified immediately to the satisfaction of the Engineer and re-radiographed. The decision of the BHEL Engineer regarding acceptance or otherwise of the joint shall be final and binding on the contractor.
- 2.6.18 Wherever radiographs are not accepted on account of poor exposure, joints shall be re-radiographed and new test record shall be submitted for evaluation. Radiographs shall be taken again on joints after carrying out repairs. However, if the defect persists after the first repair as per radiograph, carrying out radiography shall be repeated till the joint is made acceptable. In case the joint is not repairable the same shall be cut, re-welded and re-radiographed at contractor's cost.
- 2.6.19 The contractor shall also be equipped for carrying out other NDT like liquid penetrant, Dye penetration (D.P. Test), Magnetic Particle Test (MPT), Ultra Sonic Test (UT) etc., as and when required as per relevant document, within the quoted rates.
- 2.6.20 For carrying out ultrasonic testing of welded joints of large size tubes and pipes, it will be necessary to prepare the surface by grinding to a smooth finish and contour as described by BHEL Engineer. The contractor's scope of work includes such preparation and no extra charges are payable for this.
- 2.6.21 It may also be necessary to adopt inter layer radiography / MPT / UT depending upon the site / technical requirements necessitating interruptions in continuity of the work and making necessary arrangements for carrying out the above work. The contractor shall take all this into account and quote the price inclusive of all such work and radiography.

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2.6.22 The welded surface irrespective of place of welding shall be cleaned of slag and painted at the center with primer paint to prevent corrosion at no extra cost towards this.

## 2.7 PROGRESS OF WORK

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

2.7.2 The progress reports shall indicate that progress achieved against planned with reasons indicating delays if any, shall also furnish in details the reasons for the same and shall give remedial action which the contractor intends to make good the slippage or lost time, so that further works can proceed as per the original programme and the slippage do not accumulate and affect the overall programme, in a format designed and approved by the BHEL site Engineer.

2.7.3 The contractor shall arrange weekly progress report & review meetings with the Engineer at site during which actual progress during the week vis-a-vis schedule program will be discussed for action to be taken for achieving targets. The contractor for discussions shall also present the programme for subsequent week. The contractor shall constantly update / revise his work programme to meet the overall requirement and suite the material availability.

2.7.4 The contractor shall follow the procedures in vigor with regards to security and must obtain the signature / permission of the security personnel of BHEL to bring any of their materials inside the site premises. Without the entry Gate Pass these materials will not be allowed to be taken outside.

2.7.5 The contractor shall maintain a record in the form as prescribed by BHEL for all operations carried out on each weld and maintain a record indicating the number of welds, the name of welders who welded the same, date and time of start and completion, preheat temperature, radiographic results, rejects if any, percentage of rejection, etc. and submit copies of the same to the BHEL Engineer as required.

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## 2.8 Testing, Pre-Commissioning, Commissioning & Post Commissioning

- 2.8.1 The contractor shall carry out the required test on the boiler and pipelines such as gas tightness test for ducts by kerosene / soap solution test or any other method, hydraulic test of boiler, with his own consumables, labour, scaffolding and other items, if any. Air leak test on pressure parts preliminary to hydraulic test by compressed air shall also be carried out to check and rectify the various leakages / defects etc. Required compressors shall be arranged by the contractor. Hydraulic test may be carried out in different stages, HT pumps necessary blanks / valves shall be arranged by contractor. The welding and removing it after hydro test, repeating the edges if required, it is to be done by the contractor within the quoted rates.
- 2.8.2 As far as the hydraulic test is concerned, the same shall be conducted to the satisfaction of BHEL and Boiler Inspectorate, if required at various stages. All the repairs arising out of the failures during testing shall be done by the contractor as part of the work at his cost.
- 2.8.3 The contractor has to provide manpower with requisite Tools & Plants (T & P) and carry out the chemical cleaning, Alkali Boil out, Steam blowing etc. as per BHEL instructions. Contractor shall lay out all necessary temporary piping, install the pumps, valves, pressure gauges, cables, switches, cutting of some of existing valves, placing of rubber wedges in the valves, installation of temporary tanks for chemical storage and for mixing, temporary access platforms to mixing tanks etc., all arrangements for nitrogen capping etc. required for hydro-test, chemical cleaning and steam blow off or for any other tests as the case may be. After the test is over all the temporary piping, pumps etc. will be removed. All these form part of the scope of work.
- 2.8.4 All temporary piping materials necessary for conducting hydraulic test, steam blowing etc. will be provided by BHEL. Servicing, erection and dismantling of the same is the responsibility of the contractor. Charges for dismantling of temporary lines etc should be included in the quoted rates. The boiler drum internals shall be removed during chemical cleaning and will be refitted after completion of acid cleaning within the quoted rates.
- 2.8.5 All material, equipment & chemical required for the chemical cleaning will be in the scope of contractor at no extra cost to BHEL.
- 2.8.6 All temporary pipe work and alterations carried out in the normal circulation system shall be tested, prior to commencement of chemical cleaning to a pressure of 1 ½ times the pressure at which cleaning / flushing processes will be carried out. On completion of chemical cleaning, an inspection shall be carried out in the presence of the Engineer to ascertain the effectiveness of the cleaning process. Satisfactory completion of acid cleaning is subject to the Engineer's approval.

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- 2.8.7 The valves, dampers, actuators etc. will have to be checked cleaned and overhauled in full or in part before erection, after acid cleaning, steam blowing and during commissioning as maybe necessary.
- 2.8.8 Commissioning of the boiler will involve trial runs of all the equipments erected, lighting up of the boiler, drying, blowing of the steam lines, floating of safety valves, flushing of all the lines by air, oil or steam as the case may be, trial run of the boiler, servicing of all equipments like dampers, actuators, valves etc. and any other works incidental to commissioning. Contractor shall provide required workers along with supervisors with all the requisite tools round the clock and material for all these works, which shall form part of the work to be done.
- 2.8.9 In case any defect is noticed 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 adjustments and realignment are necessary, the same shall be done as per the instructions of the BHEL Engineer. If any part of the equipment needs repair, rectification and replacement due to faulty erection or damage caused due to poor workmanship the same shall be done by the contractor at his cost and the parts to be replaced shall be provided by BHEL at the cost of the contractor.
- 2.8.10 During the period of testing the BHEL staff shall also be associated in the work, the contractor's responsibility will be to arrange required tools, man and plants till such time the commissioned units are taken over by BHEL.
- 2.8.11 After floating of safety valves, the commissioning activities and trial operations will continue till handing over of the boiler to BHEL. All these activities shall be completed within the specified period of contract .It shall be the responsibility of the contractor to provide various categories of workers in sufficient numbers as per the work requirement along with supervisors including necessary consumable tools etc., during this period. The rate quoted shall indicate all these contingencies also. The various categories of workers required for pre-commissioning, commissioning and post-commissioning activities are as follows:
- Pipe fitters
  - Millwright Fitters
  - HP& structural welders
  - Riggers
  - Unskilled workers
  - Supervisors
  - Electricians
- Any other category of workers as may be required.

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- 2.8.12 After commissioning & performance prove out of boiler, the boiler will be kept under trial operation for 02 months. During period of trail operation, the vender shall deployed at least one suitable person capable to attend the problem envisaged during this period. In case of any major problem encountered during this period the vender will be liable to deployed suitable team of person along with necessary resources to resolve the problem within 48 Hrs.
- 2.8.13 During commissioning, opening of valves, removal of certain gaskets, and re- erection in order to suit the commissioning requirement, changing of gaskets and attending to leakages, filling of oils to the meters/equipment, minor adjustments may arise. The quoted rate shall include the above work.
- 2.8.14 In case,any re-work is required because of contractor's faulty erection, which is noted during Commissioning, the same has to be rectified by the contractor at his cost, if any equipment/part is required to be inspected during commissioning, the contractor will dismantle/ open up the equipment/part and re-assembler/redo the work without any extra claim.
- 2.8.15 During commissioning any improvement / rectification due to design requirement is involved and if the contractor is asked to carry out the job they shall carry out the necessary work at no extra cost to BHEL

## 2.9. TIME SCHEDULE

- 2.9.1 The contractor shall have to mobilize in all respects within one week from the date of issue of Letter of Intent to commence the work. This one week will be in addition to the work completion period as specified at clause 2.9.1. Any delay beyond one week shall be included in the work completion period.
- 2.9.2 The entire work of erection testing and commissioning of the new Boiler Package as detailed in the Tender specification (Clouse No. 2.1) shall be completed within **07** months from the date of commencement of work at site(i.e. 07 days after LOI).
- 2.9.3 During the total period of contract, the contractor has to carry out the activities to meet the desired progress of the project as per the program of events/targets fixed by BHEL.
- 2.9.4 The work under this scope of contract is deemed to be completed in all respects only when all the components/ equipments are erected and testing, commissioning and performance check of all the equipment's are completed including safety valves floating. The decision of BHEL in this respect shall be final and binding with contractor.

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2.9.5 During the tenure of contract, if BHEL is not satisfied with the progress. BHEL reserves the right to withdraw any portion of the work and to complete the same either by their own means or some other agency at the risk and cost of the contractor.

## **2.10 SCOPE OF WORK PAINTING**

2.10.1 The scope of work include supply and application of paint as per painting specification. Although most of the structures, assemblies, equipments etc. shall be received in painted condition, however for surfaces which are worked upon, surface paint damages, scratches, worn out, surface paint faded etc. the scope of work shall also include supply and application of paint as per painting specification . Additionally if any item is received in unpainted condition, that too shall fall in this scope of work.

2.10.2 All exposed metal parts of boiler, equipment including pipingø, structures, hand-railing etc. Wherever applicable after installation unless otherwise surface protected, be first painted after thoroughly cleaning all such parts duct, rust, scales, grease, oil and other foreign materials. The same after inspected and approved by BHEL/Customer Engineers shall be released for painting. The instrument for checking the thickness of coat is to be procured by contractor and should be calibrated after periodical intervals.

2.10.4 The scope of painting includes application of colour bands, lettering the names of the systems, equipmentø tag nos of valves, marking the directions of flow and other datas required by customer / BHEL at the appropriate place as identified by BHEL / Customer, within the quoted rate.

2.10.5 Paints, thinner and brush, emery sheets, platform materials and other consumables shall be arranged by the contractor at his cost.

2.10.6 The make of paints should be BERGER, ASIAN, SHALIMAR, JENSONS & NICHOLSON, NEROLAC only.

## **2.11 PAINTING SPECIFICATION**

### **2.11.1 SCOPE**

This section covers the painting requirements for the package equipment, structures, piping etc. and any other surface required to be painted.

### **2.11.2 CODES AND STANDARDS**

Painting of equipment shall be carried out as per the specifications indicated below and shall conform to the relevant IS specification for the material and workmanship.

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The following Indian Standards may be referred to for carrying out the painting job:

- IS:5 : Colours for ready mixed paints and enamels
- IS:1303 : Glossary of terms relating to paints
- IS:2379 : Colour code for identification of pipelines
- IS:1477 : Code of practice for painting of ferrous metals in buildings(Part I &II )
- IS:2524 : Code of practice for painting of non-ferrous metals in buildings (Parts I & II)
- IS:2395 : Code of practice for painting of concrete, masonry and plaster surfaces (Parts I & II)
- IS:2338 : Code of practice for finishing of wood and wood based materials (Parts I & II)
- IS:6278 : Code of practice for white washing and colour washing
- IS:3140 : Code of practice for painting asbestos cement building products
- IS:158: Ready mixed paint, brushing, bituminous,black,leadfree, acid, alkali, water and heat resisting
- IS : 2074 : Ready mixed paint, air drying, red Oxide Zinc Chrome, priming
- IS : 104 : Ready mixed paint, brushing, Zinc Chrome, priming
- IS : 2932 : Enamel , synthetic, exterior (a) undercoating (b) finishing specification.

### 2.11.3 PREPARATION OF SURFACES

All surfaces to be painted shall be thoroughly cleaned of all grease, oil, loose mill scale, dust, rust and any other foreign matter. Mechanical cleaning by power tool and scrapping with steel wire brushes shall be adopted to clear the surfaces. However, in certain locations where power tool cleaning cannot be carried out, sand scrapping may be permitted with steel wire brushes and/or abrasive paper. Cleaning with solvents shall be resorted to only in such areas where other methods specified above have not achieved the desired results.

### 2.11.4 PRIMER PAINTS (P)

Primer paints shall be applied only on dry and clean surfaces:

### 2.11.5 Primer paint P1: (Epoxy based)

A two pack air drying epoxy polyamide resin based red oxide zinc phosphate (primer):

Epoxy content ( % wt)	15 to 18
Air drying time	About 30 minutes ( touch dry) overnight (hard dry)
Dry film thickness ( DFT/coat)	30 microns (min)
Temperature resistance	Up to 120 deg.C dry heat

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## 2.11.6 Primer paint P2 (Epoxy based)

A two pack air drying epoxy polyamide with zinc dust of at least 92% zinc dust on the dry film.

Epoxy content ( % wt)	8 to 10
Air drying time	About 10 minutes ( touch dry) 2 hours ( hard dry)
Dry film thickness ( DFT/coat)	40 microns ( min)
Temperature resistance	Upto 300 deg.C dry heat

## 2.11.7 Primer paint P3 ( Ethyl zinc silicate, EZS, based)

A two pack heavy duty zinc dust rich silicate primer:

Total solids ( % wt)	84 + or - 2
Air drying time	16 hours
Density	3.07 +/- 0.005
Dry film thickness ( DFT/coat)	60 microns ( min)
Temperature resistance	Upto 450 deg.C dry heat

## 2.11.8 Intermediate paints (I)

These paints shall be applied over primer coats as an intermediate layer to provide weather proof seal of primer coats.

## 2.11.9 Intermediate paint (II)

A two pack air drying high build epoxy resin based paint with MIO.

Air drying time	6 to 8 hours (touch dry) 7 days (full cure)
Dry film thickness ( DFT/coat)	100 microns
Temperature resistance	Upto 180 deg.C dry heat
Compatible with	Primer P1 and P2

## 2.11.10 FINISH PAINT

Finish paint coats shall be applied over primer coats and intermediate coats after proper cleaning and touch up of primed coats.

### 2.11.11 Finish paint F1

A two pack air drying epoxy polyamide enamel suitably pigmented

Air drying time	2 to 3 hours (touch dry) 7 days (full cure)
Dry film thickness ( DFT/coat)	40 microns
Temperature resistance	Upto 130 deg.C dry heat
Compatible with	Primers P1 and P2 Intermediate II
Colour	Generally all shades

### 2.11.12 Finish paint F2

A single pack synthetic rubber based enamel paint.

Air drying time	2 hours (touch dry) 24 hours (hand dry)
Dry film thickness ( DFT/coat)	25 microns
Temperature resistance	Upto 200 deg.C dry heat
Compatible with	No primers
Colour	Generally all shades

2.11.13 The colour / shade shall be as approved by the BHEL. After cleaning the dust on the dried up primer, first coat of synthetic enamel shall be applied. After this first coat dries up hard, the surface is wet scrubbed cutting down to a smooth finish and ensuring that at no place the first coat is completely removed. After allowing the water to get evaporated completely, the second finish coat of synthetic enamel paint shall be applied.

2.12.14 Equipment no. and the name of the equipment shall be painted on the surface of the Equipment on visible locations. Service of the Pipe/Line designation with arrow identification for the direction of flow shall be painted on all pipes at visible locations at an interval of 02 metres. Wherever pipe lines are insulated, the service of the piping and arrow mark shall be painted over the clad surface.

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

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Annexure B/Sec-2



## 2.12.15 SUGGESTED COLOUR CODES FOR PAINTING

SL. No.	ITEM/SERVICE	COLOUR	IS-5	COLOUR BAND	IS-5
1	Structures, platforms, galleries, ladders and handrails	Dark Admiralty black		-	-
2	Boiler casing, ESP and ducting	Nut Brown	413	-	-
3	Fans, pumps, motors, Compressors, Blowers	Light Grey	631	-	-
4	Tanks (without insulation and cladding)				
4.1	Outdoor, Standpipes, vent pipes	Aluminium	-	-	-
4.2	Indoor	Aluminium	-	-	-
5	Vessels & all other proprietary equipment (without insulation & cladding)	Light grey	631	-	-
6	Switchgear	Light grey	631	-	-
7	Control & relay panels	Light grey	631/7078 of IS 1650	-	-
8	Transformers	Dark Admiralty Gray	632		
9	Machinery guards	Signal red	537	-	-
10	Piping (without insulation and cladding)				
10.1	Water System				
a)	Boiler feed	Sea green	217	-	-
b)	Condensate	Sea green	217	Light brown orange	410
c)	D.M. Water	Sea green	217	Light orange	
d)	Soft water	Sea green	217	French blue	166
e)	Bearing cooling water	Sea green	217	French blue	166
f)	Potable & filtered water	Sea green	217	French blue	166

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g)	Service & clarified water	Sea green	217	French blue	166
h)	Raw water	Sea green	217	White	-
i)	Cooling water	Sea green	217	French blue	166
10.2	Compressed Air System				
a)	Service air	Sky Blue	101	-	-
b)	Instrument air	blue	101	White	-
10.3	Fire services	Fire red	536	-	-
10.4	Ash slurry pipes	Black	-	-	-
10.5	Vacuum pipes	Sky blue	101	Black	-
10.6	Fuel pipes (lignite)	Light	410	-	-
		brown			
10.7	Drainage	Black	-	-	-
10.8	Stand pipes and all	Aluminium	-	-	-
	Vent pipes				
10.9	Bottom Ash system	Light Grey	631	-	-
10.10	Powdered Limestone handling system	White with green band	-	-	-

Notes :

This colour code basically refers to IS:2379 for piping with necessary modifications. Where band colour is specified, same shall be provided at 01 meter intervals on long uninterrupted lines and also adjacent to valves and junctions.

## PAINT APPLICATION

Paint shall be applied in accordance with manufacturer's recommendations. The work shall generally follow IS 1477 (Part II) for jobs carried out in India. Paint shall not be applied when the ambient temperature is 5 deg. C and below. Also paint shall not be applied in rain, wind, fog or at relative humidity of 80% and above. Each coat of paint shall be continuous, free of pores and of even film thickness without thin spots. Each coat of paint shall be dry sufficiently before application of next coat.

2.12.16 The Contractor shall furnish paint manufacturer's test report or technical data sheet pertaining to the paint selected. The data sheet shall indicate among other things the relevant standards, if any, composition in weight percent of pigments, vehicles, additives, drying time, viscosity, spreading rate, flash points, methods of application quality of surface preparation required, corrosion resistance properties and color.

2.12.17 Type of paint products like P1, P2, I1, I2, F1 and F2 has been specified elsewhere in the specification.

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## Annexure B/Sec-2

2.12.18 For a complete painting scheme of any item being painted, all types of paints are to be procured from the same manufacturer as approved by the BHEL.

### 2.12.19 Legend

Sa - 2.5 ó The quality of surface cleaning, i.e 95 % of the surface area is free from all rust, mill scales and visible residues, foreign materials etc.

SP- Surface preparation quality

2P1 - Two (2) coats of primer paint type P1

1I1 - One(1) coat of intermediate paint type I1

2F1 - Two(2)coats of finish paint type F1

DFT - Dry film thickness

CRT - Clean and retouch.

### 2.12.20 Painting scheme

The painting scheme to be followed for various equipment / structures is briefly given below for guidance to the Contractor.

Sl. No.	Description	Painting scheme		Total DFT in Micron
		At shop	At site	
1	Steel structure	SP-Sa 2 ½, 2P1 + 1 I 1	2F1	240
2	Mechanical equipment (Temperature not over 80 deg.C) Both static and rotary equipment for indoor or outdoor duty	SP-Sa 2 ½, 2P1 + 1 I 1	2F1	240
3	Equipment with hot surfaces (temperature upto 400 Deg,C)	SP-Sa 2 ½,2P2	2F2	130
4	Equipment with hot surfaces (temperature above 400 Deg.C)	SP ó Sa 2 ½,2P3	2F2	170
5	Non insulated pipe/duct works	SP-Sa 2 ½,2P1 + 1 I1	2F1	240
6	Insulated pipe/duct works	SP ó Sa 2 ½	2F2	60-120
		2 coats primer suitable for Intended, temperature application Recommendation. The primers selection shall be done generally in line with the specification laid down in clauses above	Final painting shall be Done over the case Of aluminum cladding, final painting will not be required.	

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## Annexure B/Sec-2

### 2.13 SCOPE OF WORK--- LIASONING

The scope as indicated against clause No. 1.15.0 should be covered within quoted rates.

- 2.13.1 Submission of necessary documents to statutory authorities(Labour officer, Pollution control board, Boiler directorate etc.)
- 2.13.2 To co-ordinate &organized statutory stage inspection.
- 2.13.3 Follow-up with statutory authorities, after submission of documents till issuance of required approval/certificate
- 2.13.4 Handing over the statutory certificates obtained with a copies of all the documents submitted to the authorities during the process, shall be finally handed over to BHEL.

### 2.14 PAYMENTS PROCEDURE TO BE ADOPTED FOR THIS PROJECT

- 2.14.1 The contractor shall submit his running bills once in a month at the end of each month
- 2.14.2 BHEL Engineer shall take measurement and certify based on the actual work executed in the measurement books and verify the bills for executed work.
- 2.14.3 This tender has been conceived with three basic component of payment as per given below
  - A. Payment towards Erection, Testing & Commissioning of all items covered in the project. This will be broadly indicated as -ETC Paymentö.(Erection ,Testing & Commissioning)  
This ETC payment (A) will have 02 parts, first part, i.e.A-1 will be for payment against various stages of erection (75 % of A), where the second part, i.e. A-2 involve balance of erection, testing, commissioning trial & handover the total package for operation will be milestone based.(25 % of A),
  - B. Payment towards Total painting covering stage wise painting as well as final painting as detailed out in section 1&2
  - C. Payment towards liasioning with statutory authorities to obtain necessaries certificate/approval to operate &run the items covered in this project as per details given in section 1&2

### 2.14.4 PAYMENT TERMS (A)

#### (A-1) Erection Stage Payment on Pro rata Basis

Please refer Annexure-B/Section-04/Appendix ó I (Weight Schedule) wherein all the materials to be erected are categorized under eight distinct categories (1, 2, 3a, 3b, 4a, 4b, 4c, 5) for making payment under pro rata basis in line with weight schedule.

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**Annexure B/Sec-2**

Item Categories are as below for reference.

- ITEM-1: Pressure Parts. (PP) Annex-B/Refer Sec. 04, Appendix. 0II,
- ITEM- 2: Non-Pressure Parts. (NPP), Refer Annex-B/Sec. 04, Appendix. III,
- ITEM-3a: Structure, Refer Annex-B/Sec. 04, Appendix. IV,
- ITEM-3b: BOI Mechanical, Refer Annex-B/Sec. 04, Appendix. V,
- ITEM-4a: ESP, Refer Annex-B/Sec 04, Appendix. VI,
- ITEM-4b: Chimney, Refer Annex-B/Sec 04, Appendix. 0VII,
- ITEM-4c: FANS Refer Annex-B/Sec 04, Appendix. VIII,
- ITEM-5: C& I, General Electrification, Refer Annex-B/Sec 04, Appendix. 0IX,

Items against various categories described above will have several erection stages, unique to a particular Item Category. The evaluation of erection stage for payment will be decided on the basis of 0 Table-A 0 (Erection Stage Payment ) which contains the Item Categories in the horizontal line (row) and various erection stages in the vertical line (column).

The weight of material, drawn under various item category, in a month and, the stage of erection achieved for the same with reference to Table-A, will form the basis for evaluation of the work in a month for payment on pro rate basis in line with quoted rates.

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**TABLE-A (ERECTION STAGE PAYMENT TABLE) Annexure B/Sec-2**



SL. N		ITEM No:1 P.P	ITEM No:2 N.P.P.	ITEM No: 3a. Structure	ITEM No: 3b. BOI Mech.	ITEM No: 4a. ESP	ITEM No.4b. Chimney	ITEM No: 4c. Fans)	ITEM No: 5 C&I, General
1	Completion of pre-assembly,(if not applicable this portion shall be clubbed with Placement in position)	15%	15%	20%	10%	10%	10%	20%	10%
2	Placement in position	10%	10%	10%	5%	10%	10%	10%	25%
3	Alignment	5%	5%	10%	10%	10%	10%	10%	5%
4	Welding /bolting/fixing as required	10%	10%	10%	10%	10%	5%	15%	
5	Completion of non-destructive examination & stress relieving /heat treatment, (if not applicable, then this portion to be paid along with welding)	10%	10%	5%	5%	10%	5%	10%	
6	Completion of Hoppers Along With All Doors, Heating Elements, Poking doors, etc.			10%	10%	10%			
	Completion Of Inner, Outer roof insulator housing, Rectifier transformers, Penthouse Monorails, Hoists etc.				5%	5%	10%		10%
8	Erection of emitting and Collecting Rapping system with all drives								5%
9	completion of attachment welding, fin, welding, supports	5%	5%	5%	5%	5%	10%		
10	Completion of roof skin casing/Insulation	5%	5%		5%		5%		
11	Hangers,Supports & Accessories etc. Wherever Necessary as Per Drg.	5%	5%	5%	5%		5%		
12	Equipment Trial operation				5%	5%	5%	10%	20%
13	Hydro Test /pneumatic Test/ Stage Test/Gas tightness/Gas leakage Test	10%	10%						
	<b>TOTAL ERECTION STAGE PAYMENT ON PRO RATA BASIS (A-1)</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>	<b>75%</b>

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## (A-2) ETC (Balance of Erection, Testing & Commissioning) Milestone for Payment

Further 25 % payment on pro-rata basis common to all PG shall be released on achievement of the following milestones events for the tonnage erected for all 08 items (1,2,3a,3b,4a,4b,4c,&5)

1. 02 % will be released after completion of hydraulic test.
2. 02 % will be released after completion of air / gas tightness test for boiler.
3. 01 % will be released after completion of air / gas tightness test for each pass of ESP.
4. 01 % will be released after charging of all ESP fields.
5. 02 % will be released after boiler light up & ABO/Acid/EDTA/Chemical cleaning.
6. 02 % will be released after trail run of FD.ID & PA Fans.
7. 02 % will be released after steam blowing & safety valve floating.
8. 02 % will be released after successful coal feeding.
9. 02 % will be released after successful full load testing.
10. 05% will be released after successful run of boiler at full load test for one month.
- 11.02 % will be released after resolution of all pending points.in line with successful Commissioning of boiler.
12. 02 % will be released after completion of all contractual obligations and demobilization of site establishment .

## (B) PAYMENT TOWARDS PAINTING

There will be no stage payment for painting. Full payment will be made after successful commissioning and trial period.

## (C) PAYMENT TOWARDS LIASIONING

Full payment towards liasioning will be made after obtaining statutory certificate from Boiler inspector/ directorate to run and operate the boiler. The bidder is required to submit a copy of all documents submitted to boiler office before issuance of final certificate

**CONTRACTOR SHALL NOTE THAT ALL RUNNING BILLS SHALL BE RELEASED ONLY ON PRODUCTION OF CERTIFICATE ISSUED BY SITE IN CHARGE BHEL THAT THE CONTRACTOR HAS FULLFILLED ALL THE CONTRACTURAL STATUTORY REQUIREMENTS.**

### 2.15. OVER RUN CHARGES

- 2.15.1 Incase due to reasons not attributable to the contractor, the work gets delayed and completion time gets extended beyond 09 months (07 months + 02 months ) from the date of commencement of the work the contractor shall not be entitled for any overrun compensation (ORC)

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Annexure B/Sec-2

## 2.16 PRICE ESCALATION

- 2.16.1 The quoted / accepted rate has to be kept firm for the entire contractual period including total extended period if any and no claim what so ever for revision of rates is allowed under any circumstances.
- 2.16.2 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 if any.

## 2.17 TAXES, DUTIES AND LEVIES

The contractor shall pay all taxes, fees, license charges, deposits, duties, tools, royalty, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.

Rates quoted by the bidder shall be inclusive of all taxes, levies & duties etc. except service tax. Service tax shall be extra as applicable. (Ref. Annex. 6D, Instruction To Bidder)

## 2.18 OTHER STATUTORY REQUIREMENTS (GCC)

- I) The Contractor should ensure compliance of Sec 21 of Contract Labour (R&A) Act 1970 regarding responsibility for payment of Wages. In case of Non-compliance of Sec 21 or non-payment of wages to the workmen before the expiry of wage period by the contractor, BHEL will reserve its right to pay the workmen under the orders of Appropriate authority at the risk and cost of the Contractor. (Ref. Annex. 6G, GCC, Clause No. 04)
- II) In case of any dispute pending before the appropriate authority under I D act 1948, WC Act 1923 or ESI Act 1948 and PF Act 1952, BHEL reserve the right to hold such amounts from the final bills of the Contractor, which will be released on submission of proof of settlement of issues from the appropriate authority under the act. (Ref. Annex. 6G, GCC, Clause No. 18 &19)
- III) All the terms & conditions of the contract with respect to Taxes & Duties are subject to the new taxation laws introduced from time to time (e.g. GST). The terms & Conditions will be modified in accordance with the provisions of new laws (e.g. GST). (Ref. Annex. 6D, Instruction To Bidder, clause No. 09)

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Annexure B/Sec-3

## SECTION – 3 (TOTAL SCOPE AT A GLANCE)

### Section -3 Appendix-I (Site Establishment)

Sl.No	Description	Scope to be taken care by	
		BHEL	Bidder
<b>1</b>	<b>Open space</b>		
1.1	Open space for storage of material required.	Yes	
1.2	Covered shed for fabrication and assemble of project approx. 180 sq. metre.	Yes	
1.3	Covered / ready to use office rooms for projects	Yes	
1.4	Firefighting equipmentø like buckets, extinguishers etc.		Yes
<b>2</b>	<b>For living purpose of bidder staff</b>		
2.1	Lodging & Boarding for Executives.		Yes
2.2	Lodging & Boarding for Workers.		Yes
<b>3</b>	<b>Electricity</b>		
3.1	Charges of the electricity for project(Refer-Annex-B/Sec-1/Cl:1.2.2 )		Yes
3.2	Provision of electricity at single point	Yes	
3.3	Further distribution of Electricity including required material and execution		Yes
<b>4</b>	<b>Water Supply</b>		
4.1	Making the water available at single point	Yes	
4.2	Further distribution as per the requirement of work including supply of material and execution.		Yes
<b>5</b>	<b>Transportation</b>		
5.1	For project purposes:		Yes
5.2	For the site personnel of the bidder		Yes
5.3	For the bidderø equipmentø and consumables (T&P,consumables etc.)		Yes
<b>5</b>	<b>Lighting</b>		
5.1	For construction work (supply of all the necessary materials & Execution)		
	1. At office storage area		Yes
	2. At the preassembly area		Yes
	3. At the construction site /area		Yes
<b>6</b>	<b>Communication Facility for site operation</b>		
6.1	Telephone, internet, intranet, e-mail etc		Yes
<b>7</b>	<b>Compressed air Supply for erection &amp; construction</b>		

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7.1	Supply of Compressor and all other equipments required for compressed air system including pipes valves, storage systems etc		Yes
7.2	Installation of the above system and operation and maintenance of the same .		Yes
7.3	Supply of the all the consumables for the above system during the contract period		Yes

## Section -3 Appendix-II (Site/Erection Management)

Various erection aspects related to site (Planning, Process, Drawings , Execution and Documents)

Sl.No	Description	Scope to be taken care by	
		BHEL	Bidder
	<b>Engineering works for construction :</b>		
1	Providing the erection drawings for all the equipments covered under this scope	Yes	
2	Drawings for construction methods	Yes	
3	As-built drawings of where ever deviations observed and executed and also based on the decisions taken at site- example of routing of small bore pipes		Yes
4	Shipping lists etc for reference and planning the activities	Yes	
5	Preparation of site erection schedules and other input requirements	Yes	
6	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes
7	Weekly erection schedules on SI No .5		Yes
8	Daily erection / work plan based on SI No 7		Yes
9	Preparation of preassembly bay		Yes
10	Arranging the materials required for preassembly		Yes

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## Section -3 Appendix-III (Erection Tools and Plants)

Sl.No	Description	Scope to be taken care by	
		BHEL	Bidder
<b>1</b>	<b>Material handling equipment</b>		Yes
	Mobile Cranes		Yes
	Loader		Yes
	Fork lifter		Yes
	Trucks		Yes
	Platform trucks		Yes
<b>2</b>	<b>Material handling Tools</b>		Yes
	Winches with wire rope		Yes
	Chain pulley blocks		Yes
	Jacks		Yes
	Sleepers for crane movement		Yes
	Wire ropes, slings of different capacity		Yes
	D -shackles		Yes
	Magnetic lifter		Yes
	Derricks		Yes
<b>3</b>	<b>Fabrication ,construction equipment</b>		Yes
	CO2 welding M/c		Yes
	MIG welding M/c		Yes
	ARC welding M/c		Yes
	TIG welding M/c		Yes
	Sub arc murge welding M/c		Yes
	Drilling M/c		Yes
	Grinding M/c		Yes
	Pug Cutting M/c		Yes
	Pipe bending M/c		Yes
	Pipe cutting, threading & bevelling M/c		Yes
	Pipe chamfering M/c		Yes
	Plasma Cutting M/c		Yes
	Heat treatment Oven & S.R.Furnece		Yes
	Electrode backing oven		Yes
	Portable Heating oven		Yes

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<b>4</b>	<b>Fabrication ,construction Tooling</b>		Yes
	Gas cutting Torch		Yes
	Portable drilling M/c		Yes
	All hand tools		Yes
	Different type of vices		Yes
	Hand grinding M/c		Yes
	Sheet Rolling M/c		Yes
	Sheet Bending M/c		Yes
	Hand Drill M/c		Yes
	Drill ,taps &die set		Yes
	sprit levels		Yes
<b>5</b>	<b>Testing and quality equipment</b>		Yes
	Ele. operated Hydro test pump		Yes
	Hand operated Hydro test pump		Yes
	Acid Cleaning Pump		Yes
	Magger		Yes
	Boiler filling pump		Yes
	Pressure gauges		Yes
	All Radio graphic equipment óUltrasonic, NDT etc.		Yes
	Dye penetrate test kit		Yes
	Piano wires		Yes
	Taper wedges		Yes
	Dial bore micro gauge		Yes
	Vibro meter		Yes
	Noise level meter		Yes
	Multimeter		Yes
	Tong tester		Yes
	Sand blasting m/c		Yes
	Spray painting M/c		Yes
<b>6.</b>	<b>Any other T&amp;P required (not covered above)</b>		Yes

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## Section -3 Appendix-IV (Consumables required for erection )

Annexure B/Sec-3

Sl.No	Description	Scope to be taken care by	
		BHEL	Bidder
1	<b>All consumables including :</b>		Yes
1.1	Ordinary cement		Yes
1.2	Grouting cement		Yes
1.3	Any special cement		Yes
1.4	Sand, bricks etc.		Yes
1.5	Tig wires-pressure part	Yes	
1.6	Tig wires-Non pressure part		Yes
1.7	Electrodes		Yes
1.8	Brazing rod, flux etc.		Yes
1.9	Soldering		Yes
1.10ø	DA, oxygen, argon		Yes
1.11	Nitrogen required for chemical cleaning		Yes
1.12	Nitrogen required for construction		Yes
1.13	Paints along with thinner, brushes,		Yes
1.14	cleaning materials etc. for preservation of components		
1.15	Paints including thinner, brushes, cleaning materials etc. , as per specifications		Yes
2	<b>Welding</b>		Yes
2.1	All welding works		Yes
2.2	All radiography and other testing works like DPI, MPI, UT,		Yes
2.3	All connected works like preheating, post heating, stress relieving,		Yes
2.4	Verification of HP welders as per IBR. BHEL will not provide materials, test certificates etc. for the above purpose unless specifically stated .		Yes
2.5	To submit test pieces of the welders for BHELøapproval before putting them on regular work. Required materials for test to be arranged by BHEL.		Yes
2.6	The accessories required for the welders to be arranged by the bidder		Yes
3	<b>Chemical Cleaning</b>		
3.1	Supply of pumps, motor, starters, cables, piping and other materials required for the operation		Yes
3.2	Servicing the required equipmentø and commissioning		Yes
3.3	Chemicals required for the operation including Nitrogen gas		Yes
3.4	Handling equipmentø / consumables for the chemical cleaning works		Yes
3.5	Effluent disposal system		Yes
3.6	Services for the effluent disposal		Yes
4.0	Any other consumables required (not covered above)		Yes

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-3

## Section -3 Appendix-V(Material shifting, Erection ,Testing & Commissioning )

Sl.No	Description	Scope to be taken care by	
		BHEL	Bidder
1	<b>Scope Of Work</b>		Yes
1.1	Handling at site stores/ storage yard		Yes
1.2	Transportation within the site		Yes
1.3	Erection testing & commissioning		Yes
1.4	Final painting of erected materials including supply of paints, thinners etc.		Yes
1.5	Carrying out P.G.test		Yes
2	<b>Handling &amp; Transportation</b>		Yes
2.1	Stores/storage yard to pre assay area/erection site		Yes
2.2	Pre assembly area to site of installation		Yes
2.3	Erection site to pre assembly area / stores/ storage area if required		Yes
2.4	Touch up painting wherever required till final painting.( please refer the relevant clause for supply of paints, thinners etc)		Yes
2.5	Preparation storage at site for proper stacking of materials		Yes
3	<b>Erection &amp; Commissioning</b>		Yes
3.1	Erection drawings/documents/working instructions etc	Yes	
3.2	Welding schedules	Yes	
3.3	Engineering methods	Yes	
3.4	Organising the resources required for erection, testing &commissioning of the materials covered under the scope and executing the work as per instruction of BHEL engineer		Yes
3.5	All tools &Plants (T&P) required for execution of the work		Yes
3.6	Final painting of all the materials erected		Yes
3.7	Demobilization of the erection site		Yes
3.8	Cleaning of / upkeep of erection / preassembly /storage areas		Yes
3.9	Return of excess materials drawn to BHEL stores/ customer		Yes
3.10	Reconciliation of all the consumables, T&P drawn from BHEL / customer ÷s store		Yes
3.11	Filling up quality log sheets		Yes
3.12	Providing all temporary arrangements like platforms, scaffoldings etc for execution		Yes
3.13	Assistance for P.G test		Yes

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

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4	<b>Civil Works</b>		
4.1	Taking over of foundations	Yes	Yes
4.2	Checking, chipping and correcting final dimensions of the foundations if required		Yes
4.3	Placement, erection of embedded parts integral for the scope of work and coordination agencies for embedment with customer's civil/other		Yes
4.4	Bolt grouting with grout as specified		Yes
4.5	Final grouting of all the equipment covered under this scope		Yes
5	<b>Statutory Clearances</b>		
5.1	Labour license		Yes
5.2	Provident fund		Yes
5.3	Insurance whatever comes under bidder's scope		Yes
5.4	Workmen compensation		Yes
5.5	Minimum wages		Yes
5.6	Sales tax/GST/Service Tax.		Yes
5.7	Local laws governing the works like electrical inspectorate, factory inspectorate, etc.		Yes
5.8	Professional tax		Yes
5.9	Safety rules and regulations		Yes
5.10'	Approval from competent authority for installation like IBR etc.		Yes
6	<b>Submission of Reports</b>		
6.1	Man power deployment category wise and area wise		Yes
6.2	Deployment of tools and plant , area wise		Yes
6.3	Consumables used		Yes
6.4	Erection log		Yes
6.5	Erection data PGMADU wise		Yes
6.6	Data on joints welded as per log sheet/ welding schedule		Yes
6.7	Materials management reports as per instruction of BHEL		Yes
6.8	Meeting between BHEL and bidder at BHEL office every day for monitoring the progress		Yes

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-4

## SECTION-4 (WEIGHT SCHEDULE)

### Section 4 Appendix- I

### WEIGHT SCHEDULE for 12 MTPH New Boiler Package BHEL Jhansi

#### SUMMARY OF WEIGHTS

SN	Description	Weight (Approx.)	Unit	Remark
1	Pressure Parts:	46.700	MT	ITEM-1 (PP) Refer Sec.04, Appendix- II
2	Non-Pressure parts,	124.100	MT	ITEM-2 ( NPP)Refer Sec.04,Appendix- III
3.a	Structure,	153.300	MT	ITEM-3a (Structure)Refer Sec.04, Appendix- IV
3.b	BOI-Mechanical	117.200	MT	ITEM-3b (BOI-Mechanical)Refer Sec.04, Appendix- V
4.a	ESP	111.841	MT	ITEM-4a (ESP)Refer Sec.04, Appendix- VI
4.b	Chimney	29.082	MT	ITEM-4b (Chimney)Refer Sec.04, Appendix-VII
4.c	Fans,	16.200	MT	ITEM-4c (Fans)Refer Sec.04, Appendix- VIII
5	Boiler C&I, General elec.	33.000	MT	ITEM-5 (Boiler C&I, General elec.)Refer Sec.04, Appendix- IX
	TOTAL WEIGHT (MT)	631.423	MT	

*We hereby accepted above  
(signature & seal of bidder)*

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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-4

## Item-1- Pressure Parts (PP)- Appendix- II

Sr.No.	Product Group No.	Description	Weight in MT
<b>1.0</b>		<b>PRESSURE PART(PP)</b>	
	4	BOILER DRUM(S)	8.700
	5	WATER WALL HEADERS	2.100
	6	WATER WALL PANELS	5.600
	7	CIRCULATION SYSTEM COMPONENTS	12.400
	12	SUPERHEATER COMPONENTS	2.400
	19	ECONOMISER HEADERS, COILS AND COMPONENTS	4.500
	24	BOILER INTEGRAL PIPING & FITTINGS	11.000
		<b>TOTAL WEIGHT (MT)</b>	<b>46.700</b>

## Item-2 - Non-Pressure parts- Appendix- III

Sr.No.	Product Group No.	Description	Weight in MT
<b>2.0</b>		<b>NON PRESSURE PART</b>	<b>Weight in MT</b>
	8	BUCKSTAYS AND FRAMING	8.300
	9	SEAL BOXES	0.900
	28	MANHOLES & FURNACE OPENINGS	0.700
	30	FIXING COMPONENTS FOR MAIN BOILER LINING & INSULATION	3.200
	31	BOILER SKIN CASING	1.500
	32	FIXING COMPONENTS FOR BOILER AUXILIARIES INSULATION	6.200
	33	LINING AND INSULATION MATERIALS	34.500
	37	BOILER OUTER CASING	6.000
	44	BOTTOM ASH HANDLING SYSTEM	2.800
	45	DISTRIBUTOR PLATES	2.500
	47	FUEL CHUTE & LIMESTONE PIPING	6.500
	48	DUCTS, DAMPERS & EXPANSION JOINTS	42.000
	67	RAW COAL GATE	4.000
		Boiler scope valves	5
		<b>TOTAL WEIGHT (MT)</b>	<b>124.100</b>

We hereby accepted above  
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Seal & Signature of  
BHEL contracting authority

# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-4

## Item-3a- STRUCTURE --Appendix- IV

Sr.No.	Product Group No.	Description	Weight in MT
<b>3.0</b>		<b>STRUCTURE</b>	
	34	BUNKER COLUMNS	47.000
	35	BOILER SUPPORTING STRUCTURES	44.500
	36	GALLERIES AND STAIRWAYS	32.000
	39	EXTERNAL STRUCTURES	10.300
	66	BUNKERS	19.500
		<b>TOTAL WEIGHT (MT)</b>	<b>153.300</b>

## Item-3b- BOILER BOI-Mech.- Appendix- V

Sr.No.	Product Group No.	Description	Weight in MT
<b>4.0</b>		<b>BOILER BOI-Mech.</b>	
	80	EXTERNAL PIPING, HP & LP Dosing system, Exhausts & Vents, Coal handling system, De-aerator over flow & supports	105.4
	20	RB IE Main Assy., wall box Assy., Blowing Element etc.	0.500
	21	Soot Blowing assy & system	1.500
	81	TANKS & VESSELS	9.800
		<b>TOTAL WEIGHT (MT)</b>	<b>117.200</b>

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Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-4

## Item-4a - ESP - Appendix- VI

Sr.No.	Product Group No.	Description	Weight (MT)
<b>5.0</b>		<b>ESP</b>	
	71301	ROLL/SLIDE SUPPORTS	0.805
	71305	ESP-SUB-DELIVERY COMPONENTS	0.081
	71306	INSULATOR HOUSING AS	2.097
	71308	GAS DIST. ASSY	0.776
	71309	GD-RAPPING MECHANISM	0.556
	71311	GAS SCREEN-EP	1.015
	71313	EMIT SYST SUSPENSION	0.838
	71314	SUPPORT INSULATORS	0.540
	71315	EMITTING ELECTRODES	0.119
	71316	EMIT ELECT RAPP MECH	1.121
	71319	COL ELEC SUSPENSION	2.052
	71320	COLLECTING ELECTRODE	6.744
	71321	EMIT SYS FRAME-TOP	5.707
	71323	INSPECTION DOORS	0.597
	71324	SHOCK BARS	1.682
	71325	COLL ELECT RAPP MECH	1.546
	71328	ESP ROOF BEAM	1.723
	71330	ELECTRICAL SD COMPTS	0.756
	71331	GEARED MOTORS FOR RAPPING MECH	1.000
	71337	JUNCTION BOX & PUSH BUTTON STA	0.131
	71342	OUTER ROOF-EP	5.697
	71343	HOPPER RIDGES	0.368
	71344	HOPPER UPPER PART	10.954
	71346	INSULATOR SUPP PANEL	4.961
	71348	CASING STRUCTURE	3.438
	71349	CASING SHELL/PANEL	12.627
	71350	INLET-OUTLET FUNNEL	3.000
	71357	SPLITTER & GUIDE VANES	0.400
	71359	SUPPORTS FOR ELECTRICAL ITEMS	0.800
	71360	CABLE-CABLE RACKS	2.580
	71361	EP PERF TEST EQUIPT	0.024

We hereby accepted above  
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Seal & Signature of  
BHEL contracting authority

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Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00



	71362	CABLE TRAY AND FLEXIBLE SUPPTS	2.920
	71363	ASH LEVEL INDICATOR	0.060
	71367	MIN WOOL FOR ESP INSULATION	4.088
	71368	FIXING COMP. FOR ESP INSULATIN	1.356
	71372	INTERLOCKS-EP	0.120
	71373	ELECTRICALLY OPERTD HOIST&ACCE	1.700
	71376	RECTIFIRS&CONTRLS-EP	3.600
	71377	LT SWITCH BOARD/ESP SWTICH GEA	2.500
	71378	BAPCON & ACCESSORIES	0.027
	71380	FOUNDATION MATLS FOR ESP	0.533
	71381	SUPPOTING STRUCTURES FOR ESP	8.440
	71390	HEATING ELEMENTS	0.115
	71988	COMMISSIONING SPARES	0.120
	71996	TOOLS & TACKLES	0.090
	89610	EP GALLERIES&STAIRS	6.053
	89611	ESP ROOF HANDRAILS	0.854
	89612	FLOOR GRILL AND STEP TREAD	2.917
	89615	INSULATION CLADDING SH FOR ESP	1.613
		<b>TOTAL WEIGHT (MT)</b>	<b>111.841</b>

## Item-4b - CHIMNEY- Appendix- VII

Sr.No.	Product Group No.	Description	Weight (MT)
6.0		<b>CHIMNEY</b>	
	87010	CHIMNEY FDN MATERIAL	1.614
	87100	CHIMNEY SHELL	15.370
	87150	CHIMNEY STRAKES	1.274
	87200	PAINTER TROLLEY	0.402
	87300	PLATFORMS & LADDERS	8.587
	87930	AVIATION LAMPS	0.495
	87950	CHIMNEY INSULATION	0.840
	87960	CHIMN INS FIX COMP	0.500
		<b>TOTAL WEIGHT (MT)</b>	<b>29.082</b>

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BHEL contracting authority



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure B/Sec-4

## Item-4c-- FANS -Appendix- VIII

Sr.No.	Product Group No.	Description	Weight (MT)
<b>7.0</b>		<b>FANS</b>	
	56131	PA Fan- 01No.--1.5 MT	1.500
	56111	F D Fan -02 No.-4.2MT	4.200
	56122	I D Fan- 01No.-2.8 MT	2.800
	50121	APH	7.700
		<b>TOTAL WEIGHT (MT)</b>	<b>16.200</b>

## Item-5- GENERAL ELECTRIFICATION. , BOILER C&I Appendix- IX

Sr.No.	Product Group No.	Description	Weight (MT)
<b>8.0</b>	97	<b>GENERAL ELE. ,BOILER C&amp;I</b>	33.000
		Drives	
		Control panels	
		Power, instrument and Control Cables	
		Distribution Boards	
		Control instruments	
		L T Electrical panel	
		Cable tray	
		Burner management system	
		Local Temp./Pressure Gauges & senses	
		Angle & Channel	
		P B Junction box.	
		<b>TOTAL WEIGHT (MT)</b>	<b>33.000</b>

We hereby accepted above  
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Seal & Signature of  
BHEL contracting authority

## Section 4 Appendix- X Envisaged H P Erection Joints during Boiler Assembly

S.No.	Obj1	Obj2	Size	Matl	No of joints
1	Roof tubes	Upper Drum	51x5/51x5.6	SA210Gr.C/SA210Gr.A	31
2	Roof tubes	Roof tubes	51x5/51x5	SA210Gr.C/SA210Gr.C	31
3	Roof tubes	Front Water Wall	51x5/51x5	SA210Gr.C/SA210Gr.C	31
4	Front water wall	lower Front ww hdr	51x5/51x5	SA210Gr.C/SA210Gr.C	31
<b>Furnace rear wall</b>					
5	Furnace rear wall panel	Lower Rear WW hdr	51x5/51x5	SA210Gr.C/SA210Gr.C	31
6	Furnace rear wall panel	Furnace screen tubes	51x5/51x5	SA210Gr.C/SA210Gr.C	31
7	Furnace Screen Tubes	Upper Drum	51x5/51x5.6	SA210Gr.C/SA210Gr.A	31
<b>Boiler rear wall</b>					
8	Boiler rear wall loose tubes(upper drum end)	Boiler rear wall panel	51x5/51x5	SA210Gr.C/SA210Gr.C	15
9	Boiler rear wall panel	Boiler rear wall loose tubes(lower drum end)	51x5/51x5	SA210Gr.C/SA210Gr.C	15
<b>Furnace side wall panels</b>					
10	Right side/Left side ww i/ hdr	Furnace right side/left wall panels(lower end)	51x5/51x5	SA210Gr.C/SA210Gr.C	82
11	Right side/left ww o/ hdr	Furnace right side/left wall panels(Upper end)	51x5/51x5	SA210Gr.C/SA210Gr.C	82
12	Right side/Left side ww i/ hdr	Lower drum	219.1x22.23/219.1	SA210Gr.C/SA210Gr.C	2
<b>Riser pipes</b>					
13	RISER PIPE (ELBOW)	Riser pipes	127X8/127X14.28	SA106Gr.B/SA106GrB	16
14	Left/Right side ww outlet hdr STUB	RISER PIPE (ELBOW)	127X8/127X14.28	SA106Gr.B/SA106GrB	16
15	Upper Drum stub	Riser pipes(left side/right side)	127x20/127x8	SA106Gr.C/SA106GrB	16
<b>Supply pipes</b>					
16	Lower Rear WW hdr	Supply pipes(right side)	88.9x5.49/88.9x5.4	SA210Gr.C/SA210Gr.C	6
17	Supply pipes(right side)	Lower Drum stub	88.9x5.49/88.9x6.3	SA106Gr.C/SA106Gr.B	6

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Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00



Others					
18	Furnace right side wall panels(upper end)	Boiler side wall tubes(right)	51x5/51x5	SA210Gr.C/SA210Gr.C	4
19	Furnace left side wall panels(upper end)	Boiler side wall tubes(left)	51x5/51x5	SA210Gr.C/SA210Gr.C	4
Total Nos. of jts.					481

**Note:** Nos. of joints mentioned are tentative. Actual number of joints, in addition to above shall be in the scope of the Bidder at his cost.

## Section 4 Appendix- XI Envisaged H P Erection Joints in Pipe Lines

SL NO.	Circuit	PGMA	Drg. Description	Pipe size ODx(t)(mm)	matl. spec	Nos. of joints	Electrode spec
01	HP	19-850	HP ECO FEED PIPE	D88.9x5.49	SA106Gr.C+ SA106Gr.C	6	ER70SA1+E7018-1
02	HP	19-114	ECO COIL ASSY. + I/L & O/L HDR.	D38.1x4	SA21AGr.A1 + SA210Gr.A1	24	ER70SA1+E7018-1
03	HP	19-851	ECO LINK TO DRUM	D88.9x5.49	SA106Gr.C+ SA106Gr.C	6	ER70SA1+E7018-1
04	HP	12-850	SATURATED CONN. LINKS	D127x8	SA106Gr.C+ SA106Gr.C	8	ER70SA1+E7018-1
05	HP	12-851	MAIN STEAM LINE	D219.1x8.18	SA106Gr.C+ SA106Gr.C	6	ER70SA1+E7018-1
Total Nos. of jts.						<b>50</b>	

**Note:** Nos. of joints mentioned are tentative. Actual number of joints, in addition to above shall be in the scope of the Bidder at his cost.

We hereby accepted above  
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Seal & Signature of  
BHEL contracting authority



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure- C

### QUALIFYING REQUIREMENTS

- 1) Should have valid PAN/TAN number. Copy of PAN/TAN to be submitted.
- 2) Should have valid Service Tax number (PAN based). Copy of Certificate issued by Excise Dept.
- 3) Should have valid VAT/TIN No. if material is supplied/ consumed. Certificate Issued by sales Tax Dept. to be enclosed.
- 4) Self-declaration that he is not blacklisted/under hold from BHEL Jhansi or banned by any unit/region/office of BHEL
- 5) Self-Declaration that he should not be guilty by a Court of Law in India for any offence involving fraud, dishonesty and moral turpitude.
- 6) Should have independent valid ESI Code number.
- 7) **Average Financial Turnover:** Average Annual financial turnover from during the last 3 years, ending 31 March 2016 should be at least 57 Lakh. Duly audited Financial Statement/ Balance sheet / Certificate from CA to be submitted as a supporting document.
- 8) If all balance sheets are not available for all three years than the average shall be calculated by dividing the sum of turnover of submitted balance sheets by three.

### 9) **EXPERIENCE**

- A The bidders (Main contractor/Sub Contractor of main contractor) should have successfully completed erection work of pressure part, of any BHEL make boiler costing not less than Rs. 151.75lakh,(for pressure part only) . Provided the erection, commissioning and handing over of said boiler completed during last seven years ending 31.03.2017.The work order copy stating the work specification containing the pressure part erection needs to be also submitted.

**OR**

- B. Experience of having successfully completed similar work (Erection and Commissioning of coal fired boiler/ manufacturer of coal boiler who also does the erection and commissioning of the same/ reconditioning of coal boiler) during last 07 years ending 31.03.2017 should be either of the following: -

- i) Three similar completed works each costing not less than the amount equal to 75.87lakh.

**OR**

- ii) Two similar completed works each costing not less than the amount equal to 94.81 lakh.

**OR**

- iii) One similar completed works each costing not less than the amount equal to 151.75 lakh.

**NOTE:** The above-indicated works value at B (i), (ii) and (iii) above shall not include any Material /supply portion. The bidder should ensure that the value of works only is clearly demarkated in the work order

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure- C (contd.)

- 10) Documentary proof (successful completion certificate) for the experience as per clause No. 09 to be submitted along with Technical Bid. In case of experience in Private Sector, relevant TDS Certificate must be attached as evidence.
- 11) Documentary proof in support of above eligibility criteria along with EMD shall be submitted along with Techno Commercial Bid at Annexure I.
- 12) The documents required for legal Entities under whose name and style Contractor has participated in the tender are as follows:
  - (i) **Partnership Firm:** Partnership Deed registered at the office of Registrar of firms.
  - (ii) **Company:** Certified copy Memorandum of Association, Article of association and Incorporation Certificate.
  - (iii) **Society:** Registration certificate issued by Registrar of societies.
  - (iv) **Sole Proprietor-ship Firm:** Undertaking on oath (Rs. 100 stamp paper) as per format enclosed (Ref. P-69-70) that Proprietor is solely responsible for all rights and liabilities while working under the name and style of Sole Proprietorship firm namely ( \_\_\_\_\_ ) .

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(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Format- II for - AFFIDAVIT ON A NON JUDICIAL STAMP PAPER OF RS.100/- DULY NOTARIZED

I, \_\_\_\_\_ sole proprietor/partner/authorized signatory of M/s. \_\_\_\_\_ sole proprietorship/partnership firm/public/private limited company, having its principal place of business/ registered office at \_\_\_\_\_ (Full Address) do hereby solemnly affirm and declare as under:-

1. That I am the sole proprietor of M/s \_\_\_\_\_ /

**Or**

That ours is partnership firm having partners as under:-

Full Name of partners.

- (a)
- (b)
- (c)
- (d)

**Or**

That ours is a private limited/public limited company incorporated in terms of the provisions of the Companies Act,1956/Companies Act,2013.

(Delete which is not applicable while typing affidavit)

If proprietorship a registration certificate for the same/if partnership Firm, partnership deed is to be enclosed, if private limited/public limited company, Certificate of incorporation and Memorandum & Articles of association to be submitted. All the partners/ directors should sign the affidavit or the person authorized by all the partners or one of the Directors duly authorized by Board Resolution in case of Company can sign with authority letter from all the partners/or Board Resolution in case of Company is to be enclosed.

2. That I hereby confirm and declare that my/our firm/company M/s \_\_\_\_\_ is not blacklisted/delisted or debarred or on Holiday list with any company of Private /Public Ltd. or Government Company/Govt. deptt. from participating in the tender as on date.

3. That I hereby confirm and declare that my/our firm/company M/s \_\_\_\_\_ is /are not involved in any illegal activity and/or not charge sheeted for any criminal act of theft and/or diverting of fertilizers for industrial use or any other essential commodity during last five years.

4. That I further undertake that in case any of the facts sworn in as mentioned above and any particulars mentioned in our application is found other-wise or incorrect or false at any stage, my/our firm/ company shall stand debarred from the present and future tenders of the GNFC. Besides, GNFC shall be entitled to take all such actions as may be deemed fit including termination of contract, if awarded, without any claim for any compensation whatsoever on account of such premature closure of the contract.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

5. I know that to swear a false affidavit is a crime under the law and with such knowledge only I have swear this Affidavit.

(Signature of the Proprietor/ Managing Partner/Director with Seal)

DEPONENT

Verified at ॐ ॐ ॐ ॐ ॐ ॐ ॐ .... on ॐ ॐ ॐ ॐ ॐ ॐ that the contents of paras 1 to 5 of this affidavit are true and correct and no part of this is false and nothing material has been concealed or falsely stated therein.

(Signature of the Proprietor/ Managing Partner/ Director with Seal)

DEPONENT

(Signature & Seal of Notary)

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure D

## INSTRUCTIONS TO BIDDERS

### (For Two-Part Bid System)

Above tender is in two Bid System (Techno Commercial Bid & Price Bid).

1. The tender is to be submitted in two parts separately viz
  - a) Techno Commercial bid and
  - b) price/rate bid.
- a. Techno-Commercial Bid-**The Technical Bid Application (Annexure ó I,P-95-98) and its enclosures (along with the Contractor's Obligations, General Terms & Conditions and copies of qualifying requirements) must be submitted in one sealed envelope superscripted with "Tender for (details of tender as mentioned in page 2 of tender documents) TECHNO-COMMERCIAL BID". EMD/Cost of Tender Document or Documents required as per qualifying requirements must be enclosed.

**b. Price Bid-**The second envelope duly sealed should contain the price bid (Annexure-J,P-99-102) only super scribed as "(Name of Work as mentioned in page 2 of tender document) PRICE BID". Any other enclosures, which the bidder wishes to submit, must be enclosed with the Technical Bid only. The price bid envelope should contain the rates only. Offers not in line with the above procedure or quoted in any other format is liable to be rejected/bypassed.
2. Both the technical bid and price bid sealed envelopes must be again enclosed in a single envelope duly sealed and super scribed as "TENDER FOR TENDER NO (tender no as mentioned in page 2 of tender document) DUE DATE OF OPENING (date as mentioned in page 2 of tender documents)". The same should be dropped in the tender box kept in the CISF gate of Administrative Building, BHEL, Khailar, Jhansi, within the specified date and time by the representative of the bidder. It shall be the responsibility of bidder that the bid is dropped in tender box before the due date and time. BHEL shall not take any responsibility if the bid is not dropped in the tender box before due time and date.
3. All bidders can witness the opening of the Technical Bid. After evaluation of the Technical Bid which may involve visit to the bidder's place by authorized officials, price bids of only those bidders who are technically found suitable will be opened on a subsequent date which will be informed in advance to the concerned whose technical bid has been accepted, for witnessing the price bid opening.
4. All entries in the tender document should be in one ink. Correction/ over writing/ cuttings, etc. will not be Permitted. All the columns in the tender form should be filled without leaving blank in any page of the tender and **all the pages must be duly signed & stamped by the bidders before submission**. Non confirming to above may be liable for rejection of bid.

We hereby accepted above  
(signature & seal of bidder)

Seal & Signature of  
BHEL contracting authority



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure D (contd.)

5. Price quoted in Price Bid shall be inclusive of all taxes & duties, all statutory requirements/ liabilities like PF/ESI/Bonus/Min. wages etc. However, Service Tax shall be payable extra as applicable. The price / rate should be quoted in figures as well as in words.  
In case of discrepancy in figures and/ or words the decision shall be as per guidelines as referred in Annexure-K.
6. The quoted / accepted rate has to be kept firm for the entire contractual period including total extended period if any and no claim for revision of rates is allowed under any circumstances.
7. The contract will commence on the date as applicable against the contract and shall be valid as per the validity period of the contract. The contract can be extended further on mutual agreement on same terms, conditions and rates.
8. REVERSE AUCTION

BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit Process compliance form (to the designated service provider) as well as Online sealed bid in the Reverse Auction. Non-submission of Process compliance form or Online sealed bid by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).

As a reminder to the bidders, system will flash following message (in RED Color) during the course of online sealed bid

Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*

# Bharat Heavy Electricals Limited, Jhansi (U.P.)



Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure D (contd.)**

9. All the terms and conditions of the contract with respect to Taxes and Duties are subject to the new taxation laws introduced from time to time (eg. GST). The terms and conditions will be modified in accordance with the provisions of new laws (eg. GST).

## 10. QUANTITY VARIATION

The quantities given in the contract are indicative and may vary at item level (ref. Annex-B / Section-4/Appendix.-I) (both in plus side and minus side). The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities, as well as total quantity.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

# BLANK

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure E**

DATE: -----

## **TENDER EVALUATION CRITERIA**

The evaluation of the Tender will be carried out as follows:

1. BHEL officials may visit the bidders' office & their client's place to evaluate the capability and assess the performance.
2. Capability of the Contractor will be assessed on the basis of employees including supervisors on their rolls, machinery, equipment in its possession, previous track record, experience in other organizations, etc.
3. Price Bids will be opened or participation in Reverse auction will be allowed to only Techno-Commercially accepted bidders.
4. The contractor shall be awarded the work on overall L-1 basis if otherwise not specified in the tender document.
5. In case of tie between two or more than two bidders for L1 price. Bidders shall be called for discount on price offered in sealed envelope from all the L1 bidders. After discount more than one contractor quoted the L1 (lowest and technically accepted) rates, the work may be awarded through draw of lots.
6. In case of discrepancy in words and figures offered in price bid the decision shall be taken based on Annexure 5-Kö

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



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Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

# BLANK

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(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure F

## CONTRACTOR'S OBLIGATIONS

### A) CONTRACTUAL

#### Towards selection, control and supervision of employees

- 1) Contractor shall decide the number of employees to be deployed for execution of the work awarded to him and he or his authorized representative will be solely entitled to instruct such workers about the manner of carrying out the work as per the prescribed specifications (Annexure-B,P-7to 66)
- 2) Contractor shall supervise the work allotted to him and to be carried out by his employees.
- 3) Contractor will ensure that the job is executed through his employees on his rolls and under no circumstances the contractor will deploy any casual employee to carry out the job nor shall sub-contract the job without prior written permission.
- 3.1) Aadhar card is mandatory for contract labours for making of their gate pass for entry in BHEL premises.
- 3.2) Supervisors of contracting firms who sign on behalf of contractors must have Power of Attorney to the same effect.
- 3.3) Contractor are advised that contract labours must be employed without any discrimination on caste or creed basis
- 4) **Age of workers:** The contractor shall not employ any person who has not completed his 18 years. Also age of worker deployed should not exceed 60 years.
- 5) Contractor to ensure that the employees deployed in the premises of BHEL are physically and mentally fit and do not have any criminal record. Such employees should possess requisite skill, proficiency, qualification, experience etc. acceptable to concerned department.
- 6) **Discipline:** The Contractor shall be responsible for the discipline of his own employees deployed under the contract. In case of any loss to the BHEL Jhansi on account of indiscipline of employee then such loss shall be assessed and recovered from the running bills of the contractor or from the security deposit.
- 7) The contractor, on advice of authorized BHEL official, shall immediately remove any person employed by him, who may in the opinion of such authorized BHEL official is involved in misconduct. Such person shall not be re-employed by the contractor without prior permission.
- 8) Contractor will keep watch on his employees and he will be liable for any pilferage / loss to BHEL due to acts of omission and commission by his employees. Similarly, liability for any compensation to outsiders on account of any act of omission and commission by the employees deployed by the contractor shall lie exclusively with him.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure F (contd.)**

- 9) Contractor to ensure compliance of the instructions contained in safety guidelines issued by Safety Dept. (HSE) of BHEL, Jhansi (Refer Section-1, Clause 1.16, SAFETY AND ENVIRONMENT OBLIGATIONS) (Same can be downloaded from BHEL Jhansi website. The contractor has to ensure that all precautions are taken for safety of his employees and Equipmentø.)
- 10) **Record Keeping:** Contractor to maintain appropriate records of his employees deployed to carry out the job(s). Contractor shall maintain neatly written, complete and legible registers, records, reports and returns for inspection by various authorities at short notice.
- 11) **Uniform:** The contractor shall be responsible to provide to his workers uniform and safety gears such as shoes, helmet and PPE. The uniform should have logo of the contractorø firm/company, which shall be affixed by the contract labor on the left side of his pocket. The uniform shall be kept in neat, tidy and wearable condition.
- 12) In the event of termination of contract for any reason whatsoever, the contractor shall withdraw all his employees from the establishment of BHEL. In case contractor decides to terminate services of his employees, they themselves should settle all terminal dues required.
- 13) Tools, tackles and materials: Contractor shall provide to his employees all tools, tackles, material, equipmentø as specified in contract and maintain the same to carry out the job under the contract at his risk and cost. BHEL shall not have any liability for these tools, tackles, equipmentø or material.

## **B) Towards statutory liability**

1. As mentioned in the terms and conditions enclosed as Annexure -Gø of this contract.
2. Contractor shall indemnify BHEL against all claims by statutory authorities and losses under various Labour Laws, statutes or any civil or criminal law in connection with employees deployed by him.
3. Contractor shall be responsible for making payment of wages preferably through bank.
4. The changes in the statutory liabilities as and when done by respective government/ agency shall be applicable to the contract labours deployed under the contract.
5. The undertaking should be submitted with every running bill towards the payment of wages to their labor/staff against the contract by the contractor.

## **C) Towards Finance**

Contractor to arrange his own finance for carrying out the job including supply of tools, tackles and equipmentø, if required, to his employees, materials, payment of wages to his employees etc. Rates to be as per price bid.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure G**

## **GENERAL TERMS & CONDITIONS FOR CONTRACT**

### **1 SECURITY DEPOSIT**

The total amount of Security Deposit will be 5% of the contract value, valid up to the period of contract which can be converted in to part of PBG(Ref. Annex- G, Clause 1.2). EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.

- 1.1 The bidder shall submit the Performance Security Deposit within 30 days of awarding of contract/ issue of Letter of Intent as following: -
- Pay Order, Demand Draft drawn in favor of M/s Bharat Heavy Electricals Limited, JHANSI valid for the period as aforesaid.
  - Local Cheque of scheduled banks, subject to realization.
  - Securities available from Post Offices such as NSC, Kisan Vikas Patras etc. (Certificates to be held in the name of bidder furnishing the security and duly pledged in favor of BHEL and discharged on the back)
  - Bank Guarantee from scheduled Banks/Public Financial Institutions as defined in Companies Act. The Bank Guarantee format should have the approval of BHEL.
  - Fixed Deposit Receipt (FDR) issued by Scheduled Banks/Public Financial Institutions as defined in Company's Act. The FDR should be in the name of bidder; A/C BHEL JHANSI duly discharged on the back.
  - The PSD can also be recovered at the rate of 10% from running bills. However in such cases at least 50% of the PSD should be deposited before the start of work and balance 50% may be recovered from running bills.
  - All deposits in the form of bank instruments shall be caused to be submitted preferably through the issuing bank only and deposited with the Finance Deptt. of BHEL under receipt in duplicate with copy of receipt submitted to department.
  - The Performance Security Deposit shall not carry any interest.
  - Security Deposited shall be released to the contractor upon fulfillment of contractual obligations as per terms of the contract and in addition to fulfillment of Annexure-G Clause 1.2.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure G (contd.)**

Stamp duty applicable as per Indian Stamp Act 1899 is as follows:-

Sl.No.	Performance Security Deposit	Stamp Duty Applicable
1	Pay Order, Demand Draft, Local Cheque of scheduled banks	Rs 125/- per Rs.1000
2	Securities available from Post Offices such as NSC, Kisan VikasPatras etc. and Fixed Deposit Receipt (FDR) issued by Scheduled Banks/Public Financial Institutions	Rs 70/- per Rs.1000
3	Bank Guarantee from scheduled Banks/Public Financial Institutions	Rs.5/- per Rs.1000 limited to Rs.10,000/-

## 1.2 PERFORMANCE BANK GUARANTEE

The bidder shall submit Bank Guarantee of 10% of contract value at the time of handover/successful commissioning of the project (07 Months). Which will be valid for 12 months & 03 months of claim period. However, the bidder will have option of converting the security deposit to Performance Bank Guarantee in which case he has to submit additional B.G of 5% separately

## 2 LABOUR LICENCE AND OTHER REQUIREMENTS: -

### (a) Labor License

- i) Contractor shall within 15 days of commencement/completion of work-order submit Form VI-A to RLC office. The first & final bill shall be processed only on clearance regarding submission of Form VI-A by contractor.
- ii) Contractor shall apply for Form V to BHEL for obtaining labour license (if the number of workers deployed is more than 19) from appropriate government (as on date Central Government) and submit the same within one month from the date of award of the contract. Contractor shall possess separate valid Labour license from appropriate government for each contract in line with CL(R&A) Act before deploying their employees.
- iii) In case the number of employee desired to be deployed by the contractor against the contract during execution exceeds the number of employees allowed in the license then the contractor shall obtain prior amended valid labour license for the contract for the requisite number of employees.
- iv) The contractor cannot deploy the contract worker without obtaining requisite Labour licence from the Appropriate Government (Central Govt.) authority. Till then the contractor shall be allowed to deploy maximum 19 workers or the numbers required whichever is less.

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BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

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**Annexure G (contd.)**

## (b) Personal Accident Insurance Policy

- i) Contractor shall buy Personal Accident Insurance (24x7) policy for all of his employees deployed under the contract and documents towards this shall be submitted before the start of work. No employee should enter the BHEL factory premises or working area without insurance cover as stated below.
- ii) The policy should cover the accidental death of workers for 24 Hrs for all the seven days of week.
- iii) The policy should be purchased from Govt. under taking company.
- iv) The coverage shall be of Rs. 5 lakhs per individual. The sum assured (Rs. 5 lakhs) shall become payable to the nominee/legal heir in the event of death due to accident of insured person.
- v) In the event of death of any contract worker deployed by the contractor without proper insurance cover, the contractor shall be liable to pay Rs. 5 lakhs to the nominee/ legal heir of such deceased contract worker.

## 3 APPOINTMENT AND ENTRY IN FACTORY PREMISES:

3.1. The contractor shall submit the following to HR, contracting department and CISF

- (a) The details of the worker proposed to be deployed.
  - (b) Character certificate issued by CEO of bidder's company /District Magistrate's Office or Proof of remittance of fees for character certificate at District Magistrate's Office. Further he should submit the character certificate within 15 days failing which he will be discontinued.
  - (c) Copy of employment card issued by contractor to his own worker. Sub Annexure 02 (P-92)
- 3.2 After submission of documents the contractor shall issue photo identity card to the employee and submit to HR department. This identity card shall be forwarded by HR department to CISF, which shall then authorize the employee to enter the factory premises initially for a period of one month.
- 3.3 The photo identity card shall have to be revalidated every month on last working day of the month or any other date fixed to do so. In absence of such revalidation, duly forwarded by HR department, CISF shall not allow any employee to enter the premises of BHEL Jhansi.
- 3.4 The contractor shall maintain a register of persons employed by him in the format prescribed under Rule 75 of Contract Labour (R&A) Central Rules. A copy of this format is annexed as *annexure 03(P-93)*.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



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## Annexure G (contd.)

3.5 The entry of contractor's workers in factory premise shall be through biometric/smart cards. The contractor shall ensure issuance of biometric/smart card through time office section of BHEL Jhansi. After the conclusion of works contract, the contractor shall collect these biometric cards from his workers and submit the same to Time Office section through contracting department. In event of any contract worker leaving the services before completion of the contract, the contractor shall ensure return of biometric card to BHEL Jhansi. In case of non-return of biometric card, Rs. 200/- (Rupees two hundred only) per card shall be deducted from the security deposit of the contractor.

### 4. ATTENDANCE AND PAYMENT OF WAGES

- Contractor should maintain attendance register by recording daily attendance duly signed by both contractor and contract worker in form 16 of muster roll.
- Statement of Wages of labours deployed by him in form 17 under the contract, PF/ESI no., statutory deductions etc., in the format as in Sub Annexure 04(P-94) annexed to these terms and conditions to be maintained (Form XVII of Contract Labour (R&A) Rules)
- The contractor shall pay minimum wages as applicable of the Appropriate Government.
- The contractor shall issue pay slips to his workers, for the month deployed for undertaking activities under the contract, at least a day prior to disbursement of wages.
- Contractor shall be responsible for making payment of wages preferably through bank. The payment of wages to the employees shall not be subject to payment against the bills by BHEL.
- The contractor shall remit the cheques favoring RPFC and ESI Kanpur with the appropriate banks with such period as stipulated under relevant provisions. Last date for remittance of PF is 15<sup>th</sup> and that in case of ESI is 21<sup>st</sup> of each month.
- The undertaking should be submitted with every running bill towards the payment of wages to their labor/staff against the contract by the contractor.

### 5 Payment of bills

The payment of bills shall be done as per contract on completion of work/stage and duly certified by agency as defined in contract. The contractor's bills should be accompanied with the following.

- Copy of Measurement Book entries/Statement of work done by the Contractor
- Statement of Minimum Wages of employees deployed by him under the contract, PF/ESI no., statutory deductions etc., in the format as in Sub Annexure 04(P-94) annexed to these terms and conditions. (Form XVII of Contract Labour (R&A) Rules)
- PF and ESI challans for previous month- separate for concerned contract. Print of online challan along with ECR/ Contribution History of contributing contract workers for PF/ESI duly certified by the contractor.
- Wage payment sheet for the bill period as per Sub Annexure 04(P-94).
- Copy of Form-5 and Form-10 (PF monthly returns) submitted by contractor to RPFC for billing month.

*We hereby accepted above  
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**Annexure G (contd.)**

- f) Copy of Form 12A-regarding PF remittance
- g) List of CL covered under accident insurance policy
- h) Statement of material supplied by the contractor if any
- i) Copy of Labour License if increase in no. of employees deployed against Work Order if applicable.
- j) Copy of Challan of previous service tax paid
- k) Proof of Personal Accident Insurance Policy along with bill

The executing department shall pass the bills of the contractor, after thorough checking, along with requisite documents the bill in original and Service Tax Challan & documents as above forward them to Finance through HR department.

After checking the Labour Laws compliances with respect to the concerned contract, HR department after retaining copies of PF and ESI Challans and wage payment sheet pertaining to the relevant months, annexure IV etc., will forward the bill along with requisite documents (the bill in original and Service Tax Challan) to finance department. Finance department shall on satisfactory compliances of stamp duty charges, service tax and security deposit amount, make payment as per contract.

Finance department shall, on satisfactory compliance, and after deduction on account of Security deposit amount and TDS will make payment to the contractor.

## **7.0 Provident Fund**

- a. The contractor should get independent EPF code before deployment of his contract worker against work contract.
- b. The Contractor should allot PF account number and get the nomination form, duly filled in, from each worker deployed by him at the time of joining. Each worker must have his/her Provident Fund KYC completed and his respective UAN must have been allocated
- c. In case the worker already has PF/pension account number, allotted to him, previously, then the contractor shall get the transfer form filled up at the time of joining and send to the office of concerned Regional Provident Fund Commissioner.
- d. After termination of contract the contractor shall provide due assistance to the employee for withdrawal of PF/pension amount, when due.
- e. The Contractor shall liaison with the PF officials to get the annual PF slips and distribute amongst his own workers. Security deposit shall be released only after submission of PF slips of workers.

*We hereby accepted above  
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*Seal & Signature of  
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# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

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**Annexure G (contd.)**

## 7.1 PF CONTRIBUTION:

Employee's Contribution	Employer's Contribution		
12% of Normal wages paid	PF Contribution		3.67%
As applicable by respective Govt/ Agency.(Current statutory wage ceiling - Rs.15000/-month on Employee's / Employers Contribution).	Insp/ Admn Charges		0.85%
	(subject to minimum Rs. 500/- perchallan)		
	Admn/ Insp Charges		0.50%
	Pension Fund		8.33%
	EDLI Charges		0.01%
	(subject to minimum Rs. 200/- per challan)		
	<b>Total</b>		<b>13.36%</b>

7.2 The Contractor shall submit annual returns in Form-6A and Form 3A, prescribed under statutory EPF scheme, 1952, in respect of each worker deployed by him with a copy to HR.

## 8 Employees State Insurance

- a) The Contractor should allot ESI account number and get the nomination form, duly filled in, from each employee deployed by him at the time of joining.
- b) At the time of joining the contractor shall get the self/family registration form filled by the workers and submit to the local ESI office.
- c) The contractor shall facilitate collection of issued ESI cards by his worker.
- d). As applicable by Government/ respective agency (existing wage limit for coverage under the Act is Rs. 15,000/- per month w.e.f. 01/05/2010).

### 8.1 ESI CONTRIBUTION: -

<u>Employee's Contribution</u>	<u>Employer Contribution</u>
1.75% of gross wages	4.75% of gross wages

8.2 The Contractor shall submit annual returns in Form-6 prescribed under ESI Act, deployed by him with a copy to HR and finance department

*We hereby accepted above  
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**Annexure G (contd.)**

- 8.3 The Contractor shall produce the following Registers and forms as per Contract Labour (R & A) Rules 1971 for verification by the Executing Officer of the company :-
- Form XIII - Register of Workmen employed by contractor (Rule 75)
  - Form XIV - Employment Card issued by contractor (Rule 76)
  - Form XVI - Muster Roll 78(1) (a) (i)
  - Form XVII - Register of Wages (Rule 78 (1) (a) (i))
  - Form XVIII - Register of wages-cum Muster Roll (in case of weekly payment)
  - Form XIX - Wage Slip (Rule 78)(1) (b)
  - Form XX - Register of deduction for damages of loss (Rule (78)( 1) (a) (ii))
  - Form XXI - Register of fines (Rule 78) (1) (a) (ii)
  - Form XXII - Register of advance (Rule 78) (1) (a) (ii)
  - Form XXIII - Register of overtime (Rule 78) (1) (a) (iii)
  - Form XXIV - Return to be sent by the contractor to licensing officer Rule 82)
  - Form XII ó Register of Adult Workers
  - Form XIV ó Leave with wage register
  - Form XV ó Leave book

8.4 Contractor shall fully abide by the provisions of various applicable labour Act/laws and all other enactments as applicable for such contracts.

## 9.0 Bonus

The contractor shall be liable to pay statutory bonus under payment of Bonus Act, 1965 and submit proof of disbursement along with received copy of Form-D to L.E.O Office.

## 10.0 LEAVE WITH WAGES TO THEIR EMPLOYEES :-

10.1 Guidelines as per factories Act 1948 & U P factories Rules 1950 should be strictly observed with regard to crediting / availing of leave of absence. Register as prescribed under the said rules should be maintained by the contractor.

10.2 The contractor will give three paid National Holidays to his employees.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure G (contd.)**

## 11.0 INDEMNITY BOND / COMPLIANCE OF LEGAL PROVISION

- a. BHEL Jhansi shall not be liable for any compensation whatsoever in the case of accident / injury to the person employed by the contractor coming in the premises of BHEL Jhansi. Contractor shall pay all claims / compensation / damages / penalty / fine or any amount payable to the individual / authorities payable due to accident / injury to the person employed by the Contractor.
- b. That BHEL-Jhansi will not, in any manner be responsible for any act, omission or commission of the workers engaged by contractor and no claim in this respect will lie against BHEL-Jhansi. If any such claim is made against BHEL-Jhansi by any worker or his heirs engaged/employed by the contractor, which BHEL-Jhansi is obliged to discharge by virtue of any statute or any provision of law and rules due to mere fact of the workers of the contractor working at BHEL- Jhansi premises or otherwise, the contractor will be liable to indemnify/reimburse BHEL-Jhansi all the money paid in addition to the expenses incurred by him. The contractor must indemnify and keep indemnified BHEL- Jhansi against all losses and claims for injuries or damage to any person or property whatsoever which may arise of or in course of the operation of the contract and against all claims, demands, proceedings, damages, cost, charges and expenses whatsoever in respect of contingencies depicted herein shall be deemed as expected risk.
- c. The Contractor has to make an agreement with BHEL in the format prescribed only on Rs. 100/- Non-Judicial Stamp Paper before starting of work.

## 12.0 OTHER GENERAL TERMS AND CONDITIONS :-

### Legal compliance

- a) The contractor will comply with all the provisions regarding licensing, welfare and health, procedures, maintenance of various records and registers etc., as provided under the contract Labour (Regulation & abolition) Act 1970, rules amendments, orders, notifications there under issued by the Appropriate Government from time to time. For non-compliance of any provisions, statutory compliance under law, the contractor shall be responsible for penalties levied by the appropriate authority under the Act. The contractor shall also be liable to comply with all other Labour and Industrial Laws and such other acts and Statutes (including Factories Act, Payment of Bonus Act, minimum wages Act, etc.). Depositing of ESI, PF contribution as applicable is the responsibility of the contractor. For any default in compliance, the contractor shall be held responsible.
- b) The work shall be supervised by the contractor or through the authorized representatives on day to day basis.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure G (contd.)**

- c) The Contractor shall compensate BHEL for any loss or damage to the plant/property, material of BHEL due to his workmen/representatives negligence or otherwise during execution of work.
- d) In the event of contractor abandoning the work or BHEL revoking the contract BHEL shall have a right to get incomplete work completed at contractor's risk and cost. BHEL shall have a right to terminate the contract at any time without assigning any reason thereof.
- e) Security deposit will be released on submission of following certificates from departments mentioned as under:-
  - i) No issues are pending after the date of Completion of work and certification of payment of minimum wages to employees from contracting department.
  - ii) Certificate of compliance of labour laws from Contracting Deptt and verified by HR department.
  - iii) Certificate of payment of Bonus by Contracting Deptt and verified by HR Department
  - iv) No dues certificate from contractor regarding Service Tax payment & any other dues liable to be remitted by contractor under Financial Laws to Finance department.
  - v) In case of non-satisfactory performance of the contract, BHEL shall have a right of forfeiting the security deposit. In case of any dispute decision of concerned Head of the Department will be final

**13.0 Risk & Cost:** If the Contractor fails to perform/execute the work within time or fail to perform as per the specification prescribed in tender or acted in violation to prescribed terms and conditions, BHEL-Jhansi shall be entitled to terminate the Contract and take recourse to alternate source to get the work done at the risk and cost of the Contractor. In such case Contractor shall make good the loss to BHEL. BHEL shall be entitled to recover the difference in cost, if any incurred by BHEL due to getting the work done from alternate source. However, in such case Contractor shall not be entitled for any gain.

## **14.0 SETTLEMENT OF DISPUTE/JURISDICTION/ARBITRATION ETC. :-**

BHEL Reserve the rights to evaluate the bid as per BHEL policy and Govt. guidelines including CVC / Vigilance guidelines by the tender committee duly constituted by BHEL Management. Dispute arises if any in execution of the project the decision of BHEL, Jhansi Management or a committee duly approved by competent authority shall be final and binding to bidder.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure G (contd.)

### 15.0 CONFIDENTIALITY

The parties agree & acknowledge that in the course of their discussions and interaction, BHEL may disclose information of confidential proprietary nature relating to its business, products, know-how, technology, customers, employees and financial to the contractor. Such information shall be considered as confidential. The contract agrees to keep it confidential & secret at all times and not directly or indirectly disclose to any party other than its employees and authorised personnel strictly on a need know basis, without the prior written permission of BHEL.

### 16.0 TERMINATION

BHEL reserves the right to terminate contract awarded for any contravention of statutory provision or any other reasons without assigning any explanation or notice to the contractor.

### 17.0 SUSPENSION

BHEL reserves the right to suspend performance of any or all of its obligations under the contract. Such notice shall specify the obligation of which performance is to be suspended, the effective date of the suspension and the reasons therefore. The Contractor shall thereupon suspend performance of such obligations until ordered in writing to resume such performance by the same authority that ordered for suspension.

### 18.0 JURISDICTION

Any matter of dispute arising out of or in connection with this contract shall be under jurisdiction of Jhansi Court only.

### 19.0 ARBITRATION

All disputes arising in connection with the contract shall be settled by mutual consultation. If no agreement is reached the dispute shall be settled in accordance with Arbitration and conciliation Act, 1996 and the rules made there under. The dispute shall be referred for arbitration to any arbitrator to be appointed by the Head of the unit (BHEL Jhansi).

The award of the arbitrator shall be final and binding on both the parties. The venue of the Arbitration shall be at Jhansi in India. The Award to be given by the Arbitration shall be a speaking award. All questions, disputes, differences arising under, out of or in connection with this contract shall be to the exclusive jurisdiction of Jhansi court

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure G (contd.)**

## 20.0 L.D Clause

20.1 Time is the essence of the Contract. If the contractor fails to maintain the required progress of work as per contract or to complete the work and clear the site within the time prescribed by the Contract (07 months-Contractual Completion period), he shall without prejudice to any other right or remedy of BHEL on account of such breach, the contractor agrees to pay compensation (penalty) to BHEL. The above agreed compensation shall be a penalty equivalent to 0.5 % ( half percent) of the total contract price (Irrespective of lump sum or item-rate contract or others) excluding elements of service Tax and Sales Tax (if quoted by the contractor separately) per week or part thereof of the delay subject to a maximum of 10% (ten percent) of the total executed contract price including elements of taxes, duties etc.

20.2 BHEL shall deduct the amount of such compensation from any money due or which may become due to the contractor and/or recover such compensation from the bank guarantees / security deposit of the contractor. To be entitled to impose such compensation, BHEL will not be required to prove that he has incurred such amount as actual damage

## 21.0 FORCE MAJEURE

21.1 Acts of God, acts of any Government, war, sabotage, riots, civil commotion, police action, revolution, flood, fire, cyclone, earthquake, epidemic and other similar cause over which the contractor has no control.

21.2 If the contractor suffers delay in the due execution of the contractual obligation due to delays caused for force majeure as defined above the agreed time of completion of the job covered by this contract or the obligations 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 the causes of delay and contractor shall not be eligible for any compensation.

## 22.0 PERFORMANCE GUARANTEE FOR WORKMANSHIP

22.1 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 commencement of guarantee period as defined in general Conditions(Annex.-G, Cl. 1.2) of Contract, for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. 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 the Guarantee money.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure G (contd.)

- 22.2 BHEL shall release the guarantee money subject to the following
- i) Contractor has submitted ~~Final Bill~~
  - ii) Guarantee period as per contract has expired
  - iii) Contractor has furnished ~~No Claim Certificate~~ in specified format
  - iv) BHEL Site Engineer/Construction Manager has furnished the ~~No Demand Certificate~~ in specified format.

Contractor has carried out the work required to be carried out by him during the period of Guarantee and all expenses incurred by BHEL on carrying out such works is included for adjustment from the Guarantee money refundable

*We hereby accepted above  
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*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services  
Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure-G, Sub-Annexure: 01

### गेट पास आवेदन

(ठेकेदार के सविदा श्रमिकों हेतु)

१. ठेकेदार का नाम .....
२. कार्य का स्वरूप .....
३. कार्य आदेश सं./दिनांक .....
४. कार्य आदेश अवधि .....
५. कार्य स्थल (विभाग एवं कोड)  एवं
६. गेट का नाम जिससे प्रवेश/उद्दिगम होगा .....
७. कर्मचारी की ड्यूटी का समय .....

### सविदा श्रमिक का व्यक्तिगत विवरण

(एक से अधिक सविदा श्रमिकों के आवेदन हेतु अलग से सूची संलग्न करें)  
 सविदा श्रमिक का नाम..... जन्म तिथि/आयु.....  
 पिता का नाम.....पहचान चिन्ह.....  
 स्थाई पता..... वर्तमान पता.....  
 शैक्षिक योग्यता.....  
 तकनीकी योग्यता.....  
 आधार न0.....मोबाइल न0.....

सविदा श्रमिक का  
हस्ताक्षर युक्त फोटो  
ठेकेदार द्वारा सत्यापित)

भविष्य निधि खाता संख्या  कर्मचारी रा.बी. निगम खाता संख्या

### (सविदा श्रमिक के हस्ताक्षर/दिनांक)

कारखाना प्रबन्धक/शॉप प्रभारी के हस्ताक्षर  ठेकेदार या उसके सुपरवाइजर के हस्ताक्षर   
 (दिनांक एवं मोहर सहित) (दिनांक एवं मोहर सहित)  
 आर्बिट्रल गेट पास सं0.....दिनांक.....हस्ताक्षर आर्बिट्रलकर्ता.....  
 विभागाध्यक्ष-मा.सं./सं.श्र.प्र. प्रभारी के हस्ताक्षर   
 (दिनांक एवं मोहर सहित)

### के0 ओ0 सु0 ब0 द्वारा भरने के लिए

पासों के विचाराधीन रखने तक.....से.....तक श्री.....  
 नियोजक.....को कारखाने में प्रवेश हेतु अनुमति दी जाती है।  
 पास संख्या.....जारी होने की तिथि से दिनांक.....तक ही वैध होगी तथा प्रत्येक माह/तीन दिन के  
 परचात् २५ तारीख को के0 ओ0 सु0 ब0 बल द्वारा नवीनीकृत किया जाएगा।

हस्ताक्षर उप कमान्डेंट के0 ओ0 सु0 ब0 इकाई  
 बी०एच०ई०एल० ड्राँसी (उ०प्र०)

We hereby accepted above  
(signature & seal of bidder)

Seal & Signature of  
BHEL contracting authority



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure-G, Sub Annexure 02**

FORM XIV

( See Rule 76 )

## Employment Card

Name and address of Contractor : .....

Nature of work and location of work : .....

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

Name and address of Principal Employer : .....

1. Name of the workmen : .....

2. Serial No. in the register of workmen employed : .....

3. Nature of employment/designation : .....

4. Wage rate with particulars of unit, in case of piece-work. : .....

5. Wage period : .....

6. Tenure of employment : .....

Remarks. : .....

*Signature of contractor.*

**We hereby accepted above  
(signature & seal of bidder)**

**Seal & Signature of  
BHEL contracting authority**

# Bharat Heavy Electricals Limited, Jhansi (U.P.)



Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure-G Sub Annexure 03**

## FORM XIII

[ See Rule 75]

Register of workmen employed by contractor

Name and address of contractor : .....

Name and location of work : .....

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

Name and address of Principal Employer : .....

Sl No.	Name and surname of workman	Age and Sex	Father's/ Husband's name	Nature of employment/ designation	Permanent home address of workman (village and tensil) and taluk and district	Local address	Date of commencement of employment	Signature or thumb impression of workman	Date of termination of employment	Reasons for termination	Remarks
1	2	3	4	5	6	7	8	9	10	11	12

Note: Register of wages as per form XVII is mandatory to be maintained for each month

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*





# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure H**

DATE: -----

## MEASUREMENT OF WORK AND PAYMENTS THEREOF.

1. The designated officer of the Unit will periodically inspect the Work being provided by the contractor and find out deficiencies. The contractor shall rectify the same immediately to the satisfaction of the designated officer.
2. Payment towards work satisfactorily executed will be made to the contractor on the basis of following: -

Sl.No	JOB/ACTIVITY	UNIT OF MEASUREMENT	QUANTUM OF WORK
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

- 3) Payments will be made to the contractor on the basis of work carried out by him.
- 4) All payments will be subject to deduction of income tax at source as per Income Tax as per the applicable Rules.
- 5) Measurement Book to be maintained for the work carried out periodically by the contractor & the same shall be verified by BHEL official, nominated for the same.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

# BLANK

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure- I**

# TECHNICAL BID

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

Annexure- I

## TECHNICAL BID

### PROFORMA FOR SUBMITTING TECHNICAL BID FOR -----

(BIDDER MUST TICK THE OPTION WHERE AVAILABLE IN BOX)

#### (A) Essential Documents Required

1. Name of the firm: -----

(Documents as per clause 12 of Annexure C to be attached)

2. Name of the Proprietor/Partners : \_\_\_\_\_

3. Address and Contact Numbers : \_\_\_\_\_

4. ESI Code Number : \_\_\_\_\_

Copy of the ESI Certificate

ENCLOSED

NOT ENCLOSED

5. PAN/TAN Number : \_\_\_\_\_

6. Service Tax Number(PAN Based) : \_\_\_\_\_

7. VAT/TIN Number: \_\_\_\_\_  
Copy of Certificate

ENCLOSED

NOT ENCLOSED

(To be submitted only in case where material transaction is involved)

8. Audited financial statement/CA Certificate as per tender

ENCLOSED

NOT ENCLOSED

9. Experience Certificate:

ENCLOSED

NOT ENCLOSED

(Along with necessary enclosures as per Annexure C clause 9 page-67 to be submitted)

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure- I (contd.)

10. No. of Workers including Supervisors on the rolls of the firm : \_\_\_\_\_
11. Earnest Money Deposit : Rs. \_\_\_\_\_  
a) D.D. Number & Date : \_\_\_\_\_ Date \_\_\_\_\_  
b) Drawn on (Bank) : \_\_\_\_\_
12. Any other relevant information: \_\_\_\_\_  
-----
13. Tender Cost :Rs. \_\_\_\_\_  
D.D. No. /Receipt No : \_\_\_\_\_  CONFIRMED  NOT CONFIRMED
14. Validity of offer : 120 Days from the date of tender Opening
15. Blank Price bid format (Page No. 100) :  ENCLOSED  NOT ENCLOSED
16. PF registration certificate (if exempted submit exemption proof) PF registration code : \_\_\_\_\_  
Attach Copy of the PF registration  ENCLOSED  NOT ENCLOSED
17. ESI registration certificate: (if exempted submit exemption proof)  
ESI registration code : \_\_\_\_\_  
Attach Copy of ESI registration  ENCLOSED  NOT ENCLOSED
- (B) Desirable:**
1. Income Tax return last 3 yrs. :  ENCLOSED  NOT ENCLOSED
2. Acceptance of RA :  ENCLOSED  NOT ENCLOSED
3. Sample QAP  RECEIVED  NOT RECEIVED

**We will fulfill all the obligations of the contractor and abide by the Terms & Conditions mentioned in the tender**

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*

# Bharat Heavy Electricals Limited, Jhansi (U.P.)



Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

**Annexure- I (contd.)**

<b>BLANK PRICED BID(Only for reference purpose)</b>							
Sl. No.	Brief Des.	Description of Work	% Allocation (Item-wise)	Unit of Measurement	Quantum of Work	Rate per Unit (in Rs.)	Amount (in Rs.)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H=F*G)
1	PP	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Pressure parts etc as per tender specifications	8.12	KG	46700	XXXXX	XXXXX
2	NPP	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Non pressure parts etc as per tender specifications	18.32	KG	124100	XXXXX	XXXXX
3a	Structure	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Structures as per tender specifications	20.20	KG	153300	XXXXX	XXXXX
3b	BOI Mech.	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of BOI Mech as per tender specifications	17.30	KG	117200	XXXXX	XXXXX
4a	ESP	RATE in Rupees per KG for complete scope of work as per tender specification for ESP as per specifications.	16.51	KG	111841	XXXXX	XXXXX
4b	Chimney	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over Chimney as per tender specifications	3.83	KG	29082	XXXXX	XXXXX
4c	Fans	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over Fans as per tender specifications	2.39	KG	16200	XXXXX	XXXXX
5	C&I, General Ele.	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of C&I, General Ele. as per tender specifications	5.05	KG	33000	XXXXX	XXXXX
6		Painting of total Surface area as per drawing/ design	3.69	Sq.Meter	3500	XXXXX	XXXXX
7		All Laisioning work to complete the statutory requirement for commissioning & operation of new boiler	4.59	JOB	1	XXXXX	XXXXX
<b>GROSS TOTAL</b>			<b>100.00</b>				<b>#####</b>
		<b>Total price in words:</b>					

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

# PRICE BID

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure J

### NOTE:

#### (1) Instruction to bidder regarding filling of the price bid.

- (a) The price bid (PDF Format) at page no. 103 attached alongside is not to be filled up Manually.
- (b) The price is to be auto filled up by using an excel version of the price bid format, which can be obtained from BHEL tender website ([www.bhel.com](http://www.bhel.com)) OR sending a mail to [ykdhingra@bheljhs.co.in](mailto:ykdhingra@bheljhs.co.in) / [sjc@bheljhs.co.in](mailto:sjc@bheljhs.co.in) for sending the request for excel format of price bid as attachment of the reply to the request mail.
- (c) After obtaining the excel version of the PRICE BID FORMAT, the bidder shall fill only the total value in the box highlighted in yellow (see the PDF Format, the same box will be there in the EXCEL Format)
- (d) The bidder should submit the signed print out hard copy of price bid generated after quoting the total price in excel format of price bid with populated data. (Data will be Automatically populated after quoting the total price in the box highlighted in yellow colour of excel format) indicated with ö ##### ö in Annexure-J/Price Bid.
- (e) The bidder must write the total price offered in words also in the indicated space of the price bid format.
- (f) **The bidder required to quote the total price only, in excel format of the price bid as highlighted field with yellow colour.**

- (2) Technical bid and price bid should be submitted in separate sealed envelopes. In case the bids are found in one single envelope then the bids are liable to be rejected.
- (3) The quantity indicated above are tentative and are liable to vary depending upon the site requirement. The contractor has to erect/ commission all the items indicated by BHEL for achieving the milestones and completion of work
- (4) Evaluation of bids shall be done on total price against this rate schedule/Bill of Quantity.

**Note:** In the Excel format of the price bid, the boxes containingö XXXX ö symbols will Automatically get populated once the total price in the box highlighted in yellow color (Indicated with ö ##### ö symbol) is filled by the bidder.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*

# Bharat Heavy Electricals Limited, Jhansi (U.P.)



Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure J (contd.)

### PRICE BID

Sl. No.	Brief Des.	Description of Work	% Allocation (Item-wise)	Unit of Measurement	Quantum of Work	Rate per Unit (in Rs.)	Amount (in Rs.)
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H=F*G)
1	PP	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Pressure parts etc as per tender specifications	8.12	KG	46700	XXXXX	XXXXX
2	NPP	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Non pressure parts etc as per tender specifications	18.32	KG	124100	XXXXX	XXXXX
3a	Structure	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of Structures as per tender specifications	20.20	KG	153300	XXXXX	XXXXX
3b	BOI Mech.	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of BOI Mech as per tender specifications	17.30	KG	117200	XXXXX	XXXXX
4a	ESP	RATE in Rupees per KG for complete scope of work as per tender specification for ESP as per specifications.	16.51	KG	111841	XXXXX	XXXXX
4b	Chimney	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over Chimney as per tender specifications	3.83	KG	29082	XXXXX	XXXXX
4c	Fans	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over Fans as per tender specifications	2.39	KG	16200	XXXXX	XXXXX
5	C&I, General Ele.	Rate in Rupees per KG for erection, testing, commissioning, trial operation and handing over of C&I, General Ele. as per tender specifications	5.05	KG	33000	XXXXX	XXXXX
6		Painting of total Surface area as per drawing/ design	3.69	Sq.Meter	3500	XXXXX	XXXXX
7		All Laisoning work to complete the statutory requirement for commissioning & operation of new boiler	4.59	JOB	1	XXXXX	XXXXX
		<b>GROSS TOTAL</b>	<b>100.00</b>				<b>#####</b>
		<b>Total price in words: (To be necessarily filled by bidder)</b>					

We hereby accepted above  
(signature & seal of bidder)

Seal & Signature of  
BHEL contracting authority



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

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*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*



# Bharat Heavy Electricals Limited, Jhansi (U.P.)

Department: Works Engineering & Services

Tender Enquiry No: WEX/TE/06/25 Dt.31.03.2017 TD: 2016-17, Rev- 00

## Annexure K

### Guidelines for dealing with “discrepancy in words & figures – quoted in price bid”.

In case of non-conformities/errors/discrepancies are observed between the quoted prices in figures and that in words, following guidelines are to be followed:-

- (a) 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 .
- (b) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the tenderer, the bid is liable to be ignored.

*We hereby accepted above  
(signature & seal of bidder)*

*Seal & Signature of  
BHEL contracting authority*