

# TENDER SPECIFICATION No.

**NO: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**HANDLING & COLLECTION OF MATERIALS AT BHEL/CLIENT'S STORAGE YARD/ STORES, TRANSPORTATION TO SITE, APPLICATION OF LINING & INSULATION MATERIALS INCLUDING ERECTION OF FIXING & SUPPORTING COMPONENTS, SHEET CLADDING, OUTER CASING, ETC ON PART QUANTITY OF PIPING, DUCT, EQUIPMENT ETC. OF Unit # 4 OF 5x270 MW AMRAVATI THERMAL POWER PROJECT PHASE I.**

**AT**

**ADDITIONAL AMRAVATI INDUSTRIAL AREA,  
INDIABULLS POWER LTD  
NANDGAONPETH,  
DIST- AMRAVATI  
MAHARASHTRA**

**VOLUME – I**

## **CONSISTING OF:**

- **Notice Inviting Tender,**
- **Volume-IA : Technical Conditions of Contract-,**
- **Volume-IB : Special conditions of Contract,**
- **Volume-IC : General conditions of Contract**
- **Volume-ID : Forms & Procedures**



**Bharat Heavy Electricals Limited**  
*(A Government of India Undertaking)*  
Power Sector - Western Region  
345-Kingsway, Nagpur-440001

## CONTENTS

Volume No	Description	No. of pages	Hosted in website bhel.com as files titled
NIL	Tender Specification Issue Details	1	(Part of <b><u>Vol-IA-1237</u></b> )
NIL	Notice Inviting Tender	20	(Part of <b><u>Vol-IA-1237</u></b> )
I-A	Technical Conditions of Contract	33	<b><u>Vol-IA-1237</u></b>
I-B	Special Conditions of Contract	47	<b><u>Vol-IBCD-1237</u></b>
I-C	General Conditions of Contract	29	(Part of <b><u>Vol-IBCD-1237</u></b> )
I-D	Forms & Procedures	71	(Part of <b><u>Vol-IBCD-1237</u></b> )
II	Price Bid Specification	5	<b><u>Vol-II-1237</u></b>

## **Tender Specification Issue Details**

**NO: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**HANDLING & COLLECTION OF MATERIALS AT BHEL/CLIENT'S STORAGE YARD/ STORES, TRANSPORTATION TO SITE, APPLICATION OF LINING & INSULATION MATERIALS INCLUDING ERECTION OF FIXING & SUPPORTING COMPONENTS, SHEET CLADDING, OUTER CASING, ETC ON PART QUANTITY OF PIPING, DUCT, EQUIPMENTS ETC. OF Unit # 4 OF 5x270 MW AMRAVATI THERMAL POWER PROJECT PHASE I.**

**AT**

**ADDITIONAL AMRAVATI INDUSTRIAL AREA,  
INDIABULLS POWER LTD  
NANDGAONPETH,  
DIST- AMRAVATI  
MAHARASHTRA**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR                      Refer Notice Inviting Tender  
TENDER SUBMISSION

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s. ....

.....

PLEASE NOTE:  
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)  
Place: Nagpur  
Date:

1237

# NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



Ref: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Date: 18/02/2013

**NOTICE INVITING TENDER (NIT)**  
**NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES  
OR  
PURCHASE TENDERS FROM THIS OFFICE ALSO**

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To

Dear Sir/Madam

Sub : **NOTICE INVITING TENDER**

Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-I) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

**1.0 Salient Features of NIT**

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHE/PW/PUR/ AMRT-INS U#4/ 1237
ii	Broad Scope of job	HANDLING & COLLECTION OF MATERIALS AT BHEL/CLIENT'S STORAGE YARD/ STORES, TRANSPORTATION TO SITE, APPLICATION OF LINING & INSULATION MATERIALS INCLUDING ERECTION OF FIXING & SUPPORTING COMPONENTS, SHEET CLADDING, OUTER CASING, ETC ON PART QUANTITY OF PIPING, DUCT, EQUIPMENTS ETC. OF Unit # 4 OF 5x270 MW AMRAVATI THERMAL POWER PROJECT PHASE I AT ADDITIONAL AMRAVATI INDUSTRIAL AREA, INDIABULLS POWER LTD NANDGAONPETH, DIST- AMRAVATI, MAHARASHTRA
iii	DETAILS OF TENDER DOCUMENT	
a	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i> Applicable
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> Applicable
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> Applicable
d	Volume-ID	<i>Forms and Procedures</i>
e	Volume-II	<i>Price Schedule (Absolute value).</i> Applicable
iv	Issue of Tender Documents	1. <b><u>Sale from BHEL PS Regional office at : Start : 18/02/2013</u></b> Applicable/

**BHEL PSWR  
Notice Inviting Tender**

Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Page 6 of 56

		<p><b>Closes: 04/03/2014 , Time : 16:00 Hrs</b></p> <p><b>2. From BHEL website (<a href="http://www.bhel.com">www.bhel.com</a>)</b> Tender documents will be available for downloading from website till due date of submission</p>	Not applicable
v	<b>DUE DATE &amp; TIME OF OFFER SUBMISSION</b>	<p><b>Date : 05/03/2014 , Time : 15:00 Hrs</b> <b>Place : <u>BHEL PS Regional office at :Nagpur</u></b></p> <p>Tenders being submitted through representative shall be submitted at dispatch section of of PSWR HQ Office after making entry/registration at the reception. For any assistance on the matter kindly contact following officials:</p> <p><b>Pratish Gee Varghese/Engineer(Purchase)</b> <b>Nirmal PG / Asst. Engineer (Purchase)</b></p>	Applicable
vi	<b>OPENING OF TENDER</b>	<p><b>1 hours after the latest due date and time of Offer submission</b></p> <p>Notes: (1) In case the due date of opening of tender becomes a non-working day, then the due date &amp; time of offer submission and opening of tenders get extended to the next working day. (2) Bidder may depute representative to witness the opening of tender</p>	Applicable
vii	<b>EMD AMOUNT</b>	Rs 2,00,000/- (Rupees Two Lakh Fifty Thousand Only)	Applicable
viii	<b>COST OF TENDER</b>	Rs 2000/-.	Applicable
ix	<b>LAST DATE FOR SEEKING CLARIFICATION</b>	<p>Atleast 4 days before the due date of offer submission Along with soft version also, addressing to undersigned &amp; to others as per contact address given below <a href="mailto:nirmalpg@bhelswr.co.in">nirmalpg@bhelswr.co.in</a> <a href="mailto:pgv@bhelswr.co.in">pgv@bhelswr.co.in</a></p>	Applicable
x	<b>SCHEDULE OF Pre Bid Discussion (PBD)</b>	Date :	<del>Applicable</del> /Not applicable.
xi	<b>INTEGRITY PACT &amp; DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)</b>		<del>Applicable</del> /Not Applicable
xii	<b>Latest updates</b>	<p>Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (<a href="http://www.bhel.com">www.bhel.com</a> --&gt;Tender Notifications →View Corrigendums) <b>and not in the newspapers</b>. Bidders to keep themselves updated with all such information</p>	

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 7 of 56**

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed & stamped on each page, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**
- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Nagpur issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Nagpur, Sundays and second/ last Saturdays
- 4.0 Unless specifically stated otherwise, bidder shall deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Nagpur. For other details and for 'One Time EMD' please refer General Conditions of Contract.
- 5.0 **Procedure for Submission of Tenders:** The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:
- PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD/COST of TENDER)' in two separate sealed and superscribed envelopes (ENVELOPE-I & ENVELOPE-II)
  - PART-II (Price Bid) – in sealed and superscribed envelope (ENVELOPE-III)
  - One set of tender documents shall be retained by the bidder for their reference
- 6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below. **(All pages to be signed and stamped)**

Sl no	Description	Remarks
	<b>Part-I A</b>	
	<b>ENVELOPE – I superscribed as :</b> PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING:-</b>	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.  <b>Note:</b> a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained. b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender	
iii.	Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.  It shall be specifically noted that all documents as per above shall be indexed properly and	

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 8 of 56**

	credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT.	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT	
vii.	Notice inviting Tender (NIT)	
viii.	Volume – I A : <u>Technical</u> Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii.	Any other details preferred by bidder with proper indexing.	

	<b>PART-I B</b>	
	<b>ENVELOPE – II superscribed as:</b> PART-I (EMD/COST of TENDER) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING:-</b>	
i.	1. Earnest Money Deposit (EMD) in the form as indicated in this Tender <b>OR</b> Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender  2. Cost of Tender ( Demand Draft or copy of Cash Receipt as the case may be)	

	<b>PART-II</b>	
	<b>PRICE BID</b> consisting of the following shall be enclosed	
	<b>ENVELOPE-III</b> superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:  <b>CONTAINING THE FOLLOWING</b>	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume II – PRICE BID ( Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures)	

	<b>OUTER COVER</b>	
	<b>ENVELOPE-IV</b> (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK:	

**BHEL PSWR  
Notice Inviting Tender**

Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Page 9 of 56

	PROJECT: DUE DATE OF SUBMISSION:	
	<b>CONTAINING THE FOLLOWING:</b>	
i	<ul style="list-style-type: none"> <li>○ Envelopes I</li> <li>○ Envelopes II</li> <li>○ Envelopes III</li> </ul>	

SPECIAL NOTE : All documents/ annexures submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.

8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

9.0 **Assessment of Capacity of Bidders:**  
**Bidders capacity for executing the job under tender shall be assessed 'LOAD' wise and 'PERFORMANCE' wise as per the following:**

I. **LOAD:** Load takes into consideration **ALL** the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The 'Load' is the sum of the unit wise identified packages (refer Table-1) for contracts with BHEL Regions. The cut off month for reckoning 'Load' shall be the month, two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

(Note: For example if latest bid submission is in Aug 2011, then the 'load' shall be calculated upto and inclusive of June 2011)

i). **Total number of Packages**

Total number of Packages in hand = P

Where

- 'P' is the sum of all unit wise identified packages under execution with BHEL Regions as of the cut off month defined above, including packages yet to be commenced, excepting packages which are on HOLD due to reasons not attributable to Bidder..

II. **PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (**under execution/** executed during the 'Period of Assessment' in all the Power Sector Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the month two (2) months preceding the month corresponding to the 'latest date of bid submission', in the following manner:

**(Note:** For example if 'latest date of bid submission' is in Aug 2011, then the 'performance' shall be assessed for a 6 month period upto and inclusive of June 2011, for all the unit wise identified packages (refer Table I)

i). **Calculation of Overall 'Performance Rating' for 'similar Package/Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment':**

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:

- a)  $P_1, P_2, P_3, P_4, P_5, \dots, P_N$  etc be the packages (**under execution/** executed during the 'Period of Assessment' in all Regions) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions =  $P_T$  ( ie  $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$  )
- b) Number of Months ' $T_1$ ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package  $P_1$ . Similarly  $T_2$  for package  $P_2$ ,  $T_3$  for package  $P_3$ , etc for the tendered scope. Now calculate cumulative total months ' $T_T$ ' for total similar Packages ' $P_T$ ' for all Regions ( ie  $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$  )
- c) Sum ' $S_1$ ' of 'Monthly Performance Evaluation' Scores ( $S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5}, \dots, S_{1-N}$  ) for similar package  $P_1$ , for the 'period of assessment' ' $T_1$ ' (ie  $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-N}$ ). Similarly  $S_2$  for package  $P_2$  for period  $T_2$ ,  $S_3$  for package  $P_3$  for period  $T_3$ , etc for the tendered scope for all Regions. Now calculate cumulative sum ' $S_T$ ' of 'Monthly Performance Evaluation' Scores for total similar Packages ' $P_T$ ' for all Regions (ie ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots + S_N$ ).
- d) **Overall Performance Rating ' $R_{BHEL}$ ' for the similar Package/Packages (under execution/** executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL):

$$= \frac{\text{Aggregate of Performance scores for all similar packages in all the Regions}}{\text{Aggregate of months for each of the similar package for which performance should have been evaluated in all the Regions}}$$

$$= \frac{S_T}{T_T}$$

- e) Bidders to note that the risk of non evaluation or non availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder

**f) Table showing methodology for calculating 'a', 'b' and 'c' above**

Sl no	Item Description	Details for all Regions							Total
		(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	
(i)	(ii)								(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	$P_1$	$P_2$	$P_3$	$P_4$	$P_5$	...	$P_N$	Total No of similar packages for all Regions = $P_T$ ie Sum ( $\Sigma$ ) of columns (iii) to (ix)
2	Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment' for	$T_1$	$T_2$	$T_3$	$T_4$	$T_5$	...	$T_N$	Sum ( $\Sigma$ ) of columns (iii) to (ix)  = $T_T$

**BHEL PSWR  
Notice Inviting Tender**

Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Page 11 of 56

	corresponding similar Package ( as in row 1)								
3	Monthly performance scores for the corresponding period (as in Row 2)	S <sub>1-1</sub> , S <sub>1-2</sub> , S <sub>1-3</sub> , S <sub>1-4</sub> , ... S <sub>1-T1</sub>	S <sub>2-1</sub> , S <sub>2-2</sub> , S <sub>2-3</sub> , S <sub>2-4</sub> , ... S <sub>2-T2</sub>	S <sub>3-1</sub> , S <sub>3-2</sub> , S <sub>3-3</sub> , S <sub>3-4</sub> , ... S <sub>3-T3</sub>	S <sub>4-1</sub> , S <sub>4-2</sub> , S <sub>4-3</sub> , S <sub>4-4</sub> , ... S <sub>4-T4</sub>	S <sub>5-1</sub> , S <sub>5-2</sub> , S <sub>5-3</sub> , S <sub>5-4</sub> , ... S <sub>5-T5</sub>	.. ... ... ...	S <sub>N-1</sub> , S <sub>N-2</sub> , S <sub>N-3</sub> , S <sub>N-4</sub> , ... S <sub>N-TN</sub>	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	...	S <sub>N</sub>	Sum (Σ) of columns (iii) to (ix)  = S <sub>T</sub>

ii) Calculation of Overall 'Performance Rating' (R<sub>BHEL</sub>) in case 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. 'R<sub>BHEL</sub>' shall be calculated subject to availability of 'performance scores' for at least 6 'package months' in the order of precedence below:

- 'Period of Assessment.
- 12 months preceding the cut-off month
- 24 months preceding the cut-off month
- 36 months preceding the cut-off month

In case, R<sub>BHEL</sub> cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'

iii) Factor "L" assigned based on Overall Performance Rating (R<sub>BHEL</sub>) at Power Sector Regions.:

Sl no	Overall Performance Rating (R <sub>BHEL</sub> )	Corresponding value of 'L'
1	=60	NA
2	> 60 and ≤ 65	0.4
3	> 65 and ≤ 70	0.35
4	> 70 and ≤ 75	0.25
5	> 75 and < 80	0.2
6	≥ 80	NA

**III. 'Assessment of Capacity of Bidder':**

'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages P<sub>Max</sub> = (R<sub>BHEL</sub> - 60) divided by corresponding value of 'L'  
i.e. (R<sub>BHEL</sub> - 60)/L

Note:

- In case the value of P<sub>Max</sub> results in a fraction, the value of P<sub>Max</sub> is to be rounded off to next whole number
- For R<sub>BHEL</sub> = 60, P<sub>Max</sub> = '1'

**BHEL PSWR  
Notice Inviting Tender**

Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Page 12 of 56

iii. For  $R_{BHEL} \geq 80$ , there will be no upper limit on  $P_{Max}$

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if  $P \leq P_{Max}$

(where P is calculated as per clause 9.I)

IV. **Explanatory note:**

- a) Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or CI, etc at the individual level irrespective of rating of Plant, and irrespective of whether the subject tender is a single package or as part of combined/composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, CI, Civil, Structure, etc is considered individual level of package. For example in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl no II above, needs to be evaluated considering all the identified packages (ie Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above
- b) Identified Packages (Unit wise)

**Table-1**

Civil	Electrical & CI	Mechanical
i). Enabling works	i). Electrical	i). Boiler & Aux (All types including CW Piping if applicable)
ii). Pile and Pile Caps	ii). CI	ii). Power Cycle Piping/Critical Piping
iii). Civil Works including foundations	iii). Others (Elec & CI)	iii). LP Piping
iv). Structural Steel Fabrication & Erection		iv). ESP
v). Chimney		v). Steam Turbine Generator set & Aux
vi). Cooling Tower		vi). Gas Turbine Generator set & Aux
vii). Others (Civil)		vii). Hydro Turbine Generator set & Aux
		viii). Turbo Blower (including Steam Turbine)
		ix). Material Handling
		x). Material Management
		xi). Material Handling & Material Management
		xii). Others (Mechanical)

- c) Bidders who have not been evaluated for at least six package months in the last 36 months in the online BHEL system for contractor performance evaluation in BHEL PS Regions, wef July'2010 shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions

A 'NEW VENDOR' if awarded a job (of package/packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI from BHEL.

The "FIRST TIMER" tag shall remain till execution of work for a period of not less than 09 months, from the commencement of work of first package

A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Capacity Evaluation of Bidders'.

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 13 of 56**

- .....
- d) In the unlikely event of all bidders shortlisted against Technical and Financial Qualification criteria not meeting the criteria on 'Assessment of Capacity of Bidders' detailed above, OR leads to a single tender response on applying the criteria of 'Assessment of Capacity of Bidders' or due to non-approval by Customer, then BHEL at its discretion reserves the right to consider the further processing of the Tender based on the **Overall Performance Rating 'R<sub>BHEL</sub>'** only, starting from the upper band.
- e) 'Under execution' shall mean works in progress as per the following:
- i. up to Boiler Steam Blowing in case of Steam Generator and Auxiliaries
  - ii. upto Synchronisation in case of all other works excepting sl no (i) and (iii)
  - iii. Upto execution of at least 90% of anticipated contract value in case of Civil & Structures (unit wise), Enabling works and upto 90% of material unloading (in tonnage) as per the original contract in case of MM Package.

Note : BHEL at its discretion can extend (or reduce in exceptional cases in line with Contract conditions) the period defined against (i), (ii) and (iii) above, depending upon the balance scope of work to be completed.

- f) Performance evaluation in CL 9 above is applicable to Prime bidder and consortium partner (or Technical tie up partner) for their respective scope of work

- 10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.
- 11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**
- 16.0 The Bidder has to satisfy the Pre Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 14 of 56**

Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.

- 17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.
- 18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.
- 19.0 BHEL reserves the right to decide the successful bidder on the basis of Reverse Auction process. In such case all qualified bidders will be intimated regarding procedure/ modality for Reverse Auction process prior to Reverse Auction and price will be decided as per the rules for Reverse Auction. .

However, if reverse auction process is unsuccessful as defined in the RA rules/procedures, or for whatsoever reason, then the sealed 'PRICE BIDS' will be opened for deciding the successful bidder. BHEL's decision in this regard will be final and binding on bidder.

- 20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 23.0 Consortium Bidding (or Technical Tie up) shall be allowed only if specified in Pre Qualifying Requirement (PQR) criteria, and in such a case the following shall be complied with:
- 23.1 Prime Bidder and Consortium Partner or partners are required to enter into a consortium agreement with a validity period of six months initially. In case the consortium is awarded the contract, then the Consortium Agreement between the Prime Bidder and Consortium Partner or partners shall be extended till contractual completion period including extension periods if any applicable.
- 23.2 'Stand alone' bidder cannot become a **'Prime Bidder' or a 'Consortium bidder' or 'Technical Tie up bidder' in a consortium (or Technical Tie up) bidding**. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non compliance, consortium bids of such Prime bidders will be rejected.
- 23.3 Number of partners for a consortium Bidding (or Technical Tie up) shall be as specified in the PQR
- 23.4 Prime Bidder shall be as specified in the Pre Qualification Requirement, else the bidder who has the major share of work
- 23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0
- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 15 of 56**

- .....
- 23.7 Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified
- 23.8 In case customer approval is required, then Prime Bidder and Consortium Partner or partners shall have to be individually approved by Customer for being considered for the tender.
- 23.9 Prime Bidder shall be responsible for the overall execution of the contract
- 23.10 In case of award of job, Performance shall be evaluated for Prime Bidder and Consortium Partner or partners for their respective scope of work(s) as per prescribed formats
- 23.11 In case the Consortium partner or partners back out, their SDs shall be encashed by BHEL. In such a case, other consortium partner or partners meeting the PQR have to be engaged by the Prime Bidder, and if not, the respective work will be withdrawn and executed on risk and cost basis of the Prime Bidder. The new consortium partner or partners shall submit fresh SDs as applicable.
- 23.12 In case the prime Bidder withdraws, the whole contract shall be considered cancelled and short closed.
- 23.13 After execution of work, the work experience shall be assigned to the Prime Bidder and the consortium partner or partners for their respective scope of work. After successful execution of two similar works with the same consortium partner or partners under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'stand alone' bidder for similar works, subject to certification from BHEL about the active involvement of the Prime Bidder for satisfactory execution of the works.
- 23.14 The consortium partner shall submit SD equivalent to 2% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value. In case there are two consortium partners, then each partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the prime Bidder for the total contract value.
- 23.15 In case of a Technical Tie up, all the clauses applicable for the Consortium partner shall be applicable for the Technical Tie up partner also
- 24.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.
- 25.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 26.0 Order of Precedence  
In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:
- a. Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
  - b. Notice Inviting Tender (NIT)
  - c. Price Bid
  - d. Technical Conditions of Contract (TCC)—Volume-1A
  - e. Special Conditions of Contract (SCC) —Volume-1B
  - f. General Conditions of Contract (GCC) —Volume-1C
  - g. Forms and Procedures —Volume-1D

It may please be noted that guidelines/rules in respect of suspension of business dealings', 'Vendor evaluation format', 'Quality, Safety & HSE guidelines', etc may undergo change from time to time and the latest one shall be followed

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 16 of 56**

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for BHARAT HEAVY ELECTRICALS LTD

AGM Purchase

**Enclosure**

01. Annexure-1: Pre Qualifying criteria.
02. Annexure – 2 Check List.
03. Annexure-3 IMPORTANT INFORMATION
04. Other Tender documents as per this NIT.

**ANNEXURE - 1**

**PRE QUALIFYING REQUIREMENTS**

JOB	<b>HANDLING &amp; COLLECTION OF MATERIALS AT BHEL/CLIENT'S STORAGE YARD/ STORES, TRANSPORTATION TO SITE, APPLICATION OF LINING &amp; INSULATION MATERIALS INCLUDING ERECTION OF FIXING &amp; SUPPORTING COMPONENTS, SHEET CLADDING, OUTER CASING, ETC ON PART QUANTITY OF PIPING, DUCT, EQUIPMENTS ETC. OF Unit # 4 OF 5x270 MW AMRAVATI THERMAL POWER PROJECT PHASE I AT ADDITIONAL AMRAVATI INDUSTRIAL AREA, INDIABULLS POWER LTD NANDGAONPETH, DIST- AMRAVATI, MAHARASHTRA</b>
TENDER NO	<b>BHE/PW/PUR/ AMRT-INS U#4/ 1237</b>

SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Name and Description of qualifying criteria	Page no of supporting document. <b>Bidder must fill up this column as per applicability</b>
A	Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium/Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)	<b>Not Appcable</b>	
B	<p><b><u>Technical</u></b> Bidder must have, executed <b>Thermal Insulation works</b> as listed below in the last seven (7) years as on latest date of bid submission ( i.e. Bidder must meet B.1 OR B.2 OR B.3 OR B.4 )</p> <p>B.1) Executed <b>Thermal Insulation works</b> of Boiler and Auxiliaries of rating 190 MW or above in any power plant in single work order. OR</p> <p>B.2) Executed One Thermal Insulation works of 750 MT <b>OR</b> Executed One Thermal Insulation works of value not less than Rs.108 lakhs in any power plant / industry. OR</p> <p>B.3) Executed Two Thermal Insulation works each of 470 MT or above <b>OR</b> Executed Two Thermal Insulation works each of value not less than Rs. 67.5 lakhs in any power plant / industry OR</p> <p>B.4) Executed Three Thermal Insulation</p>	<b>Applicable</b>	

	works each of 375 MT or above <b>OR</b> Executed Three <b>Thermal Insulation works</b> each of value not less than Rs. 54 lakhs in any power plant / industry		
C-1	<b><u>Financial</u></b> <b><u>TURNOVER</u></b> Bidders must have achieved an average annual financial turnover (Audited) of <b>Rs</b> <b>40.5 Lakhs</b> or more over last three Financial Years (FY) i.e. 2010-2011, 2011-2012, 2012-2013	<b>Applicable</b>	
C-2	<b><u>NETWORTH (only in case of Companies)</u></b> Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive	<b>Applicable</b>	
C-3	<b>PROFIT</b> Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three Financial Years defined in 'C-1' above based on latest Audited Accounts.	<b>Applicable</b>	
D	Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT (if applicable)	<b>Applicable</b>	By BHEL
E	Approval of Customer (if applicable)  <b>Note:</b> Names of bidders (including consortium/Technical Tie up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval.	<b>Applicable</b>	BY BHEL
F	Price Bid Opening <b>Note:</b> Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E	<b>Applicable</b>	BY BHEL
F	Consortium criteria (if applicable)	<b>Not Applicable</b>	
<p><b><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></b></p> <ol style="list-style-type: none"> <li>Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above along with all annexures</li> <li>In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three.</li> <li>C-2:-NETWORTH : Shall be calculated based on the latest Audited Accounts as furnished for C-1 above. Net worth = Paid up share capital + Reserves. (Net worth is required to be evaluated in case of companies)</li> <li>C-3:- PROFIT : shall be NET profit (PAT + Non cash expenditure viz depreciation) earned during any one of the three financial years as in C-1 above</li> <li>Time period for achievement of the 'Technical' criteria of PQR (as in 'B' above) will be the last 7 years ending on the 'latest date' of Bid submission</li> <li>'EXECUTED' means the Vendor should have achieved the criteria specified in the Technical criteria of PQR (as in 'B' above) even if the Contract has not been completed or closed</li> </ol>			

	<p>7. Unless otherwise specified, for the purpose of 'Technical' criteria of PQR ( as in 'B' above), the word 'EXECUTED' means:</p> <ol style="list-style-type: none"><li>1. "BOILER LIGHT UP" in respect of Boiler &amp; Aux and ESP</li><li>2. "SYNCHRONISATION" in respect of STG/GTG and 'SPINNING' in case of HTG</li><li>3. "STEAM BLOWING COMPLETION" in respect of at least Main Steam Line of Power Cycle Piping</li><li>4. "HYDRAULIC TEST" of the system in respect of Structures, Pressure parts/IBR Piping</li><li>5. "CHARGING" in respect of power Transformers, Bus ducts, HT/LT switchgears</li><li>6. "Completion of RCC Shell and liner (steel or brick as per tendered scope) up to the HEIGHT specified using slip form" in case of RCC Chimney.</li><li>7. Achievement of physical Quantities as per respective PQRs in respect of Civil &amp; Structures and Piling Works</li><li>8. 'Readiness for coal Filling" in respect of Bunker Structure Work.</li></ol> <p>8. Boiler means HRSG or WHRB or any other types of Steam Generator</p> <p>9. Critical/Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass, LP Bypass lines</p> <p>10. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating in terms of MW shall be considered for evaluation.</p> <p>11. <del>Scope for capital overhaul of STG shall cover Bearing Inspection work and overhauling of all cylinders of the Turbine unless otherwise specifically indicated in the PQR.</del></p> <p>12. In case the tendered scope is not a Pulverized Fuel Boiler, experience of Oil/Gas Fired Boilers also can be considered unless otherwise specifically indicated in the PQR.</p> <p><b>13. The value of work (Experience submitted against PQR B) shall be updated as per the PVC indices for "All India Avg. Consumer Price Index for Industrial Workers" with base month as date of execution (completion of contract/work) and indexed up to two months prior to bid opening month</b></p>
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BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER WITH BOQ AND WORK COMPLETION CERTIFICATE AND TDS CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

**BHEL PSWR  
Notice Inviting Tender**

Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237

Page 20 of 56

**ANNEXURE - 2**

**CHECK LIST**

**NOTE:- Tenderers are required to fill in the following details and no column should be left blank**

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No:                      Date : Bank :                      Amount: <u>Please tick ( ✓ ) whichever applicable:-</u> ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY(B Y BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with <b>PRE QUALIFICATION CRITERIA</b> (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/	YES/NO
8	Copy of PAN Card	Applicable/	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable/	YES/NO
10	Integrity Pact	Not Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable	YES/NO
12	No Deviation Certificate	Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable	YES/NO
15	Non Disclosure Certificate	Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable	YES/NO

**BHEL PSWR  
Notice Inviting Tender**

**Tender Specification No: BHE/PW/PUR/ AMRT-INS U#4/ 1237**

**Page 21 of 56**

17	Capacity Evaluation of Bidder for current Tender	Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Not Applicable	YES/NO
19	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable	YES/NO
20	Analysis of Unit rates	Applicable	YES/NO

NOTE : STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

**DATE :**

**AUTHORISED SIGNATORY  
(With Name, Designation and Company seal)**

**ANNEXURE - 3**

**IMPORTANT INFORMATION**

Registered Office : BHEL House, Siri Fort, New Delhi – 110 049, India Website : www.bhel.com
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- .....
1. **The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site ( [www.bhel.com](http://www.bhel.com) ---> Tender Notification -> List of Banned Firms )**
  2. **All Statutory Requirements as applicable for this project shall be complied with.**
  3. **Please take note of following Revised Tender Clauses:**
    - i. Notice Inviting Tender: SI No 9
    - ii. General conditions of Contract: Clause No 1.15.13 (New), Clause No 2.8.3, 2.8.4 and 2.8.5
  4. **Price Variation Compensation (PVC) as per GCC is not applicable**
  5. **Overrun compensation (ORC) as per GCC is not applicable**

**6. In continuation to Clause 19.0 of NIT (Notice Inviting Tender) following are the broad terms and conditions of Reverse Auction:**

**19. Terms & Condition of Reverse Auction**

19.1. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids. In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction. Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.

19.2. The philosophy followed for reverse auction shall be English Reverse (No ties). English Reverse (No ties) is a type of auction where the starting price and bid decrement are announced before start of online reverse auction. The interested bidders can thereupon start bidding in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within a given time frame. The bidding is with reference to the current lowest bid in the reverse auction. All bidders will see only the current lowest quoted price. The term „No ties“ is used since more than one bidder cannot give an identical price, at a given instant, during the reverse auction. In other words, there shall never be a tie in the bids.

19.3. Technically and commercially acceptable bidders only shall be eligible to participate.

19.4. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet. Business rules for Reverse Auction and other information like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.

**19.5.** After receipt of “online sealed bids” by the participating bidders, start price & bid decrement will be decided by BHEL, before the online Reverse Auction. Only those bidders who have submitted the “on-line sealed bid” within the

.....  
scheduled time shall be eligible to participate further in RA process. **However, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA.** Once participating bidders have given 'Online Sealed Bid' and 'start price' & 'bid decrement' is decided by BHEL, Bidding for RA will start as per RA schedule specified in business rules. Bidders may then submit their bids (current L-1 price(s) lowered by multiple decrements). If the 'start price' decided by BHEL is same as the 'Online Sealed Bid' price of any bidder, then that bidder shall be reckoned as current L1 automatically at the start of

Reverse Auction and no acceptance of that price is required i.e (RA shall deemed to have started at this stage for further bidding)

19.6. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per extant BHEL guidelines*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.

19.7. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party

1237

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED




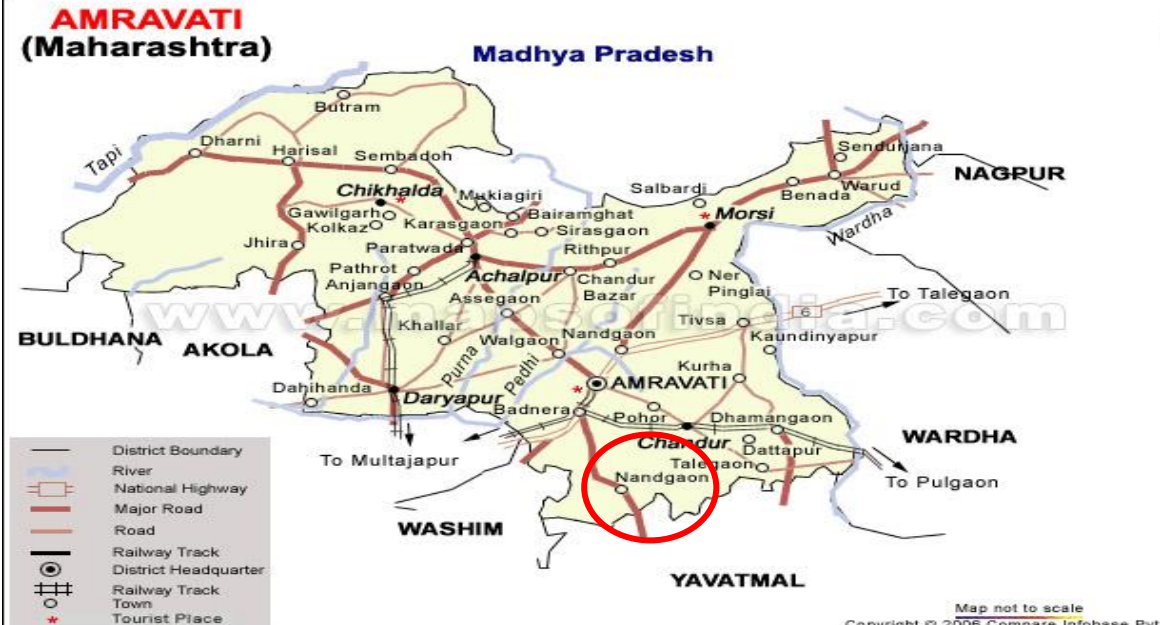
# TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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SI No	DESCRIPTION	Chapter	No. OF PAGES
<b>Volume-IA</b>	<b>Part-I: Contract specific details</b>		
1	Project Information	Chapter-I	
2	Scope of Works	Chapter-II	
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III	
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	
6	Time Schedule	Chapter-VI	
7	Terms of Payment	Chapter-VII	
8	Taxes and other Duties	Chapter-VIII	
<b>Volume-IA</b>	<b>Part-II : Technical Specifications</b>		
1	General	Chapter-I	
2	Lining & Insulation	Chapter-II	
3	Preservation & Protection of Components	Chapter-III	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I: Project Information

1.0	<b>Project Information</b>
1.1	<b>BACKGROUND</b>
<p>INDIABULLS POWER LTD. is setting up a coal based 5x270 MW Thermal Power Project at Nandgaonpeth, Additional Amravati Industrial Area, Dist: Amravati, Maharashtra. Project Site is located at a distance of 22 KM from Amravati District on NH-6 near Nandgaonpeth.</p>	
<p>Nearest Railway Station : Badnera about 20 KM from project site. Badnera is located at a distance of 175 KM from Nagpur on Howrah - Mumbai main line of Central Railways passing through Sevagram, Wardha, Pulgaon, Dhamangaon, Badnera.</p>	
<p>Nearest Highway : National Highway No NH-6 (Surat to Kolkata). Highway passes through Jagaon, Amravati, Raipur</p>	
	
	

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I: Project Information

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Nearest Airport : Nagpur 150 KM (By road)

### **CLIMATE**

Amravati is located between 20°56'N 77°45'E to 20.93°N 77.75°E. It has an average elevation of 343 metres. Amravati has a tropical wet and dry climate with hot, dry summers from March to June, the monsoon season from July to October and warm winters from November to March. As far as the climate of the city is concerned, one can notice extreme variations in the temperatures. The summers in Amravati are very hot. The maximum as well as continuous rainfall is received, from the South Westerly monsoons, in the months of July and August.

Max Temp : 44.5 Deg. C.  
Min Temp : 12.4 Deg. C  
Rainfall : 841.80 MM (Average)  
Seismic Zone : Zone III as per IS : 1893

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

### 2.0 SCOPE OF WORK

#### 2.1

THE WORK TO BE CARRIED OUT UNDER SCOPE OF THIS SPECIFICATION COVERS THE COMPLETE WORK OF HANDLING, LOADING OF MATERIALS AT BHEL/CUSTOMER STORES/ STORAGE YARD, TRANSPORTION TO AND UNLOADING AT SITE, APPLICATION OF INSULATION, FINISHING, CLADDING AND OUTER CASING ETC OF PIPING, DUCT & OTHER EQUIPMENTS AS PER FOLLOWING DETAILED BOQ IN THIS TENDER SPECIFICATION.

#### Summary of insulation to be applied

#### Trichy Manufacturing Unit Supply

S N	PGMA	DU	Description	Quantity	UOM	Weight (MT)	Stage	S No of Rate Schedule
<b>S N 1 of Rate Schedule (Pourable and Castable)</b>								
1	33201	1	FIRE BRICK SIZE:65X125X200 IS:8,TYPE-2	60	NO	0.195	L	2
2	33201	2	FIRE BRICK SIZE 65X125X250 MM IS:8 TYPE	60	NO	0.244	L	2
3	33212	1	CASTABLE REFRACTORY GR C	70000	KG	63.500	L	2
4	33230	1	POURABLE INSULATION	140000	KG	114.000	L	2
			<b>Total (Pourable and Castable)</b>			<b>177.939</b>		
<b>S No. 2 of Rate Schedule (Fixing Components &amp; Iron Parts)</b>								
1	33924	1	PACKING ROPE DA DIA 10X7000 MM-TP:21599	166	KG	0.166	S	1
2	33975	1	SEALING COMPOUND (AS PER ENGG SPEC)	200	KG	0.200	L	1
3	33970	1	WELD MESH:50X50WIRE DIA-3	850	M2	1.886	L	3
4	33971	1	WOVEN WIRE CLOTH1648 X 352	8	NO	0.084	L	3
5	33971	2	WOVEN WIRE CLOTH1808 X 352	24	NO	0.275	L	3
6	33971	3	WOVEN WIRE CLOTH2240 X 352	8	NO	0.114	L	3
7	33971	4	WOVEN WIRE CLOTH208 X 352	16	NO	0.021	L	3
8	33971	5	WOVEN WIRE CLOTH304 X 352	4	NO	0.008	L	3
9	33971	6	FASTENERS HEX BOLTM12 X 55	110	NO	0.008	L	3
10	33971	7	FASTENERS HEX NUTM12	110	NO	0.002	L	3
11	33971	8	FASTENERS WASHERA-12	220	NO	0.001	L	3
12	33971	9	FASTENERS HEX BOLTM10 X 60	220	NO	0.011	L	3
13	33971	10	FASTENERS HEX NUTM10	220	NO	0.003	L	3
14	33971	11	FASTENERS WASHERA-10	440	NO	0.033	L	3
15	32010		Ficom Blr Pp Insul			5.574		3
16	32110		Ficom Blr Mntg Insul			4.623		3
17	32120		Ficom Sb Pipes Insul			1.375		3
18	32310		Ficom Air Ducts Insu			25.129		3
19	32410		Ficom Ah Gas Ducts I			6.750		3
20	32510		Ficom Id Ducts Insul			37.285		3
21	32710		Ficom Oil Syst Insul			1.400		3
			<b>Total (Iron Parts)</b>			<b>84.946</b>		

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

<b>S No. 3 of Rate Schedule (Aluminium Cladding sheets)</b>								
1	37010		Blr Outer Csg Comps			18.988		4
2	37810		Blr Outer Casing			18.738		4
<b>Total (Aluminium Cladding sheets)</b>						<b>37.726</b>		
<b>S No. 4 of Rate Schedule (Wool Mattress)</b>								
1	33021	1	LRB ROCK WOOL MATTONE SIDE NETT 40 TK	1365	M2	6.143	L	5
2	33021	2	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	7025	M2	38.638	L	5
3	33021	3	LRB ROCK WOOL MATTONE SIDE NETT 60 TK	5325	M2	34.613	L	5
4	33121	1	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	1500	M2	8.250	L	5
5	33126	1	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	475	M2	2.613	N	5
6	33321	1	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	10675	M2	58.713	L	5
7	33321	2	LRB ROCK WOOL MATTONE SIDE NETT 60 TK	6645	M2	43.193	L	5
8	33421	1	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	4510	M2	24.805	L	5
9	33521	1	LRB ROCK WOOL MATTONE SIDE NETT 40 TK	6625	M2	29.813	L	5
10	33721	1	LRB ROCK WOOL MATTONE SIDE NETT 50 TK	400	M2	2.200	S	5
<b>Total (Wool Mattress)</b>						<b>248.978</b>		
<b>Total Trichy Scope</b>						<b>549.589</b>		

### PC Chennai unit Supply

S N	PGMA	DU	Description	Qty	UOM	Weight (MT)	Stage	S No of Rate Schedule
<b>S No. 2 of Rate Schedule (Fixing Components &amp; Iron Parts)</b>								
1	81341		SEALING COMPOUND FOR INSL			0.105	L	1
1	81318		FIX COM FOR MISCELLANEOUS PPG INSULATION			0.956	L	3
<b>Total (Iron Parts)</b>						<b>1.061</b>		
<b>S No. 3 of Rate Schedule (Aluminum Cladding sheets)</b>								
	81350		ALUMINIUM CLADDING FOR INSULATION			3.729	L	4
<b>Total (Aluminum Cladding sheets)</b>						<b>3.729</b>		
<b>S No. 4 of Rate Schedule (Wool Mattress)</b>								
1	81325	1	LBM DEN.=100 KG/CU.M T=25MM	180	M2	0.54	L	5
2	81325	2	LBM DEN.=150 KG/CU.M T=25MM	1700	M2	7.225	L	5
3	81325	3	LBM DEN.=150 KG/CU.M T=40MM	230	M2	1.495	L	5
4	81325	4	LBM DEN.=150 KG/CU.M T=50MM	220	M2	1.76	L	5
5	81325	5	LBM DEN.=150 KG/CU.M T=60MM	350	M2	3.325	L	5
6	81325	6	LBM DEN.=150 KG/CU.M T=70MM	140	M2	1.54	L	5

BHEL-PSWR

Tender Specification No: BHE/PW/PUR/AMRT-INS U#4 /1237

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

7	81325	7	LBM DEN.=150 KG/CU.M T=80MM	70	M2	0.875	L	5
			<b>Total (Wool Mattress)</b>			<b>16.76</b>		
			<b>Total PC Chennai Scope</b>			<b>21.550</b>		

### Ranipet Unit Supply

S N	PGMA	DU	Description	Weight (MT)	Stage	S No of Rate Schedule
<b>S No. 2 of Rate Schedule (Fixing Components &amp; Iron Parts)</b>						
1	78468	2	RETAINER TYPE A	10.370		3
2	78468	3	RETAINER TYPE D	9.199		3
3	78468	4	AL.CASING SUPPT L =650MM	6.822		3
4	78468	5	BINDING WIRE G.I D1.219-167772 RM	1.510		3
5	78468	6	SEWING WIRE G.I D0.711-83886 RM	0.252		3
6	78468	7	SELF TAP.SCREW M4X12(475320NOS)	0.475		3
7	78468	8	STOOL,ROOF,INSLT FIX.PIN DIA 6X55	0.253		3
8	78468	9	ON HOP STIFF FIX.PIN DIA6X85	0.478		3
9	78468	10	GABLE,GD,FUNNEL FIX.PIN DIA6X135	0.598		3
10	78468	11	CAS SIDE WALLS FIX.PIN DIA6X155	1.104		3
11	78468	12	HOP MID WALLS FIX.PIN DIA6X185	0.457		3
12	78468	13	HOP UPPER WALLS FIX.PIN DIA6X205	1.865		3
13	55911		FIXING PIN, RETAINER etc.	0.454		3
14	55931		FIXING PIN, RETAINER etc.	0.437		3
15	56171		FIXING PIN, RETAINER etc.	0.068		3
<b>Total (Iron Parts)</b>				<b>34.342</b>		
<b>S No. 3 of Rate Schedule (Aluminum Cladding sheets)</b>						
1	78468	1	PLAIN ALU.SHEET 0.711MM THICK	27.840		4
2	55911	38	ALUMINIUM PLAIN SHEET 16 SWG	1.382		4
3	55931	39	ALLUMINUM PLAIN 16 SWG	1.478		4
4	56171	52	ALUMINIUM PLAIN SHEET 16 SWG	0.271		4

BHEL-PSWR

Tender Specification No: BHE/PW/PUR/AMRT-INS U#4 /1237

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II: Scope of Works

<b>Total (Aluminum Cladding sheets)</b>				<b>30.971</b>		
<b>S No. 4 of Rate Schedule (Wool Mattress)</b>						
1	78467	1	MIN WOOL FOR ESP INSUL	64.786	L	5
2	55911	36	FD FAN SILENCER - LR BONDED SLAG WOOL 50MM THK	4.928	L	5
3	55931	37	PA FAN SILENCER - LR WOOL 50MM THK	6.474	L	5
4	56171	52	SEAL AIR FAN - LR BONDED SLAG WOOL 50 MM TK	0.320	L	5
<b>Total (Wool Mattress)</b>				<b>76.508</b>		
<b>Total Ranipet Scope</b>				<b>141.821</b>		

### PEM Supply

S N	Item	Weight (MT)	Package	S N of rate schedule
<b>S No. 2 of Rate Schedule (Fixing Components &amp; Iron Parts)</b>				
1	PEM Supplied Insulation Iron Parts	15	Boiler/ESP/ Piping	3
	<b>Total - Iron Parts</b>	<b>15</b>		
<b>S No. 3 of Rate Schedule (Aluminum Cladding sheets)</b>				
1	PEM Supplied Aluminum Cladding materials	25	Boiler/ESP/ Piping	4
	<b>Total - Aluminum Cladding sheets</b>	<b>25</b>		
<b>S No. 4 of Rate Schedule (Wool Mattress)</b>				
1	PEM Supplied Wool Mattress	188	Boiler/ESP/ Piping	5
	<b>Total - Wool Mattress</b>	<b>188</b>		
	<b>Total PEM Supply</b>	<b>228</b>		

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter - II: Scope of Works**

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**Summary of Weight of Insulation**

**Unit wise**

<b>S N</b>	<b>Unit</b>	<b>Weight (MT)</b>
1	Trichy	549.589
2	PC Chennai	21.550
3	Ranipet	141
4	PEM	228.000
	<b>Total</b>	<b>940</b>

**Rate schedule item wise**

<b>S No of Rate Schedule</b>	<b>Description</b>	<b>Weight (MT)</b>
1	Pourable and Castable	178
2	Fixing Components & Iron Parts	135
3	Aluminium Cladding Sheets	97
4	Wool Mattress	530
	<b>Total</b>	<b>940</b>

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

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SI.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	<b>ESTABLISHMENT</b>			
3.1.1	<b>FOR CONSTRUCTION PURPOSE:</b>			
a	Open space for office (as per availability)	Yes		Location will be finalized after joint survey with owner
b	Open space for storage (as per availability)	Yes		Location will be finalized after joint survey with owner
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	<b>FOR LIVING PURPOSES OF THE BIDDER</b>			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Open space for labour colony (as per availability)	Yes		Space will be provided if available; Location will be finalized after joint survey with owner.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	<b>ELECTRICITY</b>			
3.2.1	<b>Electricity For construction purposes</b> of Voltage 415/440 V			FREE
a	Single point source	Yes		At a distance of 500 M from site (Distance is only estimated, it may vary upto an extent depending on site condition)
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	<b>Electricity for the office, stores, canteen etc of the bidder</b>			CHARGEABLE as per standard rates

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Single point source	Yes		At a distance of 500 M from site (Distance is only estimated, it may vary upto an extent depending on site condition)
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	<b>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc</b>			CHARGEABLE
a	Single point source		<b>YES</b>	Power may be drawn from owner's given point within plant boundary.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3.0	<b>WATER SUPPLY</b>			
3.3.1	<b>For construction purposes:</b>			FREE

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	Making the water available at single point	Yes		In case of inadequate supply / non-availability of construction water from customer, contractor shall have to arrange construction water at his own expenses.
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<b><u>Water supply for bidder's office, stores, canteen etc</u></b>			FREE
a	Making the water available at single point	Yes		
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.3	<b><u>Water supply for Living Purpose</u></b>			
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	<b>LIGHTING</b>			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
b	For construction work (execution of the lighting work/ arrangements ) 1. At office/storage area 2. At the preassembly area 3 At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	<b>COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER</b>			
a	Telephone, fax, internet, intranet, e-mail etc		Yes	
3.6.0	<b>COMPRESSED AIR wherever required for the work</b>			
3.7.0	<b>Demobilization of all the above facilities</b>		<b>YES</b>	
3.8.0	<b>TRANSPORTATION</b>			

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl.No	Description <b>PART II</b> <b>3.9.0 ERECTION FACILITIES</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9.1	Engineering works for construction:			
a	Providing the erection drawings for all the equipments covered under this scope	Yes		
b	Drawings for construction methods	Yes	Yes	In consultation with BHEL
c	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		<b>YES</b>	"
d	Shipping lists etc for reference and planning the activities	Yes		"
e	Preparation of site erection schedules and other input requirements		Yes	"

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – III: Facilities in the scope of Contractor/BHEL**

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Sl.No	Description <b>PART II</b> <b>3.9.0 ERECTION FACILITIES</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	"
g	Weekly erection schedules based on SI No. e		Yes	"
h	Daily erection / work plan based on SI No. g		Yes	"
i	Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
j	Preparation of preassembly bay		Yes	
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor/bidder himself		Yes	
L	Arranging the materials required for preassembly		YES	

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – IV: Tentative list of T&Ps and MMEs to be deployed by Contractor**

<b>SN</b>	<b>DESCRIPTION</b>	<b>CAPACITY (MINIMUM)</b>	<b>MINIMUM QUANTITY</b>	<b>REMARKS</b>
1	Truck / Trailer	As required	As required	
2	3-Phase Distribution Board with Complete Set Up for Drawl of Construction Power	As required	As required	
3	Power Cable for drawl of Construction Power	As required	As required	
4	Welding Generator (Electrical)	300 Ampere rating	As required	
5	Baking Oven with thermostat and temperature gauge for welding electrodes	As required	As required	
6	Holding Oven with thermostat and temperature gauge for welding electrodes	As required	As required	
7	Portable Over for welding electrodes	As required	As required	
8	Electric Winch	1 Ton Capacity	As required	
9	Scaffolding Materials	Suitable for working at various heights	Adequate qty for parallel working in multiple work fronts.	
10	Profile making M/c	for aluminium sheet cladding work	As required	
11	Nibbling M/c		As required	
12	Shearing M/c		As required	
13	Water Pump to lift water to top of boiler	for refractory and other required activities	As required	
14	Portable Grinding M/c	As required	As required	
15	Portable Drilling M/c	As required	As required	
16	Chain Pulley Blocks	Up to 3 MT Capacity	As required	
17	Fire retardant Tarpaulins	As required	As required	
18	Fire Extinguisher	As required	As required	

**MEASURING AND MONITORING DEVICES (MMD):**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – IV: Tentative list of T&Ps and MMEs to be deployed by Contractor

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AS PER REQUIREMENT TO BE FINALIZED AT SITE, SHALL MEET THE REQUIREMENTS AS PER FIELD QUALITY PLAN AND OTHER ERECTION, TESTING RELATED ACTIVITIES.

**NOTE:**

1. The above list specifies only major T&P/MMD (may not be complete) to be deployed by the contractor. All additional/ other tools and plants which are required for satisfactory & timely completion of work shall also be deployed by the contractor within finally accepted rate/ price.
2. IF ABOVE MENTIONED T & P ARE NOT DEPLOYED IN SPECIFIED TIME BHEL WILL CHARGE TO CONTRACTOR CURRENT MARKET RATE + 30 % OVERHEADS FOR NON AVAILABILITY T&P OR LEVY A DAY WISE PENALTY FOR NON DEPLOYMENT OR DELAYED DEPLOYMENT
- 3 IF THE WORKS GET DELAYED DUE TO NON-AVAILABILITY OF T&P, BHEL RESERVES THE RIGHT TO GET THE WORK DONE AT THE RISK AND COST OF CONTRACTOR WITHIN PREJUDICE TO RIGHTS OF BHEL AS IN GCC.

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter – V: T&Ps and MMEs to be deployed by BHEL on sharing  
basis**

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Mobile hydra crane of 8 / 11 MT capacity shall be provided by BHEL on sharing basis.

Note:

1. This crane is owned or hired by BHEL. Operator for BHEL owned crane will be arranged by contractor.
2. Contractor shall provide the fuel for BHEL provided cranes (hired/owned) for his use.
3. Cranes provided by BHEL will be on sharing basis with other agencies /contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time as decided by BHEL for suitable duration and intended purpose.
4. Routine maintenance of the BHEL crane shall be in the scope of contractor. However the consumable like engine oil, filters, seals etc. shall be arranged by BHEL free of cost. Breakdown repair Maintenance if required shall be in the scope of BHEL.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

### 6. TIME SCHEDULE & MOBILIZATION

#### 6.1.1 INITIAL MOBILIZATION

After receipt of fax LOI, Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilization. Contractor shall mobilize necessary resources within 1 week of issue of fax letter of intent or as per the directive of Project Manager / Construction Manager. Such resources shall be progressively augmented to match the schedule of milestones and commissioning.

#### 6.1.2 COMMENCEMENT OF CONTRACT PERIOD AND TENTATIVE SCHEDULE

DATE OF FIRST APPLICATION OF INSULATION MATTRESS / POURABLE INSULATION / CASTABLE INSULATION / FIXING OF ATTACHMENTS ON THE ANY EQUIPMENT SHALL BE RECKONED AS THE START OF CONTRACT PERIOD. PREPARATORY WORKS LIKE INSTALLATION OF SCAFFOLDING, PRE-ASSEMBLY OF HOOKS, STRAIGHTENING/ ROLLING OF CLADDING ETC WILL NOT BE COUNTED FOR THIS PURPOSE.

The Contractor has to subsequently augment his resources in such a manner that following major milestones of erection & commission are achieved on specified schedules:

According to the mutual agreement between BHEL and Owner the schedule of important milestones is as follows:

SL No.	Milestones	UNIT - 4
1.	Synchronization with coal firing	Aug'14
2.	Trial run Operation	Sept'14

In order to meet above schedule in general, and any other intermediate targets set, to meet customer/ project schedule requirements, Contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL.

#### 6.1.4 CONTRACT PERIOD

The contract period for completion of entire work under scope shall be **6 (Six) months** from the “start of contract period” as specified above.

The period from the commencement of preparatory work for erection till the actual “start of contract period” shall not be reckoned for the above purpose.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VII: Terms of Payment

7.0 The progressive payment for erection, testing and commissioning on accepted price of contract value will be released as per the break up given hereinafter:

SL NO	Description	% Payment
1.1	ON PRE-ASSEMBLY WHEREVER APPLICABLE ( IF NOT APPLICABLE, THIS PORTION SHALL BE CLUBBED WITH PLACEMENT IN POSITION)	--
1.2	PLACEMENT IN POSITION	50
1.3	ALIGNMENT	15
1.4	WELDING/BOLTING/FIXING	20
1.5	Synchronisation with Coal Firing	3
1.6	Full Load	3
1.7	Area cleaning, temporary structures cutting/removal and return of scrap	3
1.8	Punch List points/pending points liquidation	2
1.9	Material Reconciliation	2
1.10	Completion of Contractual Obligation	2
<b>Total</b>		<b>100</b>
<p style="text-align: center;">NOTE: The terms of payment is only for enabling release of payment through RABs and is not indicative of the actual quantum or value of work.</p>		

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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### 8.0 TAXES, DUTIES, LEVIES (Consolidated Rev 03 dated 09/04/2013)

#### 8.1. For All types of works excepting works covered under sl no 8.2

##### 8.1.1

The contractor shall pay all (save the specific exclusions as enumerated in this contract) 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.

**However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.**

##### 8.1.2 Service Tax & Cess on Service Tax

Contractor's price/rates shall be exclusive of Service Tax and Cess on Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and pay the same to the concerned tax authorities, such applicable amount will be paid by BHEL at the prevailing Service Tax Rate (presently 12.36 %) on the admitted bill value.

**Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract. Contractor shall submit serially numbered Service Tax and Cess Invoice, signed by him or a person authorized by him in respect of taxable service provided, and shall contain the following, namely,**

1. The name, address and the registration number of the contractor,
2. The name and address of the party receiving taxable service,
3. Description, classification and value of taxable service provided and,
4. The service tax payable thereon.

**All the Four conditions shall be fulfilled in the invoice before release of service tax payment.**

**Wherever, more than one route/option are available for discharge of service tax liability under a particular service, (e.g. "works contract Service"), contractor shall obtain prior written consent from BHEL site before billing the amount towards Service Tax.**

##### 8.1.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT)/CST on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, the price quoted by the contractor shall be inclusive of the same and in no case input or output VAT/CST will be reimbursed extra.

In any case the Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA bill. Contractor will submit all the details of

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-VIII: Taxes and Other Duties

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VAT/CST paid for the contract in the prescribed format of the respective state VAT laws. Also, the contractor will issue the tax Invoices to BHEL as per the Tax laws of respective state on monthly basis. Contractor shall also be required to furnish to BHEL necessary proof of VAT remittance on monthly basis.

Deduction of tax at source shall be made as per the provisions of law and is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made.

Further, if BHEL, at the instance of customer or otherwise adopts the specific route for discharging output VAT liability itself, benefit of the reduction in liability of the contractor will be passed on to BHEL.

In case, BHEL is forced to pay any VAT liability on behalf of contractor, the same will be recovered from contractor's bill or otherwise as deemed fit

### **8.2 —‘Enabling Works’**

The contractor shall pay all (save the specific exclusions as enumerated in this contract) 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. **( i.e. rates quoted by bidder shall be inclusive of Service Tax, VAT/WCT and all other taxes and duties )**

However, Since the proposed work is in the nature of 'Works Contract service' as per Service tax law, Hence, For non-corporate contractors being Individual, HUF, Proprietary Firm, Partnership Firm or Association of Persons (AOP), BHEL shall recover the applicable Service Tax under reverse charge mechanism from the contractor and remit the same with the Government as per the provisions of Law. Necessary advice/confirmation of remittance shall be issued to the contractor. The contractor shall not be eligible for any refund/reimbursement of such service tax from BHEL. It shall be the responsibility of the contractor to submit proper invoice giving all the requisite details as per Service Tax Law for the determination of the service tax liability of BHEL under reverse charge mechanism. BHEL reserves the right to determine such liability based on the invoice submitted by the contractor or otherwise independently and remittance of the same with the Government.

### **8.3 New Taxes/Levies**

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same **before opening of Price Bid**. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his pricebid.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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### GENERAL REQUIREMENTS – COMMON TO ALL WORK

#### 11.1

The intent of specification is to provide services according to the most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for proper and efficient execution of this work shall not relieve the Contractor of the responsibility of providing such facilities to complete the work without any extra compensation.

#### 9.2

The terminal points decided by BHEL shall be final and binding on the Contractor for deciding the scope of work and effecting payment for the work done.

#### 9.3

The work shall be executed under the usual conditions affecting major power plant construction and in conjunction with numerous other operations at site. The Contractor and his personnel shall cooperate with personnel of BHEL, BHEL'S Customer, Customer's consultants and other Contractors, coordinating his work with others and proceed in a manner that shall not delay or hinder the progress of work of the project as a whole.

#### 9.4

The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, supervision, engineering and construction management. The Contractor should ensure proper planning and successful & timely completion of the work to meet the overall project schedule. The Contractor must deploy adequate quantity of tools & plants, modern / latest construction aids etc. He must also deploy adequate trained, qualified and experienced supervisory staff and skilled personnel.

#### 9.5

Contractor shall erect and commission all the equipments and auxiliaries as per the sequence & methodology prescribed by BHEL depending upon the technical requirements. Availability of materials and fronts will decide this. BHEL Engineer's decision regarding correctness of the work and method of working shall be final and binding on the Contractor. No claims for extra payment from the Contractor will be entertained on the ground of deviation from the methods / sequence adopted in erection of similar sets elsewhere.

#### 9.6

All necessary certificates and licenses, permits & clearances required including IBR certificates/license/clearances to carry out this work from the respective statutory/ local authorities are to be arranged by the Contractor at his cost in time to ensure smooth progress of work.

#### 9.7

The boiler shall be erected as per relevant provisions of latest Indian Boiler Regulations (IBR) and amendments/addendums thereof, if any.

#### 9.8

The work shall conform to dimensions and tolerances specified in the various drawings / documents that will be provided during various stages of erection. If any portion of work is found

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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to be defective in workmanship, not conforming to drawings or other stipulations due to Contractor's fault, the Contractor shall dismantle and re-do the work duly replacing the defective materials at his cost, failing which the work will be got done by BHEL and recoveries will be effected from the Contractor's bills towards expenditure incurred including cost of materials and departmental overheads of BHEL as per GCC.

### 9.9

The Contractor shall perform any services, tests etc, which may not be specified but nevertheless, required for the completion of work within quoted rates.

### 9.10

All necessary certificates and licenses required for carrying out this work are to be arranged by the Contractor expeditiously.

### 9.9

The Contractor shall execute the work in the most substantial and workman like manner. The stores shall be handled with care and diligence.

### 9.12

BHEL reserves right to recover from the Contractor any loss which arises out of undue delay / discrepancy / shortage / damage or any other causes due to Contractor's lapse during any stage of work. Any loss to BHEL due to Contractor's lapse shall have to be made good by the Contractor as per GCC.

### 9.13

All cranes, transport equipment, handling equipment, tools, tackles, fixtures, equipment, manpower, supervisors/engineers, consumables etc, except otherwise specified as BHEL scope of free issue, required for this scope of work shall be provided by the Contractor. All expenditure including taxes and incidentals in this connection will have to be borne by Contractor unless otherwise specified in the relevant clauses. The Contractor's quoted rates should be inclusive of all such contingencies.

### 9.14

During the course of erection, testing and commissioning certain rework / modification / rectification / repair / fabrication etc may become necessary on account of feed back / revision of drawing etc. This will also include modifications / re-works suggested by BHEL / customer / other inspection group. Contractor shall carry out such rework / modification / rectification / fabrication / repair etc promptly and expeditiously. Daily log sheets signed by BHEL engineer and indicating the details of work carried out, man-hours etc shall be maintained by the Contractor for such reworks. Claim of Contractor if any, for such works will be governed by relevant clauses of 'General Conditions of Contract'.

### 9.15

All works such as cleaning, leveling, aligning, trial assembly, dismantling of certain equipments / components for checking and cleaning, surface preparation, fabrication of structures, tubes and pipes as per general engineering practice and as per BHEL Engineer's instructions at site, cutting, gouging, weld depositing, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scrapping, lapping, fitting up etc as may be applicable in such erection works and

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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which are treated incidental to the erection works and necessary to complete the work satisfactorily, shall be carried out by the Contractor as part of the work within the quoted rates.

### 9.16

The Contractor shall make all fixtures, temporary supports, steel structures required for jigs & fixtures, anchors for load and guide pulleys required for the work. Contractor shall arrange necessary steel for such usage.

### 9.17

The Contractor shall take delivery of the components, equipments, chemicals, and lubricants etc from the BHEL stores/ storage area after getting the approval of BHEL Engineer on standard indent forms of BHEL. Complete and detailed account of the materials and equipments after usage shall be submitted to the BHEL and reconciled periodically.

### 9.18

The distance between storage area and erection site is approx 2 KM. Storage yard located at two different places and both are about 1-2 KM from Boiler area. Contractor shall plan and transport equipments, components from storage to erection site and erect them in such a manner and sequence that material accumulation at site does not lead to congestion at site of work. Materials shall be stacked neatly, preserved and stored in the Contractor's shed and at work areas in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work areas/ site to enable other agencies to carry out their work or for any other reason, same shall be done by Contractor most expeditiously as incidental to work.

### 9.19

Plant materials should not be used for any temporary supports / scaffolding/ preparing pre-assembly bed etc.

### 9.20

The details of equipments to be erected under this contract are generally as per the schedule given in relevant appendices. These details are approximate and meant only to give a general idea to the tenderer about the magnitude of the work involved. Actual quantum and type of equipments will be based on the relevant erection documents which will be furnished to the Contractor in due course of erection and the weight and quantity as per the relevant engineering documents will only be admissible for the billing purpose.

### 9.21

Hangers & suspensions, supports etc for tubes, piping, & ducts etc will be supplied in running / random lengths / sizes which shall be cut to suitable sizes and adjusted as required.

### 9.22

Spring suspension / constant load hangers may have to be pre-assembled for required load and erection carried out as per instructions of BHEL. Adjustments, removal of temporary arrests/locks, cutting of excess thread length of hanger tie-rod etc have to be carried out as and when required. Load setting of spring hangers, as per BHEL's documents/instructions, during various stages of erection & testing and after floating of piping/ducting during cold and hot

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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condition will have to be done as part of work. This exercise may have to be repeated till satisfactory results are achieved.

### 9.23

Layout of field routed/ small bore piping shall be done as per site requirement. Necessary sketch for routing these lines should be got approved from BHEL by the Contractor. There is a possibility of slight change in routing the above pipe lines even after completion of erection.

### 9.24

Welding of necessary instrumentation tapping points, thermowell, thermocouple pad, metal temp pad and clamps, root valve, condensing vessel, flow metering & measurement devices, and control valves to be provided on boiler & its auxiliaries and piping are covered within the scope of this specification. The installation of all the above items will be Contractor's responsibility even if:

- a) Items are not specifically indicated under the respective product groups as given in the technical specifications.
- b) Items are supplied by an agency other than BHEL.

Pre-heating, NDE, and Post weld heat treatment for above shall be done as per the specifications as part of work.

### 9.25

Certain instrumentation like pressure switches, air sets, filters, regulators, pressure gauges, junction boxes, power cylinders, dial thermometers, flow meters, valve actuators, flow indicators, centrifugal/speed switches of motors, accumulators etc are received in assembled condition as integral part of equipments. Contractor shall dismount such instruments for calibration and hand over the same to BHEL. C & I erection agency will do storage / re-erection calibration etc.

### 9.26

Fixing and seal welding of thermowells & plugs before Hydro test/ steam blowing of equipment or other piping system is within the scope of work. Contractor shall also remove the seal welded plugs by process of grinding and fix and seal weld thermowells after hydro test/steam blowing of lines as part of work.

### 9.27

Actuators/drives of valves, dampers, gates, powered vanes etc may have to be serviced, lubricated, before erection, during pre-commissioning & commissioning, including carrying out minor adjustments required as incidental to the work.

### 9.28

All electrical motors have to be tested for IR & PI values prior to the trial run. Where required, dry out may have to be carried out by using external heating source. Contractor shall make all arrangements in this regard and complete the work as instructed. BHEL will provide the motorized insulation testers.

### 9.29

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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In installation of various equipments it may become necessary to install these on temporary supports/ hanger due to various reasons including non-availability of suspension materials. Contractor shall install such temporary suspensions/hangers and later on shift the relevant equipments to their respective permanent hangers/ suspensions/ supports as incidental to work. Requisite materials for such temporary arrangements will be provided by BHEL on free - returnable basis which shall be returned to BHEL after the use.

### 9.30

The work shall be carried out strictly in accordance to the "Field Quality Plan" approved by BHEL/client. Contractor, jointly with BHEL, shall prepare all necessary records of measurements/readings/ protocols etc.

### 9.31

All works such as cleaning, levelling, aligning, trial assembly, dismantling of certain equipments / components for checking and cleaning, surface preparation, fabrication of sheets, tubes and pipes as per the general engineering practice and as per BHEL engineers instructions at site, cutting, weld desposing, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scraping, lapping, fitting up etc as may be applicable in such erection works and which are treated incidental to the erection work and necessary to complete the work satisfactorily shall be carried out by the Contractor as part of the work.

### 9.32

Interconnection/ hookup, if any, with the existing system shall form part of work. Such interconnections, hookups may require shut down of running plant and the relevant work have to be completed within such planned shutdowns. This may call for working with enhanced resources and on extended hours. Contractor's offer shall cover all such contingencies.

### 9.33

Contractor shall regulate flow of material to and from site in such a manner and sequence that material accumulation at site does not lead to congestion at site. In case it is necessary to shift and restack the materials kept at work areas / site to enable other agencies to carry out their work or further any other reason, it shall be done by the Contractor most expeditiously. No claim for extra payment for such work will be entertained.

### 9.34

It may so happen that certain components like manhole doors, hanger etc may be supplied in loose items. They need to be assembled as per relevant drawings or as per advice of BHEL engineer prior to erection. This forms the part of the scope of work.

### 9.35

The Contractor shall have total responsibility for all equipment and materials in his custody at Contractor's stores, loose, semi-assembled, assembled or erected by him at site. He shall effectively protect the finished works from action of weather and from damages or defacement and shall also cover the finished parts immediately on completion of work as per BHEL engineer's instructions. The machine surfaces/finished surfaces should be greased and covered.

### 9.36

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-I General

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BHEL is operating web based computerized E-store system that includes, inter-alia, issue of materials, daily progress reporting, Contractor's running monthly billing and material reconciliation through a computerized data management system. Contractor shall install necessary hardware to hook-up with the BHEL's system and use the same for his scope of work.

In the event the computerized E-store/SOMS is inoperative for any reasons, the Contractor shall take delivery of materials from the storage area/sheds of BHEL/customer after getting the approval of the engineer/customer on standard indent forms to be specified by BHEL/customer. All these records however shall be updated in the E-store/SOMS as and when the E-store/SOMS is reactivated/ normalized.

9.37

Gases like argon, oxygen, acetylene etc that are required for erection related activities shall be arranged by the Contractor at his cost. For T-91 material site weld joints argon as per grade-3 of is 5760: 1998 with oxygen and water vapour restricted to max 6 ppm each and with argon purity level of minimum 99.99% shall be arranged and used by the Contractor. The supply should accompany test certificate for the batch indicating individual element 'ppm' level and overall purity level.

9.38

Nitrogen gas, if required, for preservation of boiler and nitrogen capping during chemical cleaning process, will be provided by BHEL free of charge. Contractor shall arrange necessary connector, nipple, regulator, header and piping for usage of such gas from cylinders.

9.39

All lubricants and chemicals required for testing, preservation, chemical cleaning / acid cleaning, oil flushing, and the lubricants for trial runs of the equipments and trial operation of the unit will be supplied by BHEL free of charges.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-II LINING & INSULATION

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### 10 LINING AND INSULATION

Application of insulation, finishing, cladding and outer casing etc as **per BOQ detailed in scope of work (Chapter II)**

#### 10.1

The work shall conform to dimension and tolerances specified in the various drawing and documents that will be provided during the execution. if any portion of the work is found to be defective in workmanship or not conforming to drawings or other specifications, the Contractor shall dismantle and re-do the work duly replacing the defective materials at his cost, failing which the work will be got done by engaging other agencies or departmentally and recoveries will be deducted from Contractor's bills towards expenditure incurred including 30% departmental charges.

#### 10.2

The terminal points as decided by BHEL shall be final and binding on the Contractor.

#### 10.3

All insulation materials including iron components and outer sheet casing materials, cladding sheets etc required will be supplied by BHEL and the same have to be erected/ applied as per the drawings and specifications of BHEL by the Contractor.

#### 10.4

The Contractor shall provide all the necessary scaffolding materials, temporary structures and necessary safety devices etc, during all stages of work. Scaffolding materials (poles, gratings etc) shall be of light weight construction. Contractor shall arrange steel pipes & clamps with accessories like base plate attachment, fixing pins, struts etc for scaffolding required for this work. However, BHEL's decision in this regard shall be final and binding. Contractor shall arrange the scaffolding materials in sufficient quantity.

The Contractor shall provide the required quantity of wire, nails, and planks for formwork and other materials for shuttering and curing works.

#### 10.5

Contractor shall observe all precaution for laying, curing etc of pourable insulation. the Contractor at his own cost shall redo any defective works found.

#### 10.6

Wool insulation is received at site as loose bonded mattresses in standard sizes. These are to be dressed/cut to suite the equipments. Multiple layers of wool have to be applied as directed and as per drawings and specifications for all equipments/ systems covered under the scope of work.

#### 10.6

Cutting & dressing of insulation bricks to suit the site area of application is incidental to work.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-II LINING & INSULATION

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10.7

Removable type of insulation has to be provided for valves fittings, expansion joints etc as per drawing or as directed by BHEL Engineer.

10.8

The cladding and outer casing are aluminium sheets. All relevant specifications and procedures with regards to beading, sealing etc for aluminium sheets have to be adhered to.

10.9

Cladding/outer casing shall be fixed expeditiously, so as to avoid damage to the insulation from the weather.

10.10

The overlapping surface of outer casing/cladding sheet shall be coated with sealing compound, which will be supplied by BHEL free of cost.

10.11

To take care of bimetal corrosion due to variety of metals in contact of each other viz retainer to support, support to outer casing/cladding, cladding-to-cladding etc, suitable paints specified by BHEL, to be applied and/or neoprene rubber packing/strips or any other insert may have to be fixed as required.

10.12

The Contractor shall leave certain gaps and openings while doing the work as per the instructions of BHEL Engineer to facilitate inspection by boiler inspector or during commissioning to fix gauges, fittings, instruments etc. these gaps will have to be finished as per drawings at later date by the Contractor at his cost.

Contractor shall cut open works in needed as per BHEL Engineer's instructions during commissioning for inspection, checking and make good the works after inspection is over without any extra payment.

10.13

A log book shall be maintained by the Contractor for the clearance of the area for application of refractory and insulation. Where the Contractor does the work on his own accord without prior permission, the work should be re-done, at his own cost, where necessitated.

10.14

Wastage allowances for the material issued are envisaged as follows:

➤ a	Pourable & castable insulation	-	2%
➤ b	Insulation bricks and mortar	-	2%
➤ c	Wool mattresses	-	2%
➤ d	Cladding sheets	-	2%

The wastage allowance will be applicable on the net issued quantity i.e. total quantity issued reduced by the quantity returned to stores as unused/fresh item. Contractor shall reconcile the material issues periodically as prescribed by BHEL site.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-II LINING & INSULATION

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### 10.10

The following works are also included in the scope of this contract.

Cutting of cladding sheets as per the profile of the equipment and painting on inner surface two coats of bituminous paint. Paint will be supplied by Contractor.

Cutting of the wool mattresses in the required shape and application of finishing cement of required thickness wherever required.

### 10.16

Insulation work of temporary piping for alkali boil out, steam blowing and chemical cleaning has to be carried out at site. The same have to be removed and returned to the BHEL stores after the completion of activity. Rates quoted for application of wool for boiler and auxiliaries will be applicable for this work also. No separate payment will be made for removal of temporary insulation and return of the same to BHEL stores/yard.

### 10.17

In certain instances, co-ordinated/phased application of castable refractory/ insulation on pressure parts etc may be necessitated in consideration of sequence of activities of other erection agencies. Contractor shall do such phased work as may be directed by BHEL.

### 10.18

Prior to application of refractory bituminous painting on the pressure parts and other area is under Contractor scope. The bituminous paint will be supplied by Contractor. No separate payment will be made for application of paint.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-III PRESERVATION & PROTECTION OF COMPONENTS

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### 11.1 PRESERVATION & PROTECTION OF COMPONENTS

At all stages of work, equipments/materials in the custody of Contractor, including those erected, will have to be preserved as per the instructions of BHEL. Necessary preservation agents including the primer & paint, for the above work shall be provided by the Contractor.

### 11.2

The Contractor shall make suitable security arrangements including employment of security personnel and ensure protection of all materials/ equipment in their custody and installed equipments from theft/fire/pilferage and any other damages and losses.

### 11.3

Contractor shall collect all scrap materials periodically from various area of work site, deposit the same at one place earmarked at site or shift the same to a place earmarked in BHEL/ client's stores. In case of failure of Contractor in compliance of this requirement, BHEL will make suitable arrangement at Contractor's risk and cost.

### 11.4

The entire surplus, damaged, unused materials, packaging materials / containers, special transporting frames, gunny bags, etc shall be returned to BHEL stores by the Contractor.

### 11.5

The Contractor shall not waste any materials issued to him. In case it is observed at any stage that the wastage/excess utilisation of materials is not within the permissible limits, recovery for the excess quantity used or wasted will be effected with departmental charges from the Contractor. Decision of BHEL on this will be final and binding on the Contractor.

### 11.6

For any class of work for which no specifications have been laid down in these specifications, work shall be executed as per the instructions of BHEL.