

TENDER SPECIFICATION

No. - BHE/PW/PUR/RGIT-STR/838/839

SUPPLY (EXCEPTING BHEL SUPPLIED MATERIALS), COLLECTION OF MATERIALS FROM BHEL/CLIENT'S STORES/STORAGE YARD; TRANSPORTATION TO FABRICATION YARD/ SITE; FABRICATION, ERECTION, ALIGNMENT, BOLTING/ WELDING/ FASTENING, GROUTING, TESTING AND HANDING OVER OF BUNKER STRUCTURES AND RAW COAL BUNKERS IN UNIT 1 & 2

AT
JINDAL POWER LIMITED PHASE-III
(4X600 MW JPL STPP) SALIBHATA
TAMNAR VILLAGE
DISTT: RAIGARH, CHATTISGARH

TECHNICAL BID - VOLUME- I

CONSISTING OF:

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



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

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I-A	Technical Conditions of Contract	97	Vol-IA-838-839
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II	Price Bid Specification		Vol-II-838-839
IE	Technical Specification (consists of Section-A, Section-B Section-C, Section-D, Section-D18, Section-17)		Vol-IE-838-839

LEGEND:

This document (i.e. NIT & Vol-I A) issued as a separate book as PART of Technical Bid & also hosted in our web site (www.bhel.com)

§: “Vol I -B, I-C, I-D” of Part-I (Vol- I) issued as separate book as a part of Technical Bid & also hosted in BHEL web site.

@: Price bid is issued as a separate hard copy booklet also hosted in BHEL web site.

Technical Specification (consists of Section-A, Section-B Section-C, Section-D, Section-D18, Section-17) issued as a separate book as PART of Technical Bid& also hosted in our web site (www.bhel.com) as an corrigendum of this tender.

Tender Specification Issue Details

Tender Specification No: BHE/PW/PUR/RGIT-STR/838/839

SUPPLY (EXCEPTING BHEL SUPPLIED MATERIALS), COLLECTION OF MATERIALS FROM BHEL/CLIENT'S STORES/STORAGE YARD; TRANSPORTATION TO FABRICATION YARD/ SITE; FABRICATION, ERECTION, ALIGNMENT, BOLTING/ WELDING/ FASTENING, GROUTING, TESTING AND HANDING OVER OF BUNKER STRUCTURES AND RAW COAL BUNKERS IN UNIT-1 & 2

AT

JINDAL POWER LIMITED PHASE-III

(4X600 MW JPL STPP) SALIBHATA

TAMNAR VILLAGE

DISTT: RAIGARH, CHATTISGARH

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.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

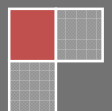
For Bharat Heavy Electricals Limited

DGM (Purchase)
Place: Nagpur
Date:

838/839

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



Ref: BHE/PW/PUR/RGIT-STR/838/839

Date: 12/03/2011

NOTICE INVITING TENDER (NIT)

To

Dear Sir/Madam

Sub : NOTICE INVITING TENDER

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

1.0 Salient Features of NIT

SL NO	ISSUE	DESCRIPTION
i	TENDER NUMBER	BHE/PW/PUR/RGIT-STR/838
ii	Broad Scope of job	SUPPLY (EXCEPTING BHEL SUPPLIED MATERIALS), COLLECTION OF MATERIALS FROM BHEL/CLIENT'S STORES/STORAGE YARD; TRANSPORTATION TO FABRICATION YARD/ SITE; FABRICATION, ERECTION, ALIGNMENT, BOLTING/ WELDING/ FASTENIG, GROUTING, TESTING AND HANDING OVER OF BUNKER STRUCTURES AND RAW COAL BUNKERS IN UNIT-1 & 2 OF 4X600 MW JPL TAMNAR, DIST – RAIGARH (CHATTISGARH)
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> <i>Applicable</i>
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i> <i>Applicable</i>
c	Volume-IC	<i>General Conditions of Contract (GCC)</i> <i>Applicable</i>
d	Volume-ID	<i>Forms and Procedures</i> <i>Applicable</i>
e	Volume-II	<i>Price Schedule (Absolute value).</i> <i>Applicable</i>
iv	Issue of Tender Documents	<p>1. Sale from BHEL PS Regional Office at Nagpur Start :12/03/2011 Closes :01/04/2011 Time : 16.00 Hrs</p> <p>2. From BHEL web site (www.bhel.com) Tender document can however be downloaded from website till due date of submission.</p> <i>Applicable</i>

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v	DUE DATE & TIME OF OFFER SUBMISSION	Date : 02/04/ 2011 , Time :15.00Hrs Place : <u>BHEL PS Regional office at :Nagpur</u> Tenders being submitted through representative shall be handed over to any of the following BHEL officials after making entry/registration at the reception: SM Borkar/ Deputy Gen Manager (Purchase) RK Ranade/ Manager (Purchase) Vivek Kamal/ Engineer(Purchase) Pratish Gee Varghese/Engineer(Purchase)	<i>Applicable</i>
vi	OPENING OF TENDER	1 hours after the latest due date and time of Offer submission Notes: (1) In case the due date of opening of tender becomes a non-working day, tenders shall be opened on next working day at the same time. (2) Bidder may depute representative to witness the opening of tender	<i>Applicable</i>
vii	EMD AMOUNT	Rs 2,00,000/- (Rupees Two Lakhs Only)	Applicable
viii	COST OF TENDER	Rs 2000/-	<i>NOT Applicable</i>
ix	LAST DATE FOR SEEKING CLARIFICATION	Date: Atleast 5 days before the due date of offer submission Along with soft version also, addressing to undersigned & to others as per contact address given below	<i>Applicable</i>
x	SCHEDULE OF Pre Bid Discussion (PBD)	Date : Not applicable.	<i>Not applicable.</i>
xi	INTEGRITY PACT	Not Applicable	<i>Not applicable.</i>
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendums) and not in the newspapers . Bidders to keep themselves updated with all such information	Applicable

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

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- 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)
- 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
	Part-I A	
	ENVELOPE – I superscribed as : PART-I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:-	
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. Note: <ol style="list-style-type: none"> a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained. b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. <ol style="list-style-type: none"> i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender 	
iii.	Supporting documents/ annexure/ schedules/ drawing etc as required in line with Pre-Qualification criteria. It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT.	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	applicable
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT	
vii.	Notice inviting Tender (NIT)	
viii.	Volume – I A : <u>Technical</u> Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms	

	of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii.	Any other details preferred by bidder with proper indexing.	

	PART-I B	
	<p>ENVELOPE – II superscribed as: PART-I (EMD/COST of TENDER) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:-</p>	
i.	<p>1. Earnest Money Deposit (EMD) in the form as indicated in this Tender OR 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>	

	PART-II	
	PRICE BID consisting of the following shall be enclosed	
	<p>ENVELOPE-III superscribed as: PART-II (PRICE BID) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING</p>	
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)	

	OUTER COVER	
	<p>ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:</p> <p>CONTAINING THE FOLLOWING:</p>	
i	<ul style="list-style-type: none"> o Envelopes I o Envelopes II o Envelopes III 	

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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 No Deviation with respect to tender clauses and no additional clauses/ suggestions/ in Techno-commercial bid/ Price bid shall normally 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: (Shall be applicable for Bid Evaluation after 1st Jan 2011)

Bidders capacity for executing the job under tender shall be assessed as per the following:

I. **Assigning Weightages (A) for Similar Jobs Under-Execution:** Weightages shall be worked out and assigned based on the average number of Similar Works under execution including works yet to be commenced by the agency, in the following manner:

i). Number of Similar Jobs

- a) No. of jobs in BHEL, PSER : Say 'J'
- b) No. of jobs in BHEL, PSSR : Say 'K'
- c) No. of jobs in BHEL, PSWR : Say 'L'
- d) No. of jobs in BHEL, PSNR : Say 'M'
- e) No. of jobs with other customers* : Say 'N' (*: Other than BHEL PSER, PSSR, PSWR & PSNR)
- f) Average No. of Jobs is 'P' = (J+K+L+M+N) divided by 5

ii) Weightage "A" assigned to bidders based on Average Number of jobs "P":

- a) If 'P' = 0-1, "A" will be equal to '3'
- b) If 'P' = 2-3, "A" will be equal to '2'
- c) If 'P' = 4-5, "A" will be equal to '1'
- d) If 'P' is Above 5, "A" will be equal to '0'

II. **Weightage "B" for Quarterly Performance Reports of Vendors:** This shall be based on the averages of the net weighted score obtained by the bidder for the jobs under execution (excluding works not commenced) for the quarter previous to the last quarter reckoned from the date of latest due date of submission, in all four Regions i.e BHEL PSER, PSSR, PSWR & PSNR, in the following manner.

i). Ratings by Power Sector Region:

- a) PS ER's Rating 'Rer' = $(X_1 + X_2 + \dots + X_n)$ divided by n
- b) PS WR's Rating 'Rwr' = $(X_1 + X_2 + \dots + X_n)$ divided by n
- c) PS SR's Rating 'Rsr' = $(X_1 + X_2 + \dots + X_n)$ divided by n
- d) PS NR's Rating 'Rnr' = $(X_1 + X_2 + \dots + X_n)$ divided by n
- e) **Over all Power Sector Region Rating 'R_{BHEL}' = (Rer+ Rwr+ Rsr+ Rnr) divided by 4**

(where "X₁, X₂, X₃,...X_n" is the net weighted score obtained by the bidder as per the "Evaluation of Contractor Performance (Quarterly)" against the various contracts 'n' under execution in the respective Region).

ii) Weightage "B" assigned to bidders based on Overall Power Sector Rating (R_{BHEL}):

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- a) If R_{BHEL} is 80% and above, "B" will be equal to '6'
 - b) If R_{BHEL} is $> 70\% < 80\%$, "B" will be equal to '5'
 - c) If R_{BHEL} is $> 60\% < 70\%$, "B" will be equal to '4'
 - d) If R_{BHEL} is $= < 60\%$, "B" will be equal to '0'

III. Evaluation of Bidders capacity to execute the job under tender: shall be based on the sum of scores obtained in 'A' and 'B', as below:

- a) **6 or above : Considered 'Qualified' for the job under tender**
- b) **Less than 6: Considered 'NOT Qualified' for the job under tender**

IV. Explanatory note:

- a) Similar work means Boiler or Turbine or Civil or Electrical or CI, etc irrespective of rating of Plant
- b) Quarter shall be as per the quarter defined in the "Evaluation of Contractor performance (Quarterly)". For contracts where annexed Quarterly Evaluation performance was not part of the contract, 'Quarterly Performance Reports' previous to the last quarter reckoned from the date of latest due date of submission, given by the respective project site against the contract will be the basis for evaluation.
- c) Vendors who are not executing any jobs presently in the Region and first timers to the Region, may be considered subject to satisfying all other tender conditions
- d) 'Under execution' shall mean works in progress upto Boiler Steam Blowing (for Boiler and Auxiliaries) or Synchronisation (for all other jobs including Civil) shall be considered.

- 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 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. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of above.
- 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 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

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further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (xi) of 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 pre-qualification evaluation/ techno-commercial bids, approval/ acceptance of customer (as applicable), etc. and date of opening of price bids shall be intimated to only such bidders.
- 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) or specified otherwise in SCC of tender.
- 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 In case Consortium Bidding is allowed as per Pre Qualifying Requirement, then Prime Bidder and Consortium Partner shall enter into Consortium Agreement. Validity period of Consortium Agreement shall be 6 months after which the same can be re validated.
'Stand alone' bidder cannot become a **'prime bidder' or a 'consortium bidder' in a consortium 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. .
- 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

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- d. Technical Conditions of Contract (TCC)—Volume-1A
 - e. Special Conditions of Contract (SCC) —Volume-1B
 - f. General Conditions of Contract (GCC) —Volume-1C
 - g. Forms and Procedures —Volume-1D

for BHARAT HEAVY ELECTRICALS LTD

DGM/Purchase

Enclosure

- 01. Annexure-1: Pre Qualifying criteria.
- 02. Annexure-2: Check List .
- 03. Annexure-3: Integrity Pact.

ANNEXURE - 1

PRE QUALIFYING CRITERIA

JOB	SUPPLY (EXCEPTING BHEL SUPPLIED MATERIALS), COLLECTION OF MATERIALS FROM BHEL/CLIENT'S STORES/STORAGE YARD; TRANSPORTATION TO FABRICATION YARD/ SITE; FABRICATION, ERECTION, ALIGNMENT, BOLTING/ WELDING/ FASTENING, GROUTING, TESTING AND HANDING OVER OF BUNKER STRUCTURES AND RAW COAL BUNKERS IN UNIT-1 & 2 OF 4X600 MW JPL TAMNAR, DIST – RAIGARH (CHATTISGARH)
TENDER NO	BHE/PW/PUR/RGIT-STR/838/839

SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria (BIDDER TO FOLLUP THE DETAILS IN THESE BLANK COLUMNS AGAINST THE QR & ALSO SHOULD SUBMIT THE DOECUMENTS IN SUPPORT OF QR)	
		Name and Description of qualifying criteria	Page no of supporting document
A	Submission of Integrity Pact duly signed	NOT APPLCABLE	
B	Assessment of Capacity of Bidder to execute the work as per sl no 9 of NIT	<u>Shall be applicable for Bid Evaluation</u>	
C	<p><u>Technical</u> Bidder shall essentially meet the All the Qualifying Requirements (QR) C,(i.e. C1 or C2 or C3) ,D1, D2 & D3) as stated below.</p> <p>Bidder must have executed the works as specified in C1 of in C2 as below in the last seven years as on 30/02/2011</p> <p>(C1) Vendor should have essentially executed Fabrication and Erection of Plate Fabricated Columns/Girders of Steel Structural works of 5000 MT and should have recorded fabrication and erection of these structures at the rate of 500 MT (Average) per month with all T&P and consumables with latest fabrication & erection technique in a single work order.</p> <p>OR (C2) Vendor should have executed fabrication & erection Bunker Structure of 210 MW in thermal Power Plant.</p>		

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	OR (C3) Vendor should be empanelled with PS-WR for C- MS-5 or in C- MS-6 (Major structural works)		
D 1	<u>Financial TURNOVER</u> Bidders must have achieved an average annual financial turnover (Audited) of Rs 450 Lakhs or more over last three Financial Years (FY) i.e 2007-08, 2008-2009, 2009-2010 .		
2	NETWORTH Net worth of bidder based on Audited Accounts of 2009-10 (OR 2008-09 incase accounts for FY 09-10 has not been audited) should be higher than 50% of paid up capital in case of companies.		
3	PROFIT Bidder must have earned cash profit in any one of the three Financial Years as applicable in the last three years defined in 'D1 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.	APPLICABLE	
F	Consortium criteria	NOT APPLICABLE	
	Explanatory Notes for QR 1. The word 'executed' means the bidder should have achieved the criteria specified in the QR even if the total contract has not been completed or closed 2. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as given above along with all annexures (a) The word 'executing' means _____		

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT(ie copy of work order, work completion certificate , audited balance sheet including profit & loss account statement of last three years etc) IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

ANNEXURE 2:

IMPORTANT INFORMATION

This Document consists of Tender Specifications and BOQ of Unit 1 and Unit 2 of 4 X 600 MW fabrication & Erection of Bunker Structure Package

1. Tender specification (Volume I) is common for both the units. Separate BOQ for Unit 1 and Unit 2 is given in Annexure I of Volume IA
2. **Both the units shall be awarded to separate agencies.**
3. **Volume II price bid is issued only for one .**
4. Bidders are required to submit their rates/price for one unit only in Volume II Price bid
5. L-1 bidder shall be considered for award of any one (ie Unit # 1 or Unit-2)
6. For award of other unit work of Bunker Structure, next bidder in the order of their price competitiveness (i.e L-2, then L-3 and hence forth based on awarded rates) shall be given an option to match their rates/price with the Awarded rate/price of work awarded to original lowest bidder. In case none of the bidders agree to match the Awarded price of awarded price of original L-1 bidder then BHEL may consider awarding the work of other unit to L-1 bidder or opt any other suitable method to the award of another unit.
7. In case after award of job, the agency fails to display satisfactory performance in execution of job and BHEL feels it necessary to make alternate arrangement to execute balance work or any portion of work on risk purchase basis or otherwise, then BHEL reserves the right to exercise the method mentioned in SI No 6 to finalize another/additional agency.

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: <u>Please tick (√) whichever applicable:-</u> ONE TIME EMD / ONLY FOR THIS TENDER	
		APPLICABILITY	BIDDER REPLY
5	Whether the format for compliance with PRE QUALIFICATION CRITERIA (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	Whether duly filed & Signed Integrity Pact (Annexure III of NIT) submitted	Applicable	YES/NO
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	Refer SI 9 of NIT	
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

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

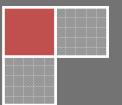
DATE :

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

838/839

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

SI No	DESCRIPTION	Chapter	No. OF PAGES
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Drawing Ref: 022-75632 (General Arrangement of Boiler Front Elevation) and Ref: 022-75631 (General Arrangement of Boiler Side Elevation) are attached at the end of Volume IA

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I : Project Information

1.0	Project Information																
1.1	<p>INTROUCTION</p> <p>4x600 MW JPL RAIGARH</p> <p>Jindal Power Limited (JPL) a O.P. Jindal group company is setting up a Thermal Power Plant at Raigarh in the state of Chhattisgarh. 4X250 MW is already operational. . The capacity of plant is being augmented by installation of additional 4x600 mw set adjacent to the existing units.</p> <p>Approach to site:</p> <p>Site is located near village Tamnar in Raigarh District of Chhattisgarh State. The site is approachable from Raigarh by the state highway which branches off at Punjipathra about 12 Km from the site and 34 Km from Raigarh town. The nearest broad gauge rail link is at Raigarh which is about 35 Km (Raigarh is on Railway line of Howrah Section of South eastern railways)</p> <p>Metrological Data</p> <table><tr><td>a) Mean of daily max temp</td><td>: 33.5 deg.C</td></tr><tr><td>b) Mean of daily min temp</td><td>: 21.5 deg.C</td></tr><tr><td>c) Highest temp. Recorded</td><td>: 47.2 deg.C (19 June 1960)</td></tr><tr><td>d) Lowest temp. Recorded</td><td>: 6.4 deg.C (24 Dec 1959)</td></tr><tr><td>e) Relative Humidity</td><td>: Varies from 19% to 88%</td></tr><tr><td>f) Annual average rainfall</td><td>: Between 1000-2000mm</td></tr><tr><td>g) Wind load</td><td>: 7.3Km/Hr (in the month of June)</td></tr><tr><td>h) Seismic zone</td><td>: zone III in accordance with IS: 1893, Para 3.</td></tr></table> <p>The bidder is advised to visit and examine the site of WORKS and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the CONTRACT. All costs for and associated with site visits shall be borne by the bidder.</p>	a) Mean of daily max temp	: 33.5 deg.C	b) Mean of daily min temp	: 21.5 deg.C	c) Highest temp. Recorded	: 47.2 deg.C (19 June 1960)	d) Lowest temp. Recorded	: 6.4 deg.C (24 Dec 1959)	e) Relative Humidity	: Varies from 19% to 88%	f) Annual average rainfall	: Between 1000-2000mm	g) Wind load	: 7.3Km/Hr (in the month of June)	h) Seismic zone	: zone III in accordance with IS: 1893, Para 3.
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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

2.0 SCOPE OF WORK

THE WORK TO BE CARRIED OUT UNDER THE SCOPE OF THESE SPECIFICATIONS IS BROADLY AS UNDER:

- 1) SUPPLY (EXCEPTING BHEL SUPPLIED MATERIALS), FABRICATION, ERECTION, ALIGNMENT AND WELDING, BOLTING, FASTENING, GROUTING AS APPLICABLE
- 2) DESTRUCTIVE, NON-DESTRUCTIVE AND ANY OTHER TESTS AS PER REQUIREMNT
- 3) COMPLETION OF FACILITY AND HANDING OVER

THE FOLLOWING DOCUMENTS ARE ATTACHED ALONGWITH AS VOLUME -II AND FORM INTEGRAL PART OF THESE SPECIFICATIONS:

VOLUME	SECTION	TITLE	SEPCIFICATION NO.	REV. NO.
VOLUME IIB	SECTION - A	SCOPE OF WORK	PE-TS-329-616-C001	00
VOLUME IIB	SECTION - B	PROJECT INFORMATION	PE-TS-329-616-C001	00
VOLUME IIB	SECTION - C	SPECIFIC TECHNICAL REQUIREMENTS FOR STRUCTURAL WORKS	PE-TS-329-616-C001	00
VOLUME IIB	SECTION – D	TECHNICAL SPECIFICATIONS FOR STRUCTURAL STEEL WORKS	PE-TS-329-616-C001	00
VOLUME IIB	SECTION – D SUB-SECTION – D17	FABRICATION OF STRUCTURAL STEEL WORK	PE-TS-329-616-C001	00
VOLUME IIB	SECTION – D SUB-SECTION - D18	ERECTION OF STRUCTURAL STEELWORK	PE-TS-329-616-C001	00

BIDDERS SHALL TAKE NOTE OF AND ACCOUNT FOR THE CONTENTS OF ABOVE DOUCMENTS WHILE SUBMITTING THEIR OFFER. SPECIFIC ATTENTION IS DRAWN TO THE CLAUSES AND SUB-CLAUSES VIDE SERIAL NUMBERS 6.00.00 ENTITLED RATES AND MEASUREMENTS OF SUB-SECTION-D17.

FOLLOWING ARE CLARIFIED IN RESPECT OF THE ABOVE SPECIFICATIONS:

2.0.1

THESE SPECIFICATIONS INCLUDE SUPPLY OF MATERIALS FOR VARIOUS ITEMS OF WORK. **HOWEVER, BHEL WILL BE SUPPLYING ONLY FOLLOWING MATERIALS ON FREE-ISSUE-ACCOUNTABLE BASIS AND AS SUCH SUPPLY OF ONLY THESE SPECIFIC ITEMS IS EXCLUDED FROM THE SCOPE OF CONTRACTOR. THE ITEMS ARE:**

(1) ALL ROLLED SECTIONS AS PER SPECIFICATION

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

- (2) ALL PLATE SECTIONS AS PER SPECIFICATION FOR FABRICATION OF BUILT-UP STRUCTURES ETC**
- (3) CHEQUERED PLATES AS PER SPECIFICATION**
- (4) 3.15MM THICK STAINLESS STEEL PLATES AS PER SPECIFICATION FOR BUNKER LINER**

REST ALL OTHER MATERIALS INCLUDING PERMANENT AND TEMPORARY FASTENER WITH ASSOCIATED NUTS, WASHERS, ELECTRO FORGED GRATINGS, PRIMER AND PAINTS ETC ALL AS PER SPECIFICATIONS IS IN THE CONTRACTOR'S SCOPE. THE ITEM RATE OFFERED BY THE CONTRACTOR SHALL BE IN CONSIDERATION OF THE ABOVE.

2.0.2

BHEL IS PROVIDING CERTAIN MAJOR TOOLS AND PLANTS FOR THIS WORK ON SHARING BASIS AS INDICATED UNDER SECTION-7 IN THESE SPECIFICATIOIS. REST ALL OTHER TOOL AND PLANTS AND MEASUREMENT AND MONITORING DEVICES SUCH AS ALCOMETER ETC ARE TO BE PROVIDED BY THE CONTRACTOR.

2.0.3

WITH RESPECT TO CLAUSE NO. 6.02.23 SUB-SECTION D-17 REGARDING PAYMENT OF PTFE BEARING IT IS CLARIFIED THE PAYMENT WILL BE MADE BASED ON ACTUAL QUANTITY IN NUMBERS EXECUTED AND SO CERTIFIED BY BHEL

2.0.4

WITH RESPECT TO CLAUSE NO. 2.06.02 SUB-SECTION D-18 REGARDING "YARD" IT IS CLARIFIED THAT ONLY A LIMITED SPACE FOR FABRICATION-CUM-STORAGE YARD FOR FABRICATED ITEMS WILL BE MADE AVAILABLE. THE CONTRACTOR SHALL ACCORDINGLY MAKE A VERY JUDICIOUS USE OF THE SAME SINCE BEGINNING TO AVOID ANY CONGESTION RELATED BOTTLENECK LATER ON. CONTRACTOR HAS TO PROVIDE FENCING FOR HIS ALLOTTED FABRICATED AREA IN ORDER TO AVOID ANY AMBIGUITY WITH OTHER AGENCY.

GENERAL REQUIREMENTS – COMMON TO ALL WORK

3.01.

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.

3.0.2

THE TERMINAL POINTS DECIDED BY BHEL SHOULD BE FINAL AND BINDING ON THE CONTRACTOR FOR DECIDING THE SCOPE OF WORK AND EFFECTING PAYMENT FOR THE WORK DONE.

3.0.3

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

WITH OTHERS AND PROCEED IN A MANNER THAT SHALL NOT DELAY OR HINDER THE PROGRESS OF WORK OF THE PROJECT AS A WHOLE.

3.0.4

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.

3.0.5

CONTRACTOR SHALL FABRICATE, ERECT ALL THE EQUIPMENTS AS PER THE SEQUENCE & METHODOLOGY PRESCRIBED BY BHEL DEPENDING UPON THE TECHNICAL REQUIREMENTS, AND AVAILABILITY OF MATERIALS AND FRONTS ETC. 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.

3.0.6

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.

3.0.7

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 BHEL AND RECOVERIES WILL BE EFFECTED FROM THE CONTRACTOR'S BILLS TOWARDS EXPENDITURE INCURRED INCLUDING COST OF MATERIALS AND DEPARTMENTAL OVERHEADS OF BHEL.

3.0.8

THE CONTRACTOR SHALL PERFORM ANY SERVICES, TESTS ETC, WHICH MAY NOT BE SPECIFIED BUT NEVERTHELESS, REQUIRED FOR THE COMPLETION OF WORK WITHIN QUOTED RATES.

3.0.9

THE CONTRACTOR SHALL EXECUTE THE WORK IN THE MOST SUBSTANTIAL AND WORKMANLIKE MANNER. THE STORES SHALL BE HANDLED WITH CARE AND DILIGENCE.

3.0.10

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.

3.0.11

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

ALL CRANES, TRANSPORT EQUIPMENT, HANDLING EQUIPMENT, TOOLS, TACKLES, FIXTURES, EQUIPMENT, MANPOWER, SUPERVISORS/ENGINEERS, CONSUMABLES ETC, EXCEPT OTHERWISE SPECIFIED AS BHEL SCOPE ON 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 HIM UNLESS OTHERWISE SPECIFIED IN THE RELEVANT CLAUSES. THE CONTRACTOR'S QUOTED RATES SHOULD BE INCLUSIVE OF ALL SUCH CONTINGENCIES.

3.0.12

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 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.

3.0.13

THE CONTRACTOR SHALL MAKE ALL FIXTURES, TEMPORARY SUPPORTS, STEEL STRUCTURES REQUIRED FOR JIGS & FIXTURES, ANCHORS FOR LOAD AND GUIDE PULLEYS REQUIRED FOR THE WORK. CONTRACTOR SHALL ARRANGE NECESSARY STEEL FOR SUCH USAGE.

3.0.14

THE CONTRACTOR SHALL TAKE DELIVERY OF THE MATERIALS FROM THE BHEL STORES/ STORAGE AREA AFTER GETTING THE APPROVAL OF BHEL ENGINEER ON STANDARD INDENT FORMS OF BHEL. COMPLETE AND DETAILED ACCOUNT OF THE MATERIALS AND EQUIPMENTS AFTER USAGE SHALL BE SUBMITTED TO THE BHEL AND RECONCILED PERIODICALLY.

3.0.15

CONTRACTOR SHALL PLAN AND TRANSPORT MATERIALS/ FABRICATED ITEMS FROM STORAGE TO FABRICATION YARD/ ERECTION SITE AND ERECT THEM IN SUCH A MANNER AND SEQUENCE THAT MATERIAL ACCUMULATION AT SUCH LOCATIONS DOES NOT LEAD TO CONGESTION IN THESE AREAS. 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. NO CLAIM FOR EXTRA PAYMENT FOR SUCH WORK WILL BE ENTERTAINED.

3.0.16

PLANT MATERIALS SHOULD NOT BE USED FOR ANY TEMPORARY SUPPORTS / SCAFFOLDING/ PREPARING PRE-ASSEMBLY BED ETC.

3.0.17

THE QUANTITIES OF VARIOUS ITEMS OF WORK TO BE EXECUTED UNDER THIS CONTRACT IS GENERALLY AS PER THE RATE SCHEDULE. THESE QUANTITIES 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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

3.0.18

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.

4.0.1 GENERAL RESPONSIBILITY OF THE CONTRACTOR

4.0.2

THE CONTRACTOR SHALL HAVE TOTAL RESPONSIBILITY FOR ALL EQUIPMENT AND MATERIALS IN HIS CUSTODY AT CONTRACTOR'S STORES, LOOSE, SEMI-FABRICATED, FABRICATED 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.

4.0.3 PRESERVATION & PROTECTION OF COMPONENTS

AT ALL STAGES OF WORK, EQUIPMENTS/MATERIALS IN THE CUSTODY OF CONTRACTOR, INCLUDING THOSE ERECTED, WILL HAVE TO BE PRESERVED AS PER THE INSTRUCTIONS OF BHEL. THE CONTRACTOR SHALL PROVIDE NECESSARY PRESERVATION AGENTS INCLUDING THE PRIMER & PAINT FOR THE ABOVE WORK.

4.0.4

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.

4.0.5

CONTRACTOR SHALL COLLECT ALL SCRAP/ WASTAGE MATERIALS PERIODICALLY FROM VARIOUS AREA OF WORK SITE, DEPOSIT THE SAME AT ONE PLACE EARMARKED AT SITE OR SHIFT THE SAME TO A PLACE EARMARKED IN BHEL/ CLIENT'S STORES. IN CASE OF FAILURE OF CONTRACTOR IN COMPLIANCE OF THIS REQUIREMENT, BHEL WILL MAKE SUITABLE ARRANGEMENT AT CONTRACTOR'S RISK AND COST.

4.0.6

THE CONTRACTOR SHALL NOT UNDULY WASTE ANY MATERIALS ISSUED TO HIM. IN CASE IT IS OBSERVED AT ANY STAGE THAT THE WASTAGE/EXCESS UTILISATION OF MATERIALS IS NOT WITHIN THE PERMISSIBLE LIMITS, RECOVERY FOR THE EXCESS QUANTITY USED OR WASTED WILL BE EFFECTED WITH DEPARTMENTAL CHARGES FROM THE CONTRACTOR. DECISION OF BHEL ON THIS WILL BE FINAL AND BINDING ON THE CONTRACTOR.

4.0.7

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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

4.0.8

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.

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.

5.0.0 MATERIAL

5.0.1

Materials such as rolled sections, all plate sections, chequered plates & 3.15mm thick stainless steel plates for bunker liners as per specification specified in CI no 4.01 above shall be issued at free of cost by BHEL for use in the work covered in this contract from BHEL Stores/Storage. The contractor shall collect these materials from BHEL stores at specified places at his own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent work.

5.0.2

BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or Oxany other causes or during verification/stacking or at any time under the custody of the contractor.

5.0.3

The Contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials.

5.0.4

No material shall be issued to the contractor except as those indicated above. Contractor will have to make his own arrangement at his own cost for procurement of any other materials, consumables etc. as required for the works and of such quality as acceptable to BHEL.

5.0.5

The contractor shall maintain proper store account for all the BHEL issued Materials and shall give three copies of monthly-computerized statement of such account to the BHEL.

5.0.6

Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day to day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

5.0.7

The contractor shall solely be responsible for the safety, quality & quantity of material after it is handed over and issued to contractor by the BHEL.

5.0.8

BHEL issued materials, shall not be taken out of the project site under any circumstances whatsoever unless otherwise permitted by BHEL.

6.0.0 (FOLLOW UP & HANDLING OF MATERIALS ISSUED BY BHEL)

6.0.1

BHEL will place purchase order on the manufacturers for procurement of steel structures and successful bidders will provide all necessary supports for follow up/chase up with manufactures/supplies/vendors for speedy delivery of materials at site including posting a man for short duration at manufactures factory within their quoted rates.

6.0.2

Consignment of BHEL supplied Material will be issued to the contractor as received by BHEL i.e. on weighment basis/ Linear measurement basis from its supplier, as per the delivery challan of the supplier. It would be the responsibility of the contractor to keep in constant contact with BHEL site to find out the delivery status, arrival of the consignments and arrange for escort to accompany the trucks/ trailers for transportation of above materials by BHEL'S supplier, if necessary.

6.0.3

All materials issued by BHEL shall be stacked, stored above ground level by use of concrete or wooden sleepers. No materials shall remain on ground at any time. All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipments like winches, d-shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. required for such handling of steel from BHEL stores/storage yard etc. shall be arranged by contractor within quoted/accepted rates.

6.0.4

The contractor shall take delivery of the materials from the designated place within premises of 4x600 MW JSP Raigarh at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & no extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel's to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent work. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

6.0.5

Excessive rusting of steel in custody of agency/contractor must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occur rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.

No material shall be issued to the contractor except as those indicated above i.e. steel unless otherwise expressly provided for in the contract. Contractor will have to make his own arrangement at his own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL.

6.0.6 ISSUE OF BHEL MATERIALS

:-

The steel shall be issued to the contractor on the following basis:

- (1) ALL ROLLED SECTIONS AS PER SPECIFICATION: Weighment basis
- (2) ALL PLATE SECTIONS AS PER SPECIFICATION FOR FABRICATION OF BUILT-UP STRUCTURES ETC- : Weighment basis
- (3) CHEQUERED PLATES AS PER SPECIFICATION: Weighment basis
- (4) 3.15 MM THICK STAINLESS STEEL PLATES AS PER SPECIFICATION FOR BUNKER LINER: Weighment basis

All these materials issued by the BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved fabrication drawings including laps, chairs and lugs. The measurement for payment as well as for accounting (reconciliation) shall be based on linear measurements as per the sectional unit weights as per relevant IS code/Standard unit weight provided by Manufacturer/supplier.

In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.

The material issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores no claims for extra payment because of issue of non-standard length will be entertained.

In case MS flats as required in the fabrication of structures are not available, the contractor shall cut such width out of the available MS plates to make flats at no extra cost till such material is available and procured by BHEL.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores/Storage yard. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores/Storage yard.

The contractor shall submit to the engineer, a statement indicating estimated quantity of steel required during a quarter at least two months in advance of the quarter. In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.

Bidders to ensure that no lamination materials are taken over by them from BHEL stores. Fabrication wastage, if any due to above, shall not be compensated by BHEL. Bidder to note that all the BHEL supplied material etc. shall be supplied by the bidder as per relevant items of BOQ.

7.0.0 RETURN OF MATERIALS

All surplus steel and all wastage materials will be taken back on weight Measurement basis.

Surplus, unused and un-tampered steel shall be sorted section-wise and returned separately for a place directed by BHEL/Engineer within the project area, Return of such materials will not be entitled to any handling and incidental charges.

All wastage / scrap (including melting scrap, wastage, unusable scrap) shall be returned item wise to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any additional cost due handling and transportation and incidental charge.

All Scrap for structural steel including melting scrap shall be returned separately.

8.0.0 STEEL CONSUMPTION AND WASTAGE:-

STRUCTURAL STEEL (ROLLED SECTIONS, MS FLATS ETC.), STAINLESS STEEL LINER CONSUMPTION & WASTAGE:-

CONSUMPTION STRUCTURAL STEEL: -

8.01

The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering/based on linear measurements and the sectional weights as per Indian standard. No extra shall be payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption. **However, Rolling Margin/variation in standard unit weight w.r.t. actual unit weight (taken at site) shall be considered for reconciliation of steel & no panel recovery shall be done on this account.**

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

- i) Actual consumption = Issue – Surplus.
- ii) Surplus = Untampered, unused, uncut quantity of steel returned by the contractor to BHEL store.
- iii) Wastage = Actual consumption – Theoretical consumption.

9.0.0 WASTAGE OF STRUCTURAL STEEL:-

Allowable wastage: - (+) 5% (Plus five percent) of the theoretical consumption shall be considered. Wastage is further classified as serviceable cut pieces (pieces of rolled steel section length 3M and above) and unserviceable scrap (including pieces of rolled steel section length less than 3m & MS plate less than one sq. M Area width less than 100cm) measured as per actual weighment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5% (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (i.e. five percent).

SL. NO.	CONSUMPTION OF STRUCTURAL STEEL (ROLLED SECTION, PLATES & SS liner)	BASIS OF ISSUE & PENAL RECOVERY
S-1	Theoretical consumption (without Considering any wastage, scrap or loss)	Free
S-2	Wastage limited to plus five percent (+5%) of the aforesaid theoretical Consumption (S-1) towards allowable wastage.	Free
S-3	Wastage beyond five percent (5%) of the aforesaid theoretical consumption (S-1). (All wastage steel shall be returned to BHEL).	Penal Rate

10.0.0 RECONCILIATION OF BHEL ISSUED MATERIALS: -

A) INTERIM RECONCILIATION (Quarterly)

The contractor shall submit a interim reconciliation statement of steel issued to them **once in three months** to BHEL engineer. In turn BHEL Engineer shall issue a Certificate indicating the status of materials for processing of further RA bills.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

The purpose of quarterly reconciliation of steel is to have a track of status of materials & to control the misuse and over wastage of steel. During the progress of work section wise reconciliation with segregation of serviceable cut piece & un-serviceable scrap/cut-pieces is not required as these cut-pieces shall be used at later stage also for various purposes & hence the same cannot be declared as wastage before completion of job. During the progress of work, following action need to be taken for reconciliation of structural steel:

- (1) Qty. used in permanent job, measured & paid under various RA Bills.
- (2) Qty. available in full length with agency at site (to be jointly assessed by BHEL engineer & Contractor).
- (3) Assessment of cut pieces available at site.

Only Certification of BHEL Engineer for the above is enough for processing the RA bills.

B) FINAL RECONCILIATION

On completion of work, contractor shall properly account for the material issued to him as specified herein clause no. 4.9.1 to the satisfaction of BHEL certifying that the balance materials are available with contractor's custody at site.

At the time of submission of final bill by the contractor, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.

The approved drawings schedules are to be considered for the purpose of reconciliation of materials.

11.0.0 RECOVERY OF MATERIAL:-

If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly R/A Bill at the Penal Rate.

PENAL RATE OF MATERIALS

A. STRUCTURAL STEEL

- | | |
|--|-----------------------|
| 1. Chqd. Plates/MS PLates | Rs. 50, 000/- per MT. |
| 2. Flats/ Beams/ Channel/
Angles etc. (Rolled sections) | Rs. 50000/- per MT. |
| 3. Stainless Steel liner | Rs 2,50,000/- per MT |

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II Scope of Work

PROCUREMENT OF MATERIALS BY SUCCESSFUL CONTRACTORS AND TESTING:

MATERIAL REQUIRED FOR THE ENTIRE JOB OTHER THAN ISSUED BY BHEL AS EXPLAINED ABOVE REQUIRED FOR THE COMPLETION OF ENTIRE SCOPE, BOLTS, NUTS, WASHERS ETC HAVE TO BE ARRANGED BY THE CONTRACTOR, EXCEPTING THOSE SPECIFICALLY INDICATED AS BHEL SCOPE OF SUPPLY. BHEL RESERVES THE RIGHT TO REJECT ANY MATERIAL NOT FOUND SATISFACTORY. CONTRACTOR SHALL PRODUCE MANUFACTURER'S TEST CERTIFICATE .

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1	ESTABLISHMENT			
3.1.1	FOR CONSTRUCTION PURPOSE:			
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	FOR LIVING PURPOSES OF THE BIDDER			
a	Open space for labour colony (as per availability)	Yes		APPROX. 3-5 KM. FROM PLANT MAIN GATE

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

SI.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	ELECTRICITY			
3.2.1	Electricity For construction purposes of Voltage 415/440 V			FREE
a	Single point source	Yes		At a distance of 500 M from site (Distance is only estimated, it may vary upto an extent depending on site condition)
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for the office, stores, canteen etc of the bidder			Free
a	Single point source	Yes		At a distance of 500 M from site (Distance is only estimated, it may vary upto an extent depending on site condition)
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	

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

SI.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc			BHEL will not provide electricity for labour colony. Contractor has to make his own arrangement.
a	Single point source			
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	WATER SUPPLY			
3.3.1	For construction purposes:			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	<u>Water supply for bidder's office, stores, canteen etc</u>			FREE
a	Making the water available at single point	Yes		

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

SI.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.3	<u>Water supply for Living Purpose</u>		yes	
a	Making the water available at single point			BHEL will not make any arrangement for water. Contractor has to make his own arrangement
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	LIGHTING			
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	

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

Sl.No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
a	Telephone, fax, internet, intranet, e-mail etc		Yes	
3.6.0	COMPRESSED AIR wherever required for the work		Yes	
3.7.0	Demobilization of all the above facilities		Yes	
3.8.0	TRANSPORTATION			
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

Sl.No	Description PART II 3.9.0 ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9.1	Engineering works for construction:			
a	Providing the erection drawings for all the equipments covered under this scope	Yes		CHAPTER -IX
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	"
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	"
g	Weekly erection schedules based on SI No. e		Yes	"
h	Daily erection / work plan based on SI No. g		Yes	"

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

Sl.No	Description PART II 3.9.0 ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
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

SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY/Remarks
1	75 T CRAWLER CRANE	01 No.	THE CONTRACTOR SHALL PROVIDE THE CRANE WITH OPERATOR FROM START OF WORK AT SITE.
2	40 T CRAWLER CRANE	01 No.	THE CONTRACTOR SHALL PROVIDE THE CRANE WITH OPERATOR FROM START OF WORK AT SITE.
3	8/10 T HYDRA CRANE	01 No.	THE CONTRACTOR SHALL PROVIDE THE CRANE WITH OPERATOR FROM START OF WORK AT SITE.
4	3 Ph DISTRIBUTION BOARD WITH COMPLETE SET UP FOR DRAWL OF CONSTRUCTION POWER	800 Amp, 415 Volt	AS PER REQMT
5	ELECTRIC CABLE FOR DRAWAL & DISTRIBUTION OF CONSTRUCTION POWER	AS PER SITE REQUIREMENT	AS PER SITE REQUIREMENT
6	GANTRY FOR FABRICATION YARD	ADEQUATE	01
7	PICK AND CARRY MOBILE CRANE	14 – 18 T	01
8	TRAILER WITH HORSE - TO HANDLE HEAVY AND LONG COMPONENTS ETC	ADEQUATE CAPACITY & SUFFICIENT BED LENGTH	01
9	TRACTOR TROLLEY - TO HANDLE REGULAR COMPONENTS OF BUNKER ETC	ADEQUATE CAPACITY	01
10	DRILLING MACHINES : ASSORTED TYPES AND SIZES	TO MEET ALL REQUIREMENT	TO MEET ALL REQUIREMENT
11	GRINDING MACHINES : ASSORTED TYPES AND SIZES	TO MEET ALL REQUIREMENT	TO MEET ALL REQUIREMENT
12	WELDING GENERATOR (ELECTRIC & DIESEL)	300 AMPS	AS REQUIRED
13	SUBMERGED ARC WELDING M/C	SUITABLE FOR APPLICATION	ADEQUATE TO MEET COMPLN SCHEDULES
14	MIG WELDING M/C	-DO-	-DO-
15	WELDING RECTIFIER	SUITABLE FOR APPLICATION	ADEQUATE

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

SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY/Remarks
16	PUG CUTTING M/C	SUITABLE FOR APPLICATION	ADEQUATE
17	PLASMA CUTTING M/C	SUITABLE FOR APPLICATION	ADEQUATE
18	OXY-ACETELYNE GAS CUTTING SET	SUITABLE FOR APPLICATION	ADEQUATE
19	BAKING OVEN AND HOLDING OVEN WITH THERMOSTAT AND TEMPERATURE GAUGE FOR BAKING COATED WELDING ELECTRODES	AS PER REQUIREMENT	ADEQUATE
20	PORTABLE OVEN FOR COATED WELDING ELECTRODES	AS PER SITE REQUIREMENT	08
21	PRE HEATING / STRESS RELIEVING SET (HEATING CONTROL PANEL, CABLES, HEATING ELEMENTS ETC.)	AS PER REQUIREMENT	ADEQUATE
22	RADIOGRAPHY ARRANGEMENT INCLUDING THE SOURCE	IR 192	1 SETS
23	ARRANGEMENT FOR UT OF HIGHER THICKNESS JOINTS WITH RECORDING FACILITY.	SUITABLE FOR APPLICATION	01 SET
24	RADIOGRAPHY FILM VIEWER	HI INTENSITY	1 NOS.
25	SAND BLASTING SET WITH AIR COMPRESSOR	SUITABLE FOR APPLICATION	ADEQUATE
26	HSFG BOLT TORQUE WRENCH & CALIBRATOR	SUITABLE FOR APPLICATION	ADEQUATE
27	ELECTRIC WINCHES	3T/ 5T	ADEQUATE
28	HAND WINCHES	½ / 1 T	ADEQUATE
29	HOISTING & PULLING DEVICES/ PULLEYS ETC	ASSORTED CAP	ADEQUATE
30	MECH & HYD JACKS	AS PER REQMT	ADEQUATE

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

SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY/Remarks
31	THEODOLITE OF REQUIRED ACCURACY	-	01No.

B: MEASURING AND MONITORING DEVICES (MMD):

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

NOTE:

- 1) ALL THE TOOLS AND PLANTS REQUIRED FOR THIS SCOPE OF WORK, EXCEPT THE TOOLS & PLANTS PROVIDED BY BHEL ARE TO BE ARRANGED BY CONTRACTOR WITHIN THE QUOTED RATES. THE LIST IS SUGGESTIVE IN NATURE. ANY ADDITIONAL T&P REQUIRED TO BE ARRANGED BY THE CONTRACTOR.
- 2) IF ABOVE MENTIONED T & P ARE NOT DEPLOYED IN SPECIFIED TIME BHEL WILL CHARGE TO CONTRACTOR CURRENT MARKET RATE + 30 % OVERHEADS FOR NON AVAILABILITY T&P OR LEVY A DAY WISE PENALTY FOR NON DEPLOYMENT OR DELAYED DEPLOYMENT.
- 3) IF THE WORKS GET DELAYED DUE TO NON-AVAILABILITY OF T&P, BHEL RESERVES THE RIGHT TO GET THE WORK DONE AT THE RISK AND COST OF CONTRACTOR WITHIN PREJUDICE TO RIGHTS OF BHEL AS IN GCC.

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

SL.NO.	DESCRIPTION & CAPACITY OF T&P	QUANTITY	REMARKS
01	250 MT CRAWLER CRANE	01 No.	BHEL OWNED CRANE. OPERATOR FOR THIS WILL BE PROVIDED BY BHEL.
02	250 MT CRAWLER CRANE	01 No.	BHEL HIRED CRANE. OPERATOR FOR THIS WILL BE PROVIDED BY BHEL.
03	180 T CRAWLER CRANE	01 No. PER UNIT.	BHEL HIRED CRANE. OPERATOR FOR THIS WILL BE PROVIDED BY BHEL. BHEL SHALL PROVIDE THE CRANE WITH OPERATOR FROM START OF WORK AT SITE.

NOTE:

1. FUEL FOR THE ABOVE CRANES SHALL BE IN CONTRACTOR'S SCOPE.
2. 250 MT CRANES ARE CONSIDERED MAINLY FOR BOILER ERECTIONS, HOWEVER ON NEED BASED FOR HEAVY LIFT AND/OR HIGH REACH IN BUNKER BAY STRUCTURE ERECTION THESE CRANES SHALL BE MADE AVAILABLE. THE ALLOCATION OF THESE CRANES WILL BE DECIDED BY BHEL SITE ENGINEER, BASED ON ITS AVAILABILITY AND OTHER IMMINENT NEEDS, WHICH SHALL BE BINDING ON CONTRACTOR. THESE CRANES (i.e. 250 T MT) SHALL NOT BE AVAILABLE FOR USE IN FABRICATION YARD.
3. FURTHER, USE OF ABOVE CRANES MAY BE ALLOWED FOR ANY OTHER ERECTION RELATED ACTIVITY AT THE DISCRETION & APPROVAL OF BHEL SITE INCHARGE.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.1 TIME SCHEDULE & MOBILIZATION

6.1.1 INITIAL MOBILIZATION

After receipt of fax LOI, Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilisation. Contractor shall mobilize necessary resources within 2 weeks of issue of fax letter of intent or as per the directive of Project Manager / Construction Manager. Such resources shall be progressively augmented to match the schedule of milestones and commissioning.

6.1.2 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 mobilise further resources (in addition to those required for activities under clause no. 6.1.1) as per requirement to commence the work of erection, testing etc. of Bunker structure & raw coal bunkers 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 major permanent equipment / component / column covered in the scope of these specifications shall be recognized as “start of contract period”. Smaller items like packer plates, shims, anchors, inserts etc. will not be considered as start of contract period.

THE CONTRACTOR HAS TO SUBSEQUENTLY AUGMENT HIS RESOURCES IN SUCH A MANNER THAT THE ENTIRE WORK IS COMPLETED TO ACHIEVE THE FOLLOWING TENTATIVE SCHEDULE:

SN	MAJOR MILESTONE	COMPLETION PERIOD FOR EACH UNIT
01	FABRICATION OF BUNKER STRUCTURES AND BUNKER, ERECTION, TESTING AND COMPLETION	12 MONTHS

CONTRACTOR HAS TO PLAN TO START THE FABRICATION WORK OF IMMEDIATELY AFTER GETTING THE FAX LETTER OF LOI.

IN ORDER TO MEET ABOVE SCHEDULE IN GENERAL, AND ANY OTHER INTERMEDIATE TARGETS SET, TO MEET CUSTOMER/PROJECT SCHEDULE REQUIREMENTS, CONTRACTOR SHALL ARRANGE & AUGMENT ALL NECESSARY RESOURCES FROM TIME TO TIME ON THE INSTRUCTIONS OF BHEL.

6.1.4 CONTRACT PERIOD

THE TOTAL CONTRACT PERIOD FOR COMPLETION OF **EACH UNIT SHALL BE 12 (TWELVE) MONTHS** FROM THE START OF CONTRACT PERIOD.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

ACTUAL START OF FABRICATION OF ANY COMPONENT AS DIRECTED AND ACCEPTED BY BHEL SHALL BE RECKONED FOR START OF CONTRACT.

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

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

STAGES OF PROGRESSIVE PRO-RATA PAYMENTS

100% OF ITEM RATE ON PRORATA BASIS AGAINST MONTHLY RA BILLS AS FOLLOWS.

AS PER SCHEDULE OF RATE FOR ITEM NO. 2301 (b) FOR ERECTION, ALIGNMENT & WELDING CAN BE FURTHER BREAK UP AS FOLLOWS

- (A) ERECTION : 80% OF QUOTED RATE UNDER ITEM 2301 (b)**
- (B) WELDING & ALIGNMENT : BALANCE 20% OF QUOTED RATE UNDER ITEM 2301(b)**

The RA bill payment shall be made as made as per Cl no 10.0 of Chapter –X of SCC (page-44) and as per cl no : 2.6 of GCC .

GENERAL

WEIGHT OF PACKERS AND SHIMS FABRICATED AT SITE WHICH BECOME PERMANENT PART OF EQUIPMENT, WILL BE PAID FOR BASED ON ACTUAL WEIGHT.

MEASUREMENT OF THE WORK COMPLETED

- A) WHERE PAYMENT IS TO BE MADE ON THE BASIS OF WEIGHT, THE WEIGHT PER UNIT GIVEN IN THE BHEL DOCUMENT ONLY SHALL BE TAKEN IN TO CONSIDERATION. IN CASE SUCH INFORMATION IS NOT AVAILABLE IN BHEL DOCUMENTS, THEN THE LATEST RELEVANT INDIAN STANDARDS IN THIS REGARD MAY BE APPLIED.
- B) SPARES, SURPLUS QUANTITY, ERECTION CONTINGENCY MATERIALS WILL NOT BE PAID FOR UNLESS THE SAME HAS BEEN CONSUMED IN PLACE OF REGULAR ITEM OF MEASURABLE WORK AS PER THE RATE SCHEDULE.
- C) WHERE THE PAYMENT IS MADE ON THE BASIS OF ITEM RATE, ACTUAL EXECUTED QUANTITY MEASURED JOINTLY SHALL ONLY BE PAID FOR.
- D) IT IS CLARIFIED THAT AS FAR AS WEIGHT CONSTITUTED BY WELDING CONSUMABLES AND OTHER CONSUMABLES SUPPLIED BY BHEL AS WELL AS BY THE CONTRACTOR, SHALL NOT BE CONSIDERED FOR PAYMENT.
- E) BHEL ENGINEER'S DECISION REGARDING STAGE OF PAYMENT CORRESPONDING TO PROGRESS OF WORK, CALCULATION OF WEIGHT ETC WILL BE FINAL AND BINDING ON THE CONTRACTOR.
- F) NO SEPARATE PAYMENT SHALL BE MADE FOR PROVIDING GROUT MATERIALS AND GROUTING OF STRUCTURES ETC SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

8.1 TAXES, DUTIES, LEVIES

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

Service Tax and Cess on Service Tax as applicable on output Services are excluded from contractor's scope; therefore contractor's price/rates shall be **exclusive** of Service Tax and Cess on Output Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and deposit the same with the concerned tax authorities, such applicable amount will be paid by BHEL.

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,

- I. The name, address and the registration number of the contractor,
- II. The name and address of the party receiving taxable service,
- III. Description, classification and value of taxable service provided and,
- IV. The service tax payable thereon.

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

Contractor shall obtain prior written consent from BHEL before billing the amount towards such taxes.

With introduction of Cenvat Credit Rules 2004, which came into force w.e.f. 10.09.2004, Excise Duty paid on Input Goods including Capital Goods and Service Tax paid on Input Services that are used for providing the output services can be taken credit of against the Service Tax payable on output services. However BHEL may opt for availing the abatement provision in which case cenvat credit may not be available on input duty.

8.1.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT) 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 **exclusive** of the same. Where such taxes are required to be paid by the contractor, this will be reimbursed on production of proof of payment made to the authorities by the Contractor. In any case the Contractor shall

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

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. The contractor has to take all necessary steps to **minimize tax on input goods** by purchasing the materials from any registered dealer of the concerned state only. In case contractor opts for composition, it will be with the prior express consent of BHEL. Deduction of tax at source shall be made as per the provisions of law unless otherwise found exempted. In case tax is deducted at source as per the provisions of law, this is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made unless specifically agreed to.

8.1.4 Modalities of Tax Incidence on BHEL

Wherever the relevant tax laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.

8.1.5 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 price bid.

8.2 BUILDING & OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING & OTHER CONSTRUCTION WORKERS CESS Act, 1996 & CESS RULES, 1998.

In case any portion of work involves execution through building or construction workers, then compliance to the above titled Acts shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances it may be ensured as under:-

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: Taxes and Other Duties

- i. It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a licence to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of licence / permission to BHEL within a period of one month from the date of award of contract.
- ii. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these act and rules including that of payment / deposit of 1% cess on the extant of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.
- iii. It shall be the responsibility of the sub-contractor to furnish the receipts / challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the sub-contractor during the preceding month.
- iv. It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including that is provided under the Workmen's Compensation Act, 1923.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Annexure-I PAINTING SCHEME

ALL PRIMERS AND PAINTS IS IN THE CONTRACTOR'S SCOPE UNLESS PROVIDED OTHERWISE IN BHEL SCOPE AS FREE ISSUE

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XI WELDING & RADIOGRAPHY

11 WELDING, RADIOGRAPHY AND OTHER NON-DESTRUCTIVE TESTING, POST WELD HEAT TREATMENT

11.1 WELDING

11.1.1

INSTALLATION OF EQUIPMENT INVOLVES GOOD QUALITY WELDING, NDE CHECKS, POST WELD HEAT TREATMENT ETC. CONTRACTOR'S PERSONNEL ENGAGED SHOULD HAVE ADEQUATE QUALIFICATION ON THE ABOVE WORKS.

11.1.2

THE METHOD OF WELDING WILL BE INDICATED IN THE DETAILED DRAWING/DOCUMENTS. BHEL ENGINEER WILL HAVE THE OPTION OF CHANGING THE METHOD OF WELDING AS PER SITE REQUIREMENT.

11.1.3

BEFORE ANY WELDER IS ENGAGED ON WORK, HE SHALL BE TESTED AND QUALIFIED BY BHEL/CUSTOMER, THOUGH THEY MAY POSSESS THE PREVIOUS CERTIFICATE. BHEL RESERVES THE RIGHT TO REJECT ANY WELDER WITHOUT ASSIGNING ANY REASON. ALL THE EXPENDITURE IN TESTING/QUALIFICATION OF THE CONTRACTOR'S WELDER SHALL BE BORNE BY CONTRACTOR.

11.1.4

UNSATISFACTORY AND CONTINUOUS POOR PERFORMANCE MAY RESULT IN DISCONTINUATION OF CONCERNED WELDER.

11.1.5

THE WELDED SURFACE SHALL BE CLEANED OF SLAG AND PAINTED WITH PRIMER PAINT TO PREVENT RUSTING, CORROSION. FOR THIS CONSUMABLES LIKE PAINT /PRIMER ETC WILL BE IN THE CONTRACTOR'S SCOPE.

11.1.6

WELDING ELECTRODES HAVE TO BE STORED IN ENCLOSURES HAVING TEMPERATURE AND HUMIDITY CONTROL ARRANGEMENTS. THIS ENCLOSURE SHALL MEET BHEL SPECIFICATIONS.

11.1.7

WELDING ELECTRODES, PRIOR TO THEIR USE, CALL FOR BAKING FOR SPECIFIED PERIOD AND WILL HAVE TO BE HELD AT SPECIFIED TEMPERATURE FOR SPECIFIED PERIOD. ALSO, DURING EXECUTION, THE WELDING ELECTRODES HAVE TO BE CARRIED IN PORTABLE OVENS.

11.2 NON DESTRUCTIVE EXAMINATION:

11.2.1

CONTRACTOR SHALL PROVIDE ALL RESOURCES AND MAKE ALL ARRANGEMENTS FOR THE RADIOGRAPHIC EXAMINATION OF WELDS FOR THIS WORK. FOR REASONS OF SAFETY, INVARIABLY THE RADIOGRAPHY WORK WILL BE CARRIED OUT AFTER THE NORMAL WORKING HOURS AND CLOSE OF OTHER SITE ACTIVITIES ONLY. IN THIS REGARD, THE CONTRACTOR HAS TO ADHERE TO THE SAFETY RULES / REGULATIONS LAID BY BARC AUTHORITIES FROM TIME TO TIME.

11.2.2

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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RADIOGRAPHY INSPECTION OF WELDS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS AND RECOMMENDATION OF BHEL ENGINEER. THE MINIMUM QUANTUM OF RADIOGRAPHIC INSPECTION SHALL BE AS PER PROVISION OF BHEL'S ERECTION DOCUMENTS. THEY MAY, HOWEVER BE INCREASED DEPENDING UPON THE PERFORMANCE OF THE INDIVIDUAL WELDER AT THE DISCRETION OF BHEL ENGINEER/BOILER INSPECTING AUTHORITY. BIDDER SHALL ALSO ARRANGE THE UT EQUIPMENT WITH RECORDING FACILITY AT HIS OWN COST. UT SHALL BE DONE AS PER REQUIREMENT OF BHEL / CLIENT. RECORDS OF UT SHALL BE PRODUCED & SUBMITTED TO AS PER SITE REQUIREMENT.

11.2.3

ALL X-RAY / GAMMA RAY FILMS OF WELD JOINTS SHALL BE PRESERVED PROPERLY AND BE HANDED OVER TO BHEL.

11.2.4

THE FIELD WELDED JOINTS SHALL BE SUBJECT TO DYE-PENETRANT/MPT/RT/ OTHER NON-DESTRUCTIVE EXAMINATION AS SPECIFIED IN THE RESPECTIVE ENGINEERING DOCUMENTS/ AS INSTRUCTED BY BHEL.

11.2.5

WHERE REQUIRED, SURFACE PREPARATION, LIKE SMOOTH GRINDING OF WELDED AREA, PRIOR TO RADIOGRAPHY SHALL BE DONE. IT MAY ALSO BECOME NECESSARY TO ADOPT INTER-LAYER RADIOGRAPHY/MPT/UT DEPENDING UPON THE SITE/ TECHNICAL REQUIREMENT NECESSITATING INTERRUPTIONS IN CONTINUITY OF THE WORK AND MAKING NECESSARY ARRANGEMENTS FOR CARRYING OUT THE ABOVE WORK. THE CONTRACTOR SHALL TAKE ALL THIS INTO ACCOUNT IN HIS OFFER. THE REQUIRED NDT METHOD/PROCEDURE WILL BE DECIDED BY BHEL ENGINEER AT SITE.

11.2.6

FOR CARRYING OUT ULTRASONIC TESTING OF WELDING JOINTS OF LARGE SIZE, IT WILL BE NECESSARY TO PREPARE SURFACE BY GRINDING AND BUFFING A SMOOTH FINISH AND CONTOUR AS NECESSARY. THE CONTRACTOR'S SCOPE OF WORK INCLUDES SUCH PREPARATION AS INCIDENTAL TO WORK.

11.2.7

NO SEPARATE PAYMENT FOR ANY NDE ACTIVITIES IS ENVISAGED. ACCORDINGLY THE OFFERED RATE SHALL BE INCLUSIVE OF COST OF ALL NDE.

11.3 HEAT TREATMENT:

11.3.1

FOR THE PURPOSE OF TEMPERATURE RECORDING OF STRESS RELIEVING PROCESS, THERMOCOUPLES HAVE TO BE ATTACHED TO THE WELD JOINT. THE NUMBER OF TEMPERATURE MEASURING POINTS AND LOCATIONS SHALL BE AS PER THE STANDARDS OF BHEL. THERMOCOUPLES HAVE TO BE ATTACHED USING CAPACITOR DISCHARGE TYPE PORTABLE THERMOCOUPLE ATTACHMENT UNIT. CONTRACTOR SHALL ARRANGE SUFFICIENT NUMBER OF THERMOCOUPLE ATTACHMENT UNITS.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XI WELDING & RADIOGRAPHY

11.3.2

CONTRACTOR SHOULD PROVIDE TEMPERATURE INDICATOR / TEMPERATURE RECORDER FOR MEASURING TEMPERATURE DURING PRE-HEATING FOR WELDING OR FOR CONTROLLING TEMPERATURE OF METAL FOR HOT CORRECTION ETC. THE TEMPERATURE RECORDERS SHOULD BE PREFERABLY OF SOLID STATE TYPE.

11.3.3

HEAT TREATMENT MAY REQUIRE TO BE CARRIED OUT AT ANY TIME (DAY OR NIGHT) TO ENSURE THE CONTINUITY OF THE PROCESS. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS INCLUDING LABOURER REQUIRED FOR THE SAME AS PER DIRECTIONS OF BHEL.

11.3.4

IN CERTAIN CASES ONLY THE PRE-HEATING OF WELD JOINTS MAY BE CALLED FOR.

11.3.5

FOR WELD JOINTS OF HEAVY STRUCTURAL SECTIONS, IF HEAT TREATMENT IS REQUIRED, THE SAME SHALL BE CARRIED OUT AS PART OF THE WORK.

11.3.6

CHECKING EFFECTIVENESS OF STRESS RELIEVING BY HARDNESS TESTS (BY DIGITAL HARDNESS TESTER OR OTHER APPROVED TEST METHODS AS PER BHEL ENGINEER'S INSTRUCTION) INCLUDING NECESSARY TESTING EQUIPMENTS IS WITHIN THE SCOPE OF THE WORK / SPECIFICATION.

11.3.7

PREHEATING, INTER-PASS HEATING, POST WELD HEATING AND STRESS RELIEVING AFTER WELDING ARE PART OF ERECTION WORK AND SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH BHEL ENGINEER'S INSTRUCTIONS. WHERE THE ELECTRIC RESISTANCE HEATING METHOD IS ADOPTED CONTRACTOR SHALL MAKE ALL ARRANGEMENT INCLUDING HEATING EQUIPMENT WITH AUTOMATIC RECORDING DEVICES, ALL HEATING ELEMENTS, THERMOCOUPLES AND ATTACHMENT UNITS, GRAPH SHEETS, THERMAL CHALKS, & INSULATING MATERIALS LIKE MINERAL WOOL, ASBESTOS CLOTH, CERAMIC BEADS, ASBESTOS ROPES ETC, REQUIRED FOR ALL HEATING AND STRESS RELIEVING WORKS.

11.3.8

ALL THE RECORDED GRAPHS FOR HEAT TREATMENT SHALL BE HANDED OVER TO BHEL/ IBR AUTHORITIES AND DUE CLEARANCES OBTAINED.

11.3.9

RESULTS OF THESE PROCESSES SHALL BE VERIFIED/ VALIDATED AS PER REQUIREMENTS OF BHEL/CLIENT.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XII PRESERVATION & PROTECTION OF COMPONENTS

12.2 PRESERVATION & PROTECTION OF COMPONENTS

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

12.3

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.

12.4

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

12.5

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

12.6

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

12.7

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.