

# **TENDER SPECIFICATION**

**BHE/PW/PUR/SKT-GRP/1257**

FOR

COLLECTION OF MATERIALS FROM BHEL STORAGE YARD INCLUDING OUTSIDE STORAGE YARD/ CLIENT'S STORES TRANSPORTATION TO SITE OF WORK; COMPLETE WORK OF LAYING, COUPLING/ FASTENING, SUPPORTING/ CLAIMPING ETC CONDUCTING VARIOUS FIELD CHECKS, COMMISSIONING AND HYDRO TEST ETC. OF BALANCE GRP PIPING FOR 2x270 MW TPS (UNIT Nos. 3 & 4)

AT

**SIKKA THERMAL POWER STATION  
GUJARAT STATE ELECTRICITY CORPORATION LIMITED  
DISTT- JAMNAGAR  
GUJARAT**

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**

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# **Tender Specification Issue Details**

**BHE/PW/PUR/SKT-GRP/1257**

FOR

**COLLECTION OF MATERIALS FROM BHEL/ CLIENT'S STORES/ STORAGE YARD;  
TRANSPORTATION TO SITE OF WORK; COMPLETE WORK OF LAYING, COUPLING/  
FASTENING, SUPPORTING/ CLAIMPING ETC CONDUCTING VARIOUS FIELD CHECKS,  
COMMISSIONING AND HYDRO TEST ETC. OF GRP PIPING FOR 2x270 MW TPS (UNIT  
Nos. 3 & 4)**

AT

**SIKKA THERMAL POWER STATION  
GUJARAT STATE ELECTRICITY CORPORATION LIMITED  
DISTT- JAMNAGAR  
GUJARAT**

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 :

1257

# NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



**BHEL PSWR**  
**Notice Inviting Tender**  
**Tender Specification No: BHE/PW/PUR/SKT –GRP/1257**

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Ref: BHE/PW/PUR/SKT-GRP/ 1257

Date: 11/04/2014

**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	<i>BHE/PW/PUR/SKT-GRP/ 1257</i>
ii	Broad Scope of job	COLLECTION OF MATERIALS FROM BHEL STORAGE YARD INCLUDING OUTSIDE STORAGE YARD/ CLIENT'S STORES TRANSPORTATION TO SITE OF WORK; COMPLETE WORK OF LAYING, COUPLING/ FASTENING, SUPPORTING/ CLAMPING ETC CONDUCTING VARIOUS FIELD CHECKS, COMMISSIONING AND HYDRO TEST ETC. OF BALANCE GRP PIPING FOR 2x270 MW TPS (UNIT Nos. 3 & 4) AT SIKKA THERMAL POWER STATION GUJARAT STATE ELECTRICITY CORPORATION LIMITED DISTT- JAMNAGAR GUJARAT
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> <span style="float: right;"><i>Applicable</i></span>
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> <span style="float: right;"><i>Applicable</i></span>
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> <span style="float: right;"><i>Applicable</i></span>
d	Volume-ID	<i>Forms and Procedures</i> <span style="float: right;"><i>Applicable</i></span>
e	Volume-II	<i>Price Schedule (Absolute value).</i> <span style="float: right;"><i>Applicable</i></span>

Registered Office: BHEL House, Siri Fort, New Delhi – 110 049, India  
Website: www.bhel.com

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iv	Issue of Tender Documents	<p>1. <u>Sale from BHEL PS Regional office at :</u>  <b>Start :11/04/2014</b>  <b>Closes : 19/04/2014, Time : 16.00 hrs</b></p> <p>2. From BHEL website (<a href="http://www.bhel.com">www.bhel.com</a>)  Tender documents will be available for downloading from website till due date of submission</p>	Applicable
v	DUE DATE & TIME OF OFFER SUBMISSION	<p><b>Date : 21/04/2014 Time : 15.00 hrs</b>  <b>Place : BHEL, PSWR Nagpur HQ.</b></p> <p>Tenders being submitted through representative shall be handed over to any of the following BHEL officials <b>after making entry/registration at the reception:</b></p> <p><b>Pratish Gee Varghese/ Engineer(Purchase)</b>  <b>Nirmal P.G/ Asst.Engineer(Purchase)</b>  <b>Shivkesh Meena /engineer (Purchase)</b></p>	Applicable
vi	OPENING OF TENDER	<p><b>Date: 21/04/2014 Time : 16.00 hrs</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	EMD AMOUNT	<b>Rs. 1.5 Lakhs</b>	Applicable
viii	COST OF TENDER	<b>Rs 2000/-.</b>	Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	<p>2 days before the latest due date for offer submission.  Along with soft version also, addressing to undersigned &amp; to others as per contact address given below  Bidders are requested send all queries to the following e-mail ids;</p> <p><a href="mailto:pgv@bhelswr.co.in">pgv@bhelswr.co.in</a>  <a href="mailto:svm@bhelswr.co.in">svm@bhelswr.co.in</a>  <a href="mailto:nirmalpg@bhelswr.co.in">nirmalpg@bhelswr.co.in</a> (PH: 0712-3048713)</p>	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)		Not applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)		Not Applicable
xii	Latest updates	Latest updates on the important dates,	

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		<b>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) <u>and not in the newspapers</u>. Bidders to keep themselves updated with all such information</b>	
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- 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 &	

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	<p>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.</p> <p>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.</p> <p>i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p>ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p>	
iii.	<p>Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria.</p> <p>It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.</p>	
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 : Technical 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>		
	<p><b>ENVELOPE – II superscribed as:</b>            PART-I (EMD/COST of TENDER)            TENDER NO :            NAME OF WORK :            PROJECT:            DUE DATE OF SUBMISSION:</p> <p><b>CONTAINING THE FOLLOWING:-</b></p>	
i.	<p>1. Earnest Money Deposit (EMD) in the form as indicated in this Tender  <u>OR</u>            Documentary evidence for 'One Time EMD' with the Power Sector Region of BHEL floating the Tender</p> <p>2. Cost of Tender ( Demand Draft or copy of Cash Receipt as the case may be)</p>	

<b>PART-II</b>		
	<b>PRICE BID</b> consisting of the following shall be enclosed	
	<b>ENVELOPE-III</b>	

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

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- 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):

**Aggregate of Performance scores for all similar packages in all the Regions**  
 = .....

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**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
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	P <sub>1</sub>	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>	...	P <sub>N</sub>	Total No of similar packages for all Regions = P <sub>T</sub> ie Sum (Σ) 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 corresponding similar Package ( as in row 1)	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>	T <sub>5</sub>	...	T <sub>N</sub>	Sum (Σ) of columns (iii) to (ix)  = T <sub>T</sub>
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

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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:

- a) 'Period of Assessment.
- b) 12 months preceding the cut-off month
- c) 24 months preceding the cut-off month
- d) 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:

- i. 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
- ii. For R<sub>BHEL</sub> = 60, P<sub>Max</sub> = '1'
- iii. For R<sub>BHEL</sub> ≥ 80, there will be no upper limit on P<sub>Max</sub>

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

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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 ii). Pile and Pile Caps iii). Civil Works including foundations iv). Structural Steel Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil)	i). Electrical ii). CI iii). Others (Elec & CI)	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). LP Piping iv). ESP v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux 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'.

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.

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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 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.

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- 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

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- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'
- 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

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- 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

for BHARAT HEAVY ELECTRICALS LTD

AGM Purchase

**Enclosure**

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

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**ANNEXURE - 1**

**PRE QUALIFYING CRITERIA**

JOB	COLLECTION OF MATERIALS FROM BHEL/CLIENT'S STORES/STORAGE YARD; TRANSPORTATION TO SITE OF WORK; COMPLETE WORK OF LAYING, COUPLING/ FASTENING, SUPPORTING/ CLAMPING ETC CONDUCTING VARIOUS FIELD CHECKS, COMMISSIONING AND HYDRO TEST OF GRP PIPING ETC AS PER TENDER SPECIFICATION PART-I TECHNICAL BID AND SUBSEQUENT CORRIGENDUMS OF GRP PIPE OF 2x270 MW TPS (UNIT Nos. 3 & 4 ATSIKKA THERMAL POWER STATION GUJARAT STATE ELECTRICITY CORPORATION LIMITED DISTT- JAMNAGAR, GUJARAT
TENDER NO	BHE/PW/PUR/SKT-GRP/1257

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
A	Submission of Integrity Pact duly signed	APPLICABLE (Bidders shall submit duly filled & Signed Annexure III of NIT)	
D	Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT	APPLICABLE	
B	<p><b><u>Technical</u></b></p> <p><b><u>Bidder must have, achieved/Executed any one of the following in last seven years as on the latest date of offer Submission.</u></b></p> <p><b>B.1)</b> One job of GRP/ LP / HP/CW piping of Value Rs.48 Lakhs or higher in any industry/Power Plant/Infrastructure project.</p> <p style="text-align: center;">OR</p> <p><b>B.2)</b> Two jobs of GRP/LP /HP/CW piping each of Value Rs. 30 Lakhs or higher in any industry/Power Plant/Infrastructure project.</p> <p style="text-align: center;">OR</p> <p><b>B.3)</b> Three job of GRP/LP /HP/CW piping of each Value Rs. 24 Lakhs or higher in any industry/Power Plant/Infrastructure project.</p>		
C.1	<p><b><u>Financial</u></b></p> <p><b><u>TURNOVER</u></b></p> <p>Bidders must have achieved an average annual</p>		

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	financial turnover (Audited) of <b>18 lakhs</b> or more over last three Financial Years (FY) i.e 2011-2012, 2012-2013, 2013-14 OR 2010-2011, 2011-12 and 2012-13 if Annual Accounts for FY 2013-14 are not audited.		
C.2	<b>NETWORTH</b> Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C1' above should be positive		
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 years defined in 'C1' above based on latest Audited Accounts.		
E	Approval of Customer Note: Names of bidders who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval. Price bid of only those bidders shall be opened who are approved by customer.	<b>APPLICABLE</b>	
F	Consortium criteria	<b>NOT APPLICABLE</b>	
<p><b>Explanatory Notes for QR</b></p> <ol style="list-style-type: none"> <li>1. 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>2. 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>3. C-2:-<b>NETWORTH</b> : 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>4. C-3:- <b>PROFIT</b> : 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>5. 'Additional' Criteria in respect of 'Technical' criteria of PQR (as in 'B' above) for Civil, Electrical, CI, unless otherwise specified : <ol style="list-style-type: none"> <li>1. Bidder should have executed similar work of any one of the following: <ol style="list-style-type: none"> <li>a. One (1) work of value not less than Rs XXX OR</li> <li>b. Two (2) works of not less than Rs YYY OR</li> <li>c. Three (3) works of not less than Rs ZZZ (Value XXX, YYY, ZZZ shall be as indicated by BHEL</li> </ol> </li> <li>2. 'Similar' work for criteria 5 above means <ol style="list-style-type: none"> <li>a. Civil or Structures or Civil &amp; Structures or Chimney respectively as applicable to</li> </ol> </li> </ol> </li> </ol>			

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	<p style="text-align: center;">the tendered scope in respect of 'CIVIL' Works</p> <p><del>b. Electrical works in respect of 'ELECTRICAL'</del></p> <p><del>c. CI works in respect of 'CI' Works</del></p> <p><del>d. Material Handling and/or Management works in respect of 'MM' works</del></p> <p>6. 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</p> <p>7. '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</p> <p>8. 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. <del>"CHARGING" in respect of power Transformers, Bus ducts, HT/LT switchgears</del></li><li>6. <del>"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.</del></li><li>7. <del>Achievement of physical Quantities as per respective PQRs in respect of Civil &amp; Structures and Piling Works</del></li><li>8. <del>'Readiness for coal Filling' in respect of Bunker Structure Work.</del></li></ol> <p>9. Boiler means HRSG or WHRB or any other types of Steam Generator</p> <p>10. <del>Critical/Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass, LP Bypass lines</del></p> <p>11. 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>12. <del>In case the experience/POWO certificate enclosed by bidders do not have separate break up prices for the E&amp;C portion of Electrical and CI Works, (i.e. the certificates enclosed are for composite order for supply and erection of Electrical &amp; CI and other works if any), then value of Erection and Commissioning for the Electrical &amp; CI portion shall be considered as 15% of the supply &amp; erection of Electrical &amp; CI, unless otherwise specifically indicated in the PQR.</del></p> <p>13. <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>14. In case the tendered scope is not a Pulverised Fuel Boiler, experience of Oil/Gas Fired Boilers also can be considered unless otherwise specifically indicated in the PQR.</p> <p>15. <b>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 upto 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 IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

**ANNEXURE 2:**

**IMPORTANT INFORMATION**

1. It may be recalled here that:-  
**Already about 25% of work of Erection is completed in various stages viz. Placement, Levelling/ alignment, Bolting, NDT etc. Wherever the mention of Scope of work occurs the same shall construe / refer to the Balance work in respective areas.**
2. **BHEL Store is located outside the Project Premises at about 4 KM distance from erection site.**
3. **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 )**
4. All Statutory Requirements as applicable for this project shall be complied with.
5. 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 .
6. Following Notes are added to Form F- 15 of Volume I D 'Forms & procedures'
  - i. It is only indicative and shall be as per the online format issued by BHEL time to time.
  - ii. No request will be entertained after specified date of the current month w.r.t the changes requested in the scores of immediate previous month.
7. **PVC (Price Variation Clause) & ORC (Overrun compensation) as per General Conditions of Contract shall not be applicable for this tender.**
8. 'Assessment of capacity of bidders' as per sl no. 9 of NIT shall be evaluated by considering LP & Power cycle Piping jobs as similar package.

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**9. 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

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**ANNEXURE - 3**

**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	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Fax No:	
4	EMD DETAILS	DD No:                      Date : Bank :                              Amount: Please tick ( √ ) whichever applicable:- ONE TIME EMD / ONLY FOR THIS TENDER	
		APPLICABILITY	BIDDER REPLY
5	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
6	Whether Audited profit and Loss Account for the last three years submitted	Applicable	YES/NO
7	Whether Copy of PAN Card submitted	Applicable	YES/NO
8	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable	YES/NO
9	Integrity Pact	Not Applicable	Not Applicable
10	Declaration by Authorised Signatory	Applicable	YES/NO
11	Whether No Deviation Certificate submitted	Applicable	YES/NO
12	Whether Declaration confirming knowledge about Site Conditions submitted	Applicable	YES/NO
13	Whether Declaration for relation in BHEL submitted	Applicable	YES/NO
14	Whether Non Disclosure Certificate submitted	Applicable	YES/NO
15	Whether Bank Account Details for E-Payment submitted	Applicable	YES/NO
16	Capacity Evaluation of Bidder for current Tender	Applicable	
17	Tie Ups/Consortium Agreement are submitted as per format	Not Applicable	Not Applicable
18	Whether Power of Attorney for Submission of Tender/Signing Contract Agreement submitted	Applicable	YES/NO
19	Whether Analysis of Unit rates submitted	Applicable	YES/NO

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NOTE: STRIKE OFF 'YES' OR 'NO', AS APPLICABLE

AUTHORISED SIGNATORY

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS  
LIMITED



<b>SI No</b>	<b>DESCRIPTION</b>	<b>Chapter</b>	<b>No. OF PAGES</b>
<b>Volume-IA</b>	<b>Part-I: Contract specific details</b>		
1	Project Information	Chapter-I	2
2	Scope of Works	Chapter-II	1
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III	7
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	2
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	1
6	Time Schedule	Chapter-VI	1
7	Terms of Payment	Chapter-VII	2
8	Taxes and other Duties	Chapter-VIII	2
9	Quantity & Measurements	Chapter-IX	2
10	Annexure I	Chapter-X	1
11	General	Chapter-XI	5
12	GRP Piping Erection	Chapter-XII	6
13	Testing, Pre-Commissioning, Commissioning	Chapter-IV	2
14	Preservation & Protection of Components	Chapter-V	1

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

	<b>Project Information</b>										
<b>1.1</b>	<p><b>INTROUCTION</b></p> <p>Sikka Thermal Power Station is presently having two sets (units) of 120 MW units in operating condition. The plant owner M/s Gujarat State Electricity Corporation Limited (GSECL) has undertaken expansion of this power plant by installing two units of 250 MW each (name plate rating) in the same premises. Though both the new units are of 250 MW name plate rating, they are guaranteed to produce an output of 270 MW each.</p> <p>The Bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on BHEL/ Owner. All relevant site data/information as may be necessary shall have to be obtained /collected by the Bidder.</p>										
<b>1.2</b>	<p><b>LOCATION AND APPROACH</b></p> <p>In Sikka, Jamnagar district, Latitude 22<sup>o</sup> 26' N &amp; Longitude 69<sup>o</sup> 49' E. The site is surrounded by villages Mungai, Sikka, Gagva &amp; Nanikkhavri of Jamnagar district of Gujarat state.</p> <p><b><u>Access by Road:</u></b> It is connected to State Highway (SH-25) by a 5 km long road through Sikka village.</p> <p><b><u>Access by Railways:</u></b> Jamnagar – Okha broad-gauge section is passing at a distance of 12 km form Sikka.</p> <p><b><u>Nearest Airport:</u></b> Jamnagar</p> <p><b><u>Nearest Seaport:</u></b> Okha &amp; Navalakhinare located 140 Km &amp; 130 Km respectively from the site.</p>										
<b>1.3</b>	<p><b><u>Other Salient Information:</u></b></p> <table><tbody><tr><td>1. Owner</td><td>M/s GSECL</td></tr><tr><td>2. Owner's Consultant</td><td>M/s TCE, Bangalore</td></tr><tr><td>3. Project Title</td><td>2x250 MW Sikka TPS Extension Units # 3 &amp; 4</td></tr><tr><td>4. Location</td><td>12 km from Sikka, District – Jamnagar, Gujarat</td></tr><tr><td>5. Nearest Railway Stn.</td><td>Jamnagar</td></tr></tbody></table>	1. Owner	M/s GSECL	2. Owner's Consultant	M/s TCE, Bangalore	3. Project Title	2x250 MW Sikka TPS Extension Units # 3 & 4	4. Location	12 km from Sikka, District – Jamnagar, Gujarat	5. Nearest Railway Stn.	Jamnagar
1. Owner	M/s GSECL										
2. Owner's Consultant	M/s TCE, Bangalore										
3. Project Title	2x250 MW Sikka TPS Extension Units # 3 & 4										
4. Location	12 km from Sikka, District – Jamnagar, Gujarat										
5. Nearest Railway Stn.	Jamnagar										
<b>1.4</b>	<b>CLIMATIC CONDITIONS</b>										

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - I : Project Information

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1.Ambient Air Temperature	
a. Maximum	42 Deg. C
b. Minimum	8 Deg. C
2. Relative Humidity	
c. Maximum	100%
d. Minimum	21%
3.Rainfall	
e. Average annual	650 mm
f. Maximum	900 mm
g. Minimum	400 mm
4.Wind Data	
h. Basic wind speed at 10m height	50 m/sec
i. Wind pressure	As per IS: 875 Part III
5.Seismic Zone	Zone IV as per IS: 1893-2002

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter - II : Scope of works

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### 2.0 SCOPE OF WORK

Scope of Balance Works in Unit # 3/4 Sikka under subject tender:

This contract is the Balance GRP work left out from previous agency's scope. All exhaustive materials' description, quantities and Measurements are already mentioned elsewhere in this contract (SI No A above) to give an indication to BIDDERS as what constitute a whole GRP Work which they have to complete and commission and shall be responsible for PERFORMANCE GUARANTEE.

The applicable BOQ under subject tender is given below which may vary subject to revisions, additions or deletions during the course of execution of this project

The scope of work covers the complete work of collection of GRP materials from BHEL/ client's stores/ yard including loading; transportation to site; pre-assembly, erection, testing and assistance for commissioning, etc and handing over of :

1. GRP (GLASS RE-INFORCED PLASTIC), over ground and buried all with associated accessories etc.
2. Any other pipeline contingent to completion of the aforesaid systems

### 2.1 DETAILED SCOPE

1. Collection & loading of materials from BHEL's & client's stores/ storage yard
2. Transportation to site of work/ pre-assembly yard and unloading
3. Pre-assembly, if any; pre-erection, check of components
4. Loading, transportation from pre-assembly area to site of work & unloading
5. Erection, alignment, bolting / fastening of pipes, accessories, manhole doors, ladders etc.
6. Fabrication and erection of supports
7. Non-destructive examination of joints
8. Hydraulic test of piping
9. Pre-commissioning checks/ tests and providing assistance for commissioning
10. Handing Over

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 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 engaging other agencies and recoveries will be effected from the contractor's bills towards expenditure incurred including departmental overheads of BHEL.

**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	
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>			
a	Open space for labour colony (as per availability)		Yes	Electricity, Water etc for Labour colony is also in the scope of Contractor
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	

**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	
3.2.0	<b>ELECTRICITY</b>			
3.2.1	<b>Electricity For construction purposes 3 Phase of Voltage 415/440 V</b>			FREE
a	Single point source	Yes		at one point near the erection site
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>			FREE
a	Single point source	Yes		
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>		Yes	Bidder to make his own arrangement
a	Single point source		Yes	

**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	
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: (to be specified whether chargeable or free)</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	.
3.3.2	<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>		<b>yes</b>	Bidder to make his own arrangement

**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	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	<b>LIGHTING</b>			
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	

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

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Sl.No	Description <b>PART I</b>	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.6.0	<b>COMPRESSED AIR wherever required for the work</b>		Yes	
3.7.0	<b>Demobilization of all the above facilities</b>		<b>YES</b>	
3.8.0	<b>TRANSPORTATION</b>			
a	For site personnel of the bidder		Yes	
B	For bidder's equipments and consumables (T&P, Consumables etc)		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	
3.9.1	Engineering works for construction:			
a	Providing the erection/constructions drawings for all the equipments covered under this scope	Yes		<b>For Details PI refer Chapter-II-</b>
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	Yes		
d	Shipping lists etc for reference and planning the activities	Yes		
e	Preparation of site erection schedules and other input requirements		Yes	In consultation with BHEL
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on Sl. No. e		Yes	In consultation with BHEL

**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	
h	Daily erection/ work plan based on Sl. No. g		Yes	In consultation with BHEL
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: T&Ps and MMEs to be deployed by Contractor**

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**4.0 : TOOLS & PLANTS TO BE DEPLOYED BY CONTRACTOR**

<b>SL</b>	<b>DESCRIPTION OF EQUIPMENTS</b>	<b>CAPACITY</b>	<b>MIN. QTY</b>
01	Telescopic mobile hydraulic operated crane	14/16 MT	04 NO. - THIS HAS TO BE DEPLOYED FROM THE BEGINNING
02	TRAILER WITH PRIME MOVER	10 MT or more	1 NO. - THIS HAS TO BE DEPLOYED FROM THE BEGINNING NO.
03	DEWATERING PUMP –VACUUM SUCTION, COMPLETE WITH MOTOR, STARTER, CABLES, SWITCHES ETC.	5 to 10 HP	AS PER REQUI'MENT
04	CENTRIFUGAL PUMP WITH MOTOR, STARTER PANEL, CABLES BETWEEN STARTER PANEL AND MOTORS, INLET AND OUTLET VALVES FOR THE PUMPS FOR FILLING AND HYDRAULIC TESTING OF CW, ACW SYSTEMS	150-200TPH	2 SETS
05	HYDRAULIC TEST PUMPS, COMPLETE WITH MOTOR, STARTER, CABLES, SWITCHES ETC - HIGH DISCHARGE CAP. – ABOVE 15 LIT/MIN	AS PER REQUI'MENT	2 NOS
06	24 V TRANSFORMERS WITH CABLING, SAFETY BULBS HOLDER WITH GUARD AND 24 V LAMPS	24 V OUTPUT	4 NOS
07	3 PH DISTRIBUTION BOARD WITH COMPLETE SET UP FOR DRAWL OF CONSTRUCTION POWER	300 AMP	2 NOS.
08	ELECTRIC CABLE FOR DRAWL & DISTRIBUTION OF CONSTRUCTION POWER	-	AS PER SITE REQMNT
09	WELDING GENERATOR (ELECTRIC & DIESEL)	300 AMPS	01 SET
10	TORQUE WRENCH 0 TO 200 N-M CAP	AS PER REQUIREMENT	AS PER REQUIREMENT
11	FLAT NON METALLIC ENDLESS BELT/ SLINGS	AS PER	AS PER

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

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	WITH D- SHACKLES OF VARIOUS CAPACITY AND QUANTITIES FOR HANDLING OF EQUIPMENTS	REQUIREMENT	REQUIREMENT
13	FEELER GAUGES OF VARIOUS SIZES	AS PER REQUIREMENT	AS PER REQUIREMENT
14	SPANNERS / EYE BOLTS ( OF ALL SIZES)	AS PER REQUIREMENT	AS PER REQUIREMENT
15	ANY OTHER MAJOR T&P REQUIRED FOR SATISFACTORY COMPLETION OF THE WORKS.	AS PER REQUIREMENT	AS PER REQUIREMENT

**B: MMD:**

AS PER SITE REQUIREMENT TO FULFILL FIELD QUALITY PLAN CHECKS.

NOTE:

- 1) THE ABOVE LIST IS NOT INTENDED TO BE EXHAUSTIVE. CONTRACTOR SHALL ARRANGE ALL THE T&P REQUIRED THOUGH NOT LISTED SPECIICALLY EXCEPTING THOSE PROVIDED BY BHEL.
- 2) ALL THE SMALL TOOLS & PLANTS ETC. HAVE TO BE PROVIDED BY THE CONTRACTOR.

**2.0 : SPECIAL T&Ps SHALL BE PROVIDED BY BHEL/AGENCY (GRP PIPE SUPPLY) FOR GRP PIPING WORKS ONLY**

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

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**BHEL SHALL NOT PROVIDE ANY T&PS.**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter – VI: Time Schedule

### 6.1 TIME SCHEDULE & MOBILIZATION

Contractor shall reach site, make his site establishment and be ready to commence the work within **One week** from the date of Letter of Intent (LOI) or as per directions of Construction Manager of BHEL.

#### 6.1.2 MOBILIZATION FOR ERECTION, TESTING, ASSISTANCE FOR COMMISSIONING ETC.

The activities for erection, testing etc. shall be started as per directions of Construction Manager of BHEL. Contractor shall mobilize further resources (in addition to those required for activities under chapter IV) as per requirement to commence the work of erection, testing etc. of GRP. works and progressively augment the resources to match schedule of the project.

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

Erection/ placement on its designated foundation/ location, of the first permanent equipment / component instructed by Construction Manager or concerned Engineer, covered in the scope of these specifications shall be recognized as “start of contract period”. A certificate of “start of contract period” shall be issued by Construction Manager immediately after start of work..

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

SN	ACTIVITY/MILESTONE	TENTATIVE SCHEDULED COMPLN	
		UNIT#3	UNIT#4
01	BOILER LIGHT UP FOR STEAM BLOWING	25-Jun 14	25-July 14
02	COMPLETION OF PENDING POINTS	05-July 14	05-Aug 14
03	PREPARATION AND SUBMISSION OF AS-BUILT DRAWINGS	10-August 14	10-August 14
04	MATERIAL RECONCILIATION AND FINAL BILL SUBMISSION	20-August 14	20-August 14

In order to meet above schedule in general, and any other intermediate priorities/ targets set, to meet customer/ project schedule requirements, Contractor shall arrange, increase & 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 **04 (Four) months** from the “start of contract period as specified earlier.

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

7.1 :

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

<b>TERMS OF PAYMENT FOR GRP PIPING</b>		
	Rate schedule Identification	1) GR Piping
<b>I</b>	<b>PRO RATA PAYMENTS (75%)</b>	
1.1	PLACEMENT IN POSITION	30
1.2	ALIGNMENT, BOLTING/FIXING	20
1.3	COMPLETION OF NON DESTRUCTIVE EXAMINATION	5
1.4	HYDRAULIC TEST OR PNEUMATIC TEST	20
1.5	<b>TOTAL FOR PRO RATA PAYMENTS (TOTAL 75%)</b>	<b>75</b>
<b>II</b>	<b>STAGE/MILESTONE PAYMENTS (25%)</b>	
2.1	Completion of GRP Package for Steam Blowing	5
2.2	Trial Operation of Unit	5
2.3	Completion of all drains and vents to respective locations and placement of instrument sensors after steam blowing	1
2.4	Punch List points/pending points liquidation	2
2.5	Submission of 'As Built Drawings'	5
2.6	Material Reconciliation	2
2.7	Completion of Contractual Obligation	5
2.12	<b>TOTAL FOR STAGE/MILESTONE PAYMENTS (25%)</b>	<b>25</b>
2.13	<b>TOTAL I + II</b>	<b>100</b>

**NOTES:**

1. Besides product groups indicated herein, there is likelihood of addition of new product groups by BHEL' s unit for release of some items, integral to this work. Tenderers' quoted unit rates shall be applicable for such product groups also.
2. BHEL' s decision with regard to classification of a particular product group for applicable rate category shall be final & binding on the Contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter –VIII : TAXES & 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 VAT/CST paid for the contract in the prescribed format of the respective state VAT laws. Also, the

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter –VIII : TAXES & DUTIES

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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-IX : Quantity & Measurement**

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**9.0 : Detailed Bill of Quantities applicable are:**

**GRP MATERIAL BOQ:**

S. NO.	ITEM DESCRIPTION	MATERIAL SPECIFICATION	UOM	QUANTITY METERS/NOS
1	PIPE NB 2200 - ( Bare pipe )	GRP	Mtrs	957
2	MITRE BEND 2200NB(1.0D) 90DEG	GRP	Nos	6
3	MITRE BEND 2200NB(1.0D) 60 DEG	GRP	Nos	10
4	MITRE BEND 2200 NB (1.0D) 30DEG	GRP	Nos	5
5	MAN HOLE	GRP	Nos	15
6	INSIDE LAMINATION JOINT (2200NB)	GRP	Nos	114
7	OUTSIDE LAMINATION JOINT (2200NB)	GRP	Nos	37
8	INSIDE/OUTSIDE LAMINATION JOINT(600NB)	GRP	Nos	17

The applicable BOQ under subject tender is given below which may vary subject to revisions, additions or deletions during the course of execution of this project

BHEL reserves the right to include or exclude any item which is required for completing the job as per rates indicated in rate schedule. Contractor should carry out all such jobs as per the instructions of BHEL engineer. This contract is the Balance work left out from previous agency's scope. All exhaustive materials' description, quantities and measurements are already mentioned elsewhere in this contract (SI No A above) to give an indication to BIDDERS as what constitute a whole GRP work which they have to complete and commission and shall be responsible for PERFORMANCE GUARANTEE.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-IX : Quantity & Measurement

### 9.1 SUMMARY BOQ FOR PIPING

SUMMARY OF BILL OF QUANTITY OF GRP PIPING WORK – COMPLETED VERSUS BALANCE  
DETAILS OF GRP PIPING (2200 NB)

SN	DESCRIPTION		UNIT	QTY.
1	ERECTION, LAYING, ALIGNMENT, LAMINATION, FABRICATION, COMMISSIONING, HYDRO TEST OF 2200 NB OF GRP (Glass Reinforced Plastic) PIPING			
1.A	Total length of GRP piping as per original Contract		Inch-Dia-Mtr.	126270
			Mtr.	1426
1.B	Actual total work at site as per drawing to be laid		Inch-Dia-Mtr.	117262.5
			Mtr.	1325
1.C	Total laying completed as on date by pre. Sub contractor		Inch-Dia-Mtr.	32608
			Mtr.	368
1.C	Balance work of GRP piping to be laid		Inch-Dia-Mtr.	84654.5
			Mtr.	957
2	Total Lamination Joint	Inside Joint (2200 NB)	Nos.	114
		Outside Joint (2200 NB)	Nos.	37
		Inside/Outside Joint (600 NB)	Nos.	17
3	Total Bend & MH Details	30 Deg.	Nos.	05
		60 Deg.	Nos.	10
		90 Deg.	Nos.	06
		MH	Nos.	17
3.A	Total Bend erection by pre. Sub contractor		Nos.	0
3.B	Total MH erection by pre. Sub contractor		Nos.	2
<p><b>NOTE:</b></p> <p>1) GRP (Glass Reinforced Plastic) Pipe supplied by M/s GRAPHITE INDIA LTD.</p> <p>2) It is a special pipe different to CS pipe. It is a specialized job</p> <p>3) Coupling of GRP pipes is special type of joint by chemical called "Lamination Joint" between two GRP pipe ends from inside/outside</p> <p>4) The jointing of pipe is only coupling based joint. Pipe shall be buried unc sand after jointing of pipe</p>				

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-X : Annexure I

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### **Annexure:**

#### **9.0 Following documents are attached at the end of Vol IA:**

- 1) GRP installation procedure by supplier-Graphite India Ltd

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XI : General

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### 11.0 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.

#### 11.2

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.

#### 11.3

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.

#### 11.4

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.

#### 11.5

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.

#### 11.6

All necessary certificates and licenses, permits & clearances required 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.

#### 11.7

Deleted

#### 11.8

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-XI : 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.

### 11.9

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

### 11.10

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

### 11.11

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

### 11.12

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.

### 11.13

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.

### 11.14

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'.

### 11.15

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

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## Chapter-XI : 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.

11.16

Deleted

11.17

Deleted

11.18

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.

11.19

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

11.20

The details of equipments to be erected under this contract is generally as per the schedule given in relevant clauses. 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.

11.21

Contractor shall lay/install the field-routed/small-bore pipelines to suit site condition/ requirement. Before laying/installing such pipelines, the contractor shall prepare necessary sketch for routing these pipe lines and get the same approved by BHEL. Contractor must take care of the location/layout of other systems and equipment before preparing such sketch to avoid interference. There is a possibility of minor change in routing such pipelines even after completion of erection; contractor shall carry out the same without any extra cost to BHEL.

11.22

Welding or requisite process for GRP of necessary instrumentation to be provided for 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 BOQ given in the technical specifications.
- b) Items are supplied by an agency other than BHEL.

NDE for above shall be done as per the specifications as part of work.

11.23

Deleted.

11.24

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.

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### 11.25

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.

### 11.26

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.

### 11.27 Handling of materials from new storage yard.

**Customer has allotted new storage area (outside plant boundary) about 2.4 km from main gate and the transportation distance involved upto erection site will be approx. 4.0 km. Some of the consignments related to GRP piping shall be unloaded in this yard also. Contractor has to arrange crane/trailer and all associated arrangement for loading/transportation of these material upto erection site. No additional claims shall be entertained for this work.**

### 11.28

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.

### 11.29

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.

### 11.30

BHEL is operating web based computerized site operation management system (SOMS) 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.

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In the event the computerized 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 SOMS as and when the soms is reactivated/normalized.

### **11.40 MEASUREMENT OF THE WORK COMPLETED**

- A) Payment shall be on Inch-Dia and length basis as per Rate Schedule
- B) BHEL engineer's decision regarding stage of payment corresponding to progress of work, calculation of measurements etc will be final and binding on the Contractor.
- C) No separate payment shall be made for any works incidental to this package and for completion etc specified elsewhere in these specifications.
- D) No separate payment will be made for the lubricant, oils, chemicals, gases, water, preservatives etc.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XII GRP PIPING ERECTION

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### 12.0 GLASS REINFORCEMENT PIPING INSTALLATION

**Note: 1. Installation procedure shall be in line with enclosed GRP installation procedure by supplier –M/s Graphite India Ltd .**

12.1 Contractor shall specifically note:

12.1.1. There may be sub-systems under the above systems, though not listed here will also form part of work. Similar, any other system though not listed here but is/are required for total work completion shall form part of work. Such works shall also be paid as per relevant terms of payment at applicable item rate for above piping.

12.1.2. Some cooling water piping schemes are presently planned to be of CS material. However, during final engineering whole or part of it may be changed to GRP material. In such a case, relevant specifications herein shall be applicable to installation of such pipelines too. Payment will be made based on actual measurement and applicable item rate corresponding to material of pipes.

12.1.3. Generally civil works for installation of buried piping are specifically excluded from the scope of contractor. However, work pits required in the pipe trenches for making in-situ joints etc shall be made by the contractor. Similarly, to carry out his work, any shoring of trench walls to prevent cave-ins and/ or de-watering of trenches if required shall be done by the contractor as scope of work. All materials and T & P shall be arranged by him.

12.2

The scope of work in piping system (Air, Gas, water, oil, steam, governing oil/control oil etc.) will include cutting to required length, edge preparation, laying, fixing and welding of the elbows/fittings/valves of all types and sizes/ strainers (e.g. self cleaning strainers etc)/ duplex filter and any other equipment shown in the drawings/documents etc coming in the pipelines, fixing supports/hangers/shock absorbers/ guides and restraints etc. and carrying out all other activities/works to complete the erection and also carrying out all pre-commissioning/ commissioning operations mentioned in these specifications as per engineer's instructions and/or as per approved drawings.

12.3

Carrying out of piping as per the specifications between equipments constituting terminal points, whether the terminal equipments fall within the scope of this work/specification or not, is within the scope of the work/ specification. The contractor shall complete terminal joints at either ends, with due NDE & PWHT if applicable, for all the piping schemes covered in the scope of work.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XII GRP PIPING ERECTION

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### 12.4

Fit up and bolting/fastening of piping to the terminal points (such as stubs, valves, flanges on terminal points/ equipments, stubs on headers, battery limits etc) forming part of the scope of work/specification and stress relieving and radiography of joints so made are also within the scope of work. Permanent fasteners and gaskets will be supplied by BHEL.

### 12.5

Interconnection/ hook-up, if any, with the existing system shall form part of work. Such interconnections, hook-ups may require shut down of running plant and the relevant work has 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.

### 12.6

All drains / vents / relief / escapes / safety valve piping to various tanks/ sewage / drain canal / flash box / condenser / sump / atmosphere etc, from the stubs on the piping and equipments etc are covered in the scope of this tender specification.

### 12.7

The following items of work shall be incidental and forming part of piping fabrication and erection:

- (1) To locate cause of vibrations in equipments/auxiliaries/ pipelines and carrying out necessary corrections. it shall be done free of charge to bhel in case the same is attributed to the contractor.
- (2) Fabrication and erection & welding of racks, steel supports, guides, restraints for all the piping. steel for this purpose will be supplied by bhel free of charge in random and running lengths.
- (3) Pre-assembly of spring suspension/hangers and shock absorber as per requirement.
- (4) Erection of all types of valves, air &/or steam traps, filters, flow nozzles/ flow indicators/ flow orifices other measuring elements in the piping. these may have been supplied either by bhel or their customer. this may involve cutting of pipelines, fresh edge preparation and welding with stress relieving wherever applicable.
- (5) Fabrication / making of bends for pipes and tubes of diameter up to 65 mm.
- (6) Matching of all fittings like tees, bends, flanges, reducers valves, socket fittings, etc with pipes for welding.
- (7) Servicing of valves, power cylinders and actuators etc.
- (8) Cleaning of all pipes by wire brushing / blowing by compressed air.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XII GRP PIPING ERECTION

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(9) Welding of root valves with small length of piping to the pressure, flow and level tapping points on piping and/or flow nozzles/ orifices/ metering/ measuring elements fixed on piping.

(10) Welding of blanks with stress relieving if required on a temporary basis.

### 12.8

Pipelines will be field routed as per schemes/ suggestive layout or as per the instructions of bhel engineer. Pipes & tubes will be supplied in random lengths and running lengths. The contractor shall have to lay the piping after carrying out the necessary fabrication, edge preparation, routing etc to suit site requirement in best professional manner.

### 12.9

As far as possible pre-assembly of piping shall be done on ground. The pipe laying shall be carried out from the available terminal point/points or any other area between the terminal points. The erection can be carried out on temporary supports to obtain proper alignment and welding. After fixing the permanent supports, all the temporary supports shall be removed. The alignment, distances and loading of the supports shall be checked and the required settings to be ensured as per requirement.

### 12.10

Fittings like bends tees, elbows, miter bends, reducers, flanges etc, will be supplied as loose items. Bends of tubes up to OD 65 mm will have to be formed at site as incidental to the work.

### 12.11

Certain adjustments in length may be necessary while erecting pipelines. The contractor should remove the extra lengths/add extra lengths to suit the final layout after preparing edges afresh at no extra cost.

### 12.12

Minor adjustment like removal of ovality in pipes is in the scope of work.

### 12.13

Normally the butt welded valves will have prepared edges for welding. But, if it becomes necessary, the contractor shall prepare new edges or recondition the edges by grinding or chamfering to match the corresponding tubes and pipes. All fittings like "T" pieces, bends, weld neck flanges, reducers, etc., shall be suitably matched with pipes for welding (this is applicable to piping work also).

### 12.14

Welding of all attachments on casing, non-pressure parts, pressure parts/ piping, equipments, tanks, vessels etc. including those required for insulation work is in the scope of work.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter-XII GRP PIPING ERECTION

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#### 12.15

It should be ensured that all the terminal point connections are done without transferring any undue load or strain to the other equipments. Necessary protocols have to be prepared for such fit-up along with bhel /customer representative before connecting. All NDE including radiography of joints so made, post weld heat treatment if any, are also within the scope of work / specification.

#### 12.16

Where pipes are sent as plain pipes the attachments for tapping points and / or supports will be sent as loose items. Site work will involve fabrication, drilling, fitting, pre-heating, welding, NDE & PWHT as per applicable bhel documents. Rate quoted shall take account of all these work as no separate payment is envisaged for such work.

#### 12.17

TG auxiliaries cooling water may also be extended to some of the auxiliaries/equipments of TG area and other equipments. Contractor shall carry out erection, testing, NDE requirements and commissioning of entire system.

#### 12.18 GRP PIPING - MAIN COOLING WATER PIPING & ACW PIPING

- a) Majority of GRP piping will be laid underground and buried.
- b) While handling these pipes proper soft packing between the sling rope and the pipe shall be provided.
- c) Manufacturer's recommendation in respect of laying of pipes, site joints and all other aspects shall be adhered to.
- d) Any fixtures and other arrangement required to be made for installation shall be part of & incidental to work.
- e) All field quality requirements as per recommendations of manufacture shall be complied with.
- f) Field hydraulic test of piping as per recommendations shall be conducted. All pumps etc are to be arranged by the contractor. In case of hydraulic testing is to be conducted in stages, 1 set of end caps in each size of pipe shall be provided by bhel on free returnable basis. Contractor shall use these properly and return to bhel in proper condition.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter-XII GRP PIPING ERECTION

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- g) In case bhel avails the supervision services of the manufacture of pipe for installation, the work shall be executed by the contractor as per their instructions.
- h) Drains, vents and access doors/ manholes should be provided as per drawing/ schemes etc.
- i) Torque wrenches, if required, for fastening of clamps, flanges etc shall be provided by the contractor.
- j) Item rate for complete work of GRP piping is invited based on Inch Dia – M concept. This rate shall include price for all works laying, coupling, testing, supporting and clamping etc.
  - (i) Payment will be made based on the linear measurement for respective dia of pipes. All valves, fittings etc coming along the line and will be measured linearly like pipes along centerline.
  - (ii) There is no other separate rate envisaged and payment shall be made based only on this rate for all activities of this work.
  - (iii) Measurement will be taken on OD of the pipes.
  - (iv) Refer chapter -viii for terms of payment.

#### 12.19.1 **OTHER IMPORTANT POINTS**

#### 12.20.2

Suspensions/supports for tubes/piping will be supplied in running/random lengths/ sizes, which shall be fabricated as per drawing and erected as required. Similarly ladders for approaching manhole doors shall also be fabricated from random sized materials provided by BHEL as free issue.

#### 12.21.3

Layout of small-bore piping shall be done as per site requirement. Necessary sketch for routing these lines should be prepared by the contractor and got approved from BHEL. There is a possibility of slight change in routing the above pipelines even after completion of erection; contractor's scope includes such re-routing within the quoted rates.

#### 12.22.4

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter-XII GRP PIPING ERECTION

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Welding of necessary instrumentation tapping points, root valves, flow metering & measurement devices, and control valves to be provided on pipe lines covered within the scope of this specification, will also be the responsibility of the contractor and will be done as per the instructions of BHEL site engineer. It may be necessary to cut and remove parts of already erected pipeline for introducing such items. All necessary activities like edge preparation, fit-up, welding, NDE etc. For installation/introduction of all the above items will be contractor's responsibility even if the:

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

NDE for above shall be done as per the specifications as part of work.

#### 12.23.5

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

#### 12.24.6

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. Contractor shall provide the requisite Meggar for this purpose.

NOTE:

**1. Ignore whichever among above is NOT APPLICABLE for this job**

**TECHNICAL CONDITIONS OF CONTRACT (TCC)**  
**Chapter-XIII: TESTING, PRE-COMMISSIONING, COMMISSIONING**

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**13.1.0**

**TESTING, PRE-COMMISSIONING AND ASSISTANCE FOR COMMISSIONING**

13.1.1

Hydraulic testing of the piping shall be conducted in segments after laying.

13.1.2

Testing, pre-commissioning, & commissioning will involve, flushing of the lines by water as informed by BHEL from time to time shall be completed.

13.1.3

All the tests should be repeated till all the equipments satisfy the requirement/obligations of BHEL to their client and also the relevant statutory authority.

13.1.4

Contractor shall lay/install necessary temporary piping, pumps, valves, gauges, cables, switches etc, for conduct of hydraulic test, this may involve cutting of some portion of existing piping/valves, placing of rubber wedges / blanks in the valves and other openings where required, bends have to be fabricated at site from running length of pipe. Temporary installation itself has to be tested, tried, and subject to non-destructive examinations as per the instructions of BHEL as part of work.

13.1.5

Contractor shall arrange all the materials, equipments such as pumps with drive motors, starters, cables & switches etc, pipes and fittings, valves, and supports, pressure gauges etc for water filling, pressure testing and de-watering of pipes and pits.

13.1.6

**Providing blanking plates, dished ends, fabrication, fit-up, welding, of requisite blanks for conduct of hydraulic test is part of work. Contractor shall arrange dished ends – at least 2 sets for each size of pipes suitably.** Removal of blanks and restoration of the concerned system/line is to be done as part of work. No separate payment will be made for these activities.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### Chapter-XIII: TESTING, PRE-COMMISSIONING, COMMISSIONING

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#### 13.1.7

Overhauling, cleaning, servicing of valves, during erection and commissioning stages are in the scope of work.

#### 13.1.8

During pre-commissioning / commissioning, a replacing / changing mechanical/ other seal of equipments is within the scope of work.

#### 13.1.9

In case any defect is noticed during tests, trial runs such as loose components, undue noise or vibration, strain on connected equipment etc, the contractor shall immediately attend to these defects and take necessary corrective measures. If any readjustment and realignment are necessary, the same shall be done as per BHEL engineer's instructions. No Claims, for these works shall be attributable to BHEL.

#### 13.1.10

Contractor shall cut/open work, if needed, as per BHEL engineer's instructions during commissioning for inspection, checking and make good the works after inspection is over.

Similarly, during the course of erection, if certain portion of equipment's erected by the contractor has to be undone for enabling other contractors/agencies of BHEL/customer to carry out their work, contractor shall carry out such jobs expeditiously and promptly and make good the job after completion of work by other contractor's/ agencies of BHEL/customer as per BHEL engineer's/agencies of BHEL/customers instructions. No Claims, for these works shall be attributable to BHEL.

#### 13.1.11

During this period, though BHEL/ client's staff will also be associated in the work, the contractor's responsibility will be to arrange for complete requirement of men and required tools and plants, consumables, scaffolding and approaches etc, till such time the commissioned unit is taken over by BHEL's client.

#### 13.1.12

It shall be specifically noted that the contractor may have to work round the clock during the pre-commissioning and commissioning period along with BHEL engineers and hence considerable overtime payment is involved. The contractor's quoted rates shall be inclusive of all these factors.

#### 13.1.13

The contractor shall carry out any other tests as desired by BHEL engineer on erected equipment covered under the scope of this contract during testing, pre-commissioning and commissioning, to demonstrate the completion of any part or whole of work performed by the contractor.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## Chapter-XIV: PRESERVATION & PROTECTION

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### 14.1.0 PRESERVATION & PROTECTION OF COMPONENTS.

#### 15.1.1

The contractor shall have total responsibility for all equipments and materials in his custody at his 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.

#### 14.1.2

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.

#### 14.1.3

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.

#### 14.1.4

Contractor shall collect all scrap materials periodically from various area of work site and pre- assembly area, deposit the same at the 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.

#### 14.1.5

The entire surplus, damaged, scrap, unused materials, package materials / boxes / containers, special transporting frames, gunny bags, etc, shall be returned to BHEL stores by the contractor with proper records.

#### 14.1.6

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

#### 14.1.7

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.