

E-TENDER SPECIFICATIONS

S. No.	E- TENDER SPECIFICATION NUMBER
01	BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403

For

Structural steel works (i.e. Pre Assembly, Erection, alignment, Bolting and touch-up painting, roofing & Cladding work other allied works) of Ash Handling Plant (AHP) & FGD (LHP & GHP) Steel structure and Associated structure which includes the AHP Compressors houses, pipe racks, belt conveyor structures (BCN), TPs and Scope of work includes supply of all Material (As per TCC and BOQ), Consumables, labour, tools and plants at **3x800 MW PVUNL Project Patratu Site Jharkhand.**

VOLUME – I

TECHNICAL BID

THIS TENDER SPECIFICATION CONSISTS 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
Volume-IE	Plot Plan
Volume II	Price Bid



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

CONTENTS

Volume No	Description	Hosted in website bhel.com (Briefly) and detailed in BHEL e-Procurement Portal as files titled
NIL	Tender Specification Issue Details	Part of Vol-I-2403
NIL	Notice Inviting Tender	Part of Vol-I-2403
I-A	Technical Conditions of Contract	Vol-IA-2403
I-B	Special Conditions of Contract	Part of Vol-I-BCD-2403
I-C	General Conditions of Contract	Part of Vol-I-BCD-2403
I-D	Forms & Procedures	Part of Vol-I-BCD-2403
I-E	Plot Plan	VOLIEPlotPlan2403
II	Price Bid Specification	VollIPriceBid2403

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01	BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403

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Structural steel works (i.e. Pre Assembly, Erection, alignment, Bolting and touch-up painting, roofing & Cladding work other allied works) of Ash Handling Plant (AHP) & FGD (LHP & GHP) Steel structure and Associated structure which includes the AHP Compressors houses, pipe racks, belt conveyor structures (BCN), TPs and Scope of work includes supply of all Material (As per TCC and BOQ), Consumables, labour, tools and plants at **3x800 MW PVUNL Project Patratu Site Jharkhand.**

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR TENDER SUBMISSION Refer Notice Inviting Tender

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

AGM (Purchase)

Place: Nagpur
Date:

2403

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



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Ref: BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403

Date: 06/04/2021

NOTICE INVITING E-TENDER (NIT)

NOTE: BIDDER MAY DOWNLOAD/ UPLOAD THE TENDER/ OFFER FROM/ON BHEL E-PROCUREMENT PORTAL → <https://eprocurebhel.co.in>

To,

Dear Sir/Madam,

Sub : NOTICE INVITING E-TENDER

Sealed offers in two part bid system (National competitive bidding (NCB) or International Competitive Bidding (ICB) are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-1) 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

S No.	ISSUE	DESCRIPTION	
i	E-TENDER NUMBER	BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403	
ii	Broad Scope of job	Structural steel works (i.e. Pre Assembly, Erection, alignment, Bolting and touch-up painting, roofing & Cladding work other allied works) of Ash Handling Plant (AHP) & FGD (LHP & GHP) Steel structure and Associated structure which includes the AHP Compressors houses, pipe racks, belt conveyor structures (BCN), TPs and Scope of work includes supply of all Material (As per TCC and BOQ), Consumables, labour, tools and plants at 3x800 MW PVUNL Project Patratu Site Jharkhand.	
iii	DETAILS OF TENDER DOCUMENT		
A	Volume-IA	Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc.	Applicable
B	Volume-IB	Special Conditions of Contract (SCC)	Applicable
C	Volume-IC	General Conditions of Contract (GCC)	Applicable
D	Volume-ID	Forms and Procedures	Applicable
F	Volume-II	Price Bid as specified in E-Procurement Portal	Applicable
iv	Issue of Tender Documents	Tender documents will be available for downloading from BHEL website (www.bhel.com) or e-procurement portal (https://eprocurebhel.co.in) as per schedule below: Start : 06/04/2021 , Time : 13:00 Closes : 27/04/2021 , Time : 13:00 Brief information of the tenders shall also be available at central public procurement portal. (https://eprocure.gov.in/epublish/app)	Applicable
v	DUE DATE & TIME OF OFFER SUBMISSION	Date: 27/04/2021, Time: 13.00 Hrs • Place: on E-Tender Portal https://eprocurebhel.co.in	Applicable
vi	OPENING OF	Date: 27/04/2021, Time: 17.00 Hrs	Applicable

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S No.	ISSUE	DESCRIPTION	
	TENDER (Techno-Commercial Bid)	<p><i>Notes:</i></p> <p>(1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day.</p> <p>(2) Bidder may depute representative to witness the opening of tender. For e-Tender, Bidder may witness the opening of tender through e-Procurement portal only.</p>	
vii	EMD AMOUNT	<p>₹62,00,000/- (Rupees Sixty Two Lakhs Only)</p> <p>Important Note: Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC.</p>	<i>Applicable</i>
viii	COST OF TENDER	<i>Free</i>	
ix	LAST DATE FOR SEEKING CLARIFICATION	<p>One day before due date of offer submission. Along with soft version also, addressing to undersigned & to others as per contact address given below:</p> <p>1) Name: P R Chiwarkar Designation: AGM Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Phone: Landline: +91-712-2858-633 Email :prchiwarkar@bhel.in Fax:+91-712-2858600</p> <p>2) Name: Shubhangi Tembhurne Designation: Dy Manager Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Phone: Land Line: +91-712-2858742 Email :shubh@bhel.in Fax:+91-712-2858600</p>	<i>Applicable</i>
x	SCHEDULE OF Pre Bid Discussion (PBD)	-	Not Applicable
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	<p>Sh Virendra Bahadur Singh, IPS (Retd.) and Sh. Arun Chandra Verma, IPS (Retd.)</p>	<i>Applicable</i>
xii	Latest updates	<p>Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com-->Tender Notifications →View Corrigendum), Central Public Procurement portal (https://eprocure.gov.in/epublish/app) & on e-tender portal https://eprocurebhel.co.in and not in the newspapers. Bidders to keep themselves updated with all such information.</p>	

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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 digitally using Class III DSC & uploaded in E-Procurement Portal, 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 Not Used
- 4.0 Unless specifically stated otherwise, bidder shall deposit EMD as per clause 1.9 of General Conditions of Contract.

For Electronic Fund Transfer the details are as below:-

NAME OF THE BENEFICIARY	BHARAT HEAVY ELECTRICALS LTD
ADDRESS OF THE COMPANY	SHREE MOHINI COMPLEX 345, KINGSWAY,NAGPUR
NAME OF BANK	STATE BANK OF INDIA
NAME OF BANK BRANCH AND BRANCH CODE	SBI,KINGSWAYBRANCH,BRANCH CODE-00432
CITY	NAGPUR
ACCOUNT NUMBER	31380025872
ACCOUNT TYPE	CURRENT A/C
IFSC CODE OF THE BENEFICIARY BANK BRANCH	SBIN0000432
MICR CODE OF THE BANK BRANCH	440002002

(Note -: In case of E-Tenders, proof of remittance of EMD should be uploaded in the E-Procurement Portal and originals, as applicable, shall be sent to the officer inviting tender within a reasonable time, failing which the offer is liable to be rejected.

5.0 Procedure for Submission of Tenders:

This is an E-tender floated online through our E-Procurement Site (<https://eprocurebhel.co.in>). The bidder should respond by submitting their offer online only in our e-Procurement platform at (<https://eprocurebhel.co.in>). Offers are invited in two-parts only.

Documents Comprising the e-Tender

The tender shall be submitted online ONLY EXCEPT EMD (in physical form) as mentioned below:

a. Technical Tender (UN priced Tender)

All Technical details (e.g. Eligibility Criteria requested (as mentioned below)) should be attached in e-tendering module, failing which the tender stands invalid & may be REJECTED. Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- i. Earnest Money Deposit (EMD) furnished in accordance with NIT Clause 4.0. ~~Alternatively, documentary evidence for claiming exemption as per clause 29 of NIT.~~
- ii. Technical Bid (without indicating any prices).

b. Price Bid:

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.
- iii. Note: It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- iv. A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to

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bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.

- v. A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.

DO NOT'S

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered. **Also, uploading of the price bid in prequalification bid or technical bid may RESULT IN REJECTION of the tender.**

Digital Signing of e-Tender

Tenders shall be uploaded with all relevant PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION digital signature certificate (DSC).

The Requirement:

1. A PC with Internet connectivity &
2. DSC (Digital Signature Certificate) (**Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION**)

BHEL has finalized the e-procurement service Provider:-

NIC PORTAL (<https://eprocurebhel.co.in>)

For E-PROCUREMENT ASSISTANCE & TRAINING, NIC PORTAL HELPDESK CONTACTS AS PER FOLLOWING:

For any technical related queries, please call at 24 x 7 Help Desk Number

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

1. Peter Raj, NIC, Ph: 9942069052

Email Support: support-eproc@nic.in

Other details/update yourself from : <https://eprocurebhel.co.in>

The process of utilizing e-procurement necessitates usage of **DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)** and you are requested to procure the same immediately, if not presently available with you. Please note that only with DSC, you will be able to login the e-procurement secured site and take part in the tendering process.

The contact details of the DSC certifying authority:-

please refer <http://www.mca.gov.in/> → MCA SERVICES → DSC SERVICES

Vendors are requested to go through seller manual available on <https://eprocurebhel.co.in>.

Procedure for Submission of Tenders (To be used in case of Paper bid only): 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)' 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) (To be used in case of Paper bid only):

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Sl. no.	Description	Remarks
	Part-I A	
	<p><u>ENVELOPE – I superscribed as:-</u> PART-I (TECHNO COMMERCIAL BID) TENDER NO:- NAME OF WORK:- PROJECT:- DUE DATE OF SUBMISSION:-</p> <p><u>CONTAINING THE FOLLOWING:-</u></p>	
i. —	Covering letter/Offer forwarding letter of Tenderer.	
ii. —	<p>Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p><u>Note:</u></p> <p>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.</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.	

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

	PART-II	
	<u>PRICE BID</u> consisting of the following shall be enclosed	
	<u>ENVELOPE-III</u> superscribed as: PART-II (PRICE BID) TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION: <u>CONTAINING THE FOLLOWING</u>	
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	
	<u>ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE)</u> superscribed as: TECHNO COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION: <u>CONTAINING THE FOLLOWING:</u>	
i	○ Envelopes I ○ Envelopes II ○ Envelopes III	

- **SPECIAL NOTE: All documents/ annexures to be submitted should be uploaded in respective places in the E-Tender portal as per the list mentioned given in this NIT. BHEL shall not be responsible for any in-complete 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

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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:

Bidder's 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 cut off month for reckoning 'Load' shall be the 3rd Month preceding the month corresponding to the 'latest date of bid submission', in the following manner -

(Note: For example, if latest bid submission is in Jan 2017, then the 'load' shall be calculated up to and inclusive of Oct 2016)

Total number of Packages in hand = Load (P)

Where 'P' is the sum of all unit wise identified packages (refer table-1) under execution with BHEL Regions as on the cut off month defined above, including packages yet to be commenced, excepting packages which are on Long Hold.

- II. **PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (under execution/ executed during the 'Period of Assessment' in all 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 and including the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the 3rd Month preceding the month corresponding to 'latest date of bid submission', in the following manner:

(Note: For example, if 'latest date of bid submission' is in Jan 2017, then the 'performance' shall be assessed for a 6 months' period up to and inclusive of Oct 2016 (i.e. from May 2016 to Oct 2016), 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 of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions = P_T (i.e. $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$)
- 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 (i.e. $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$)
- c) Sum ' S_1 ' of 'Monthly Performance Evaluation' Scores ($S_{1-1}, S_{1-2}, S_{1-3}, S_{1-4}, S_{1-5} \dots S_{1-T_1}$) for similar package P_1 , for the 'period of assessment' ' T_1 ' (i.e. $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-T_1}$). 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 (i.e. ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots + S_N$ ')

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- 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

= -----

Aggregate of months for each of the similar packages 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 ₁	P ₂	P ₃	P ₄	P ₅	...	P _N	Total No. of similar packages for all Regions = P _T i.e. 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 Packages (as in row 1)	T ₁	T ₂	T ₃	T ₄	T ₅	...	T _N	Sum (Σ) of columns (iii) to (ix) = T _T
3	Monthly performance scores for the corresponding period (as in Row 2)	S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1}	S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2}	S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3}	S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4}	S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5}	S _{N-1} , S _{N-2} , S _{N-3} , S _{N-4} , ... S _{N-TN}	-----
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S ₁	S ₂	S ₃	S ₄	S ₅	...	S _N	Sum (Σ) of columns (iii) to (ix) = S _T

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- ii). Calculation of Overall 'Performance Rating' (R_{BHEL}) in case at least 6 evaluation scores for 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. ' R_{BHEL} ' 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' i.e. 6 months preceding and including the cut-off month
- b) 12 months preceding and including the cut-off month
- c) 24 months preceding and including the cut-off month

In case, R_{BHEL} 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_{BHEL}) at Power Sector Regions:

Sl. no.	Overall Performance Rating (R_{BHEL})	Corresponding value of 'L'
1	=60	NA
2	> 60 and \leq 65	0.4
3	> 65 and \leq 70	0.35
4	> 70 and \leq 75	0.25
5	> 75 and < 80	0.2
6	\geq 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 $P_{Max} = (R_{BHEL} - 60)$ divided by corresponding value of 'L', i.e. $(R_{BHEL} - 60)/L$

Note:

- i). In case the value of P_{Max} results in a fraction, the value of P_{Max} is to be rounded off to next whole number
- ii). For $R_{BHEL} = 60$, $P_{Max} = '1'$
- iii). For $R_{BHEL} \geq 80$, there will be no upper limit on P_{Max}

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if $P \leq P_{Max}$
(Where P is calculated as per clause 'I' above)

IV. Explanatory note:

- i). Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or C&I 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, C&I, Civil, Structure etc. is considered individual level of package. For example, in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e. the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl.no. II above, needs to be evaluated considering all the identified packages (i.e. Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above.
- ii). Identified Packages (Unit wise)

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Table-1

Civil	Electrical and C&I	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). C&I iii). Others (Elect. and C&I)	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). ESP iv). LP Piping 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 Management x). FGD xi). ACC xii). Others (Mechanical)

iii). Bidders who have not been evaluated for at least six package months in the last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions, 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 completion of all the contracts against which vendor has been tagged as First Timer or availability of 6 evaluation scores within last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions.

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 ‘Assessment of Capacity of Bidders’.

iv). Consequent upon applying the criteria of ‘Assessment of Capacity of Bidders’ detailed above on all the bidders qualified against Technical and Financial Qualification criteria, if the number of qualified bidders reduces to less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then for further processing of the Tender, BHEL at its discretion reserves the right to also consider the bidders who are “not qualified” as per criteria of ‘Assessment of Capacity of Bidders’ and for this, procedure described in following three options shall be followed:

a) All the bidders having Overall Performance Rating (R_{BHEL}) ≥ 60 shall be considered qualified against criteria of ‘Assessment of Capacity of Bidders’.

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- b) If even after using option “a”, the number of qualified bidders remains less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then in addition to bidders considered as per option “a”, “First timer” bidders having average of available performance scores ≥ 60 upto and including the Cut Off month shall also be considered qualified against criteria of ‘Assessment of Capacity of Bidders’.
- c) If even after using option “a” and “b”, the number of qualified bidders remains less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then in addition to bidders considered as per option “a” and “b”, “First timer” bidders for whom no performance score is available in the system upto and including the Cut Off month, shall also be considered qualified against criteria of ‘Assessment of Capacity of Bidders’.

Note:- In case, the number of bidders qualified against Technical and Financial Qualification criteria itself is less than minimum no. of bidders required for conducting RA as per extant RA Guidelines, then all bidders (a)- having Overall Performance Rating (R_{BHEL}) ≥ 60 , (b)- First timer” bidders having average of available performance scores ≥ 60 upto and including the Cut Off month, (c)- “First timer” bidders for whom no performance score is available in the system upto and including the Cut Off month, shall be considered qualified against criteria of ‘Assessment of Capacity of Bidders’ for further processing of tender.

- v). ‘Under execution’ shall mean works in progress as per the following:
 - a. Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
 - b. Up to Steam Blowing in case of Boiler/ESP/Piping Packages
 - c. Up to Synchronization in all Balance Packages

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

- vi). Contractor shall provide the latest contact details i.e. mail-ID and Correspondence Address to SCT Department, so that same can be entered in the Contractor Performance Evaluation System, and in case of any change/discrepancy same shall be informed immediately. Login Details for viewing scores in Contractor Performance Evaluation System shall be provided to the Contractor by SCT Department.
- vii). Performance Evaluation for Activity Month shall be completed in Evaluation Month (i.e. month next to Activity Month) or in rare cases in Post Evaluation Month (i.e. month next to Evaluation Month) after approval from Competent Authority. In case scores are not acceptable, Contractor can submit Review Request to GM Site/ GM Project latest by 25th of Evaluation Month or 3 days after approval of score, whichever is later. However, acceptance/rejection of ‘Review Request’ solely depends on the discretion of GM Site/GM Project. After acceptance of Review Request, evaluation score shall be reviewed at site and the score after completion of review process shall be acceptable and binding on the contractor.
- viii). Project on Hold due to reasons not attributable to bidder -
 - a. **Short hold:** Evaluation shall not be applicable for this period, however Loading will be considered.
 - b. **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation as well as Loading shall not be considered for this period.
- ix). Performance evaluation as specified above in this clause is applicable to Prime bidder and Consortium partner (or Technical tie up partner) for their respective scope of work.

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- 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 and/or through e-procurement portal, 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.**

“Integrity Pact (IP)”

- (a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl. No.	IEM	Email
1.	Shri Arun Chandra Verma, IPS (Retd.)	acverma1@gmail.com
2.	Shri Virendra Bahadur Singh, IPS (Retd.)	ybsinghips@gmail.com

- (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- (c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

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Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below:

Details of contact person(s):

Name: (1) P R Chiwarkar/ AGM (Purchase) 2) Shubhangi Tembhurne / Dy Manager (Purchase)
Dept.: Purchase Department
Address: Floor No. 5 & 6, Shreemohini Complex, 345 Kingsway, Nagpur-440001
Phone: (LL/ Mobile) (1) 0712-2858633 0712-2858742
Email: prchiwarkar@bhel.in shubh@bhel.in
Fax: 0712-2858699

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.

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 authorized 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 **Reverse Auction:** Applicable. "BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com on "supplier registration page".) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price Bids of all the techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

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 for the said contract with a validity period of six months initially. In case bidder becomes L1, Consortium Agreement valid till contractual completion period shall be

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submitted to BHEL before signing the contract. Consortium Agreement shall be kept valid till scope of work awarded to consortium partner(s) as per contract is completed.

- 23.2 'Standalone' 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) including Prime Bidder shall be NOT more than 3 (three).
- 23.4 Prime Bidder shall be as specified in the Pre-Qualification Requirement, else the bidder who has the major share of work.
- 23.5 In order to be qualified for the tender, Prime Bidder and Consortium partner or partners shall satisfy (i) the Technical 'Pre Qualifying Requirements' specified for the respective package, (ii) "Assessment of Capacity of Bidder" as specified in clause 9.0.
- 23.6 Prime Bidder shall comply with additional 'Technical' criteria of PQR as defined in 'Explanatory Notes for the PQR'.
- 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 and BHEL shall take necessary action as per extant guidelines. 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 Prime Bidder withdraws or insolvency / liquidation / winding up proceedings have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHEL.
- 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 one work with a consortium partner under direct order of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.

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23.14 The consortium 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. In case there are two consortium partners, then each partner shall submit SD equivalent to 0.5% of the total contract value in addition to the SD to be submitted by the Prime Bidder for the total contract value. However, Prime Bidder has also option for submission of SD on behalf of consortium partner (s).

SD submitted by Consortium Partner(s) may be released in case corresponding scope of work of the respective Consortium partner(s) has been completed upto the extent of 80% based on certification by Construction Manager and concurrence by the prime bidder.

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/upload 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 The consultant / firm (and any of its affiliates) shall not be eligible to participate in tender(s) for the related works or services for the same project, if they were engaged for the consultancy services.

27.0 Guidelines/rules in respect of Suspension of Business dealings, Vendor evaluation format, Quality, Safety & HSE guidelines, Experience Certificate, etc. may undergo change from time to time and the latest one shall be followed. The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on www.bhel.com on "supplier registration page".

28.0 The offers of the bidders who are on the banned/ hold list and also the offer of the bidders, who engage the services of the banned/ hold firms, shall be rejected. The list of **banned/ hold firms** is available on BHEL web site www.bhel.com.

28.1 Integrity commitment, performance of the contract and punitive action thereof:

28.1.1 Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender Process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

28.1.2 Commitment by Bidder/ Supplier/ Contractor:

- (i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
- (ii) The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
- (iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

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If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the prices or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extent guidelines of the company available on www.bhel.com and / or under applicable legal provisions.

29.0 Micro and Small Enterprises (MSE)

Any Bidder falling under MSE category, shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer.

Type under MSE	SC/ST owned	Women owned	Others (excluding SC/ ST & Women
Micro			
Small			

Note: - If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category.

a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011 MA dtd. 09/11/2016 office of AS & DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration Certificate or EM-II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or Udyog Aadhar Memorandum (UAM) & Acknowledgement or EM-II Certificate along with attested copy of a CA certificate (format enclosed as Annexure - 3) where deemed validity of EM-II certificate of five years has expired applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. Documents submitted by the bidder may be verified by BHEL for rendering the applicable benefits.

30.0 The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

31.0 PREFERENCE TO MAKE IN INDIA:

For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier, is as defined I Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

31.1 Compliance to Restrictions under Rule 144 (xi) of GFR 2017

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).

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- II. *"Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.*
- III. *"Bidder from a country which shares a land border with India" for the purpose of this Clause means: -*
- a. *An entity incorporated established or registered in such a country; or*
 - b. *A subsidiary of an entity incorporated established or registered in such a country; or*
 - c. *An entity substantially controlled through entities incorporated, established or registered in such a country; or*
 - d. *An entity whose beneficial owner is situated in such a country; or*
 - e. *An Indian (or other) agent of such an entity; or*
 - f. *A natural person who is a citizen of such a country; or*
 - g. *A consortium or joint venture where any member of the consortium or joint venture falls under any of the above*
- IV. *The beneficial owner for the purpose of (III) above will be as under:*
1. *In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.*
Explanation
 - a. *"Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.*
 - b. *"Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.*
 2. *In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.*
 3. *In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.*
 4. *Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;*
 5. *In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.*
- V. *An Agent is a person employed to do any act for another, or to represent another in dealings with third person.*

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- VI. *The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.*

Note:

- (i) *The bidder shall provide undertaking for their compliance to this Clause, in the Format provided in Annexure-11.*
- (ii) *Registration of the bidder with Competent Authority should be valid at the time of submission as well as acceptance of the bids.*

32.0 Bid should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. All overwriting/cutting, etc., will be numbered by bid opening officials and announced during bid opening.

33.0 In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders.

In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/ draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s).

Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

34.0 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

35.0 Order of Precedence:

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- a. Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC) —Volume-1B
- f. General Conditions of Contract (GCC) —Volume-1C
- g. Forms and Procedures —Volume-1D

It may please be noted that guidelines/ circulars/ amendments/ govt. directives issued from time to time shall also be applicable.

For BHARAT HEAVY ELECTRICALS LTD

(Addl. General Manager - Purchase)

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Enclosure:

01. Annexure-1: Pre Qualifying Requirements.
02. Annexure-2: Check List.
03. ~~Annexure-3: Certificate by Chartered Accountant~~
04. Annexure-4: Reverse Auction Process Compliance Form
05. Annexure-5: Authorization of representative who will participate in the
online Reverse Auction Process
06. Annexure-6: RA Price Confirmation and Breakup
07. Annexure-7: Integrity Pact
08. Annexure-8: Undertaking for insolvency
09. Annexure-9: Declaration reg. Related Firms & their areas of Activities
010. Other Tender documents as per this NIT.
011. Annexure-10: DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH REVISED PUBLIC
PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE, 2020 AND
SUBSEQUENT ORDER(S)
012. Annexure 11: DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144
(xi) OF GFR 2017
013. Annexure 12: Important information.

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ANNEXURE - 1

PRE QUALIFYING CRITERIA

JOB	Structural steel works (i.e. Pre Assembly, Erection, alignment, Bolting and touch-up painting, roofing & Cladding work other allied works) of Ash Handling Plant (AHP) & FGD (LHP & GHP) Steel structure and Associated structure which includes the AHP Compressors houses, pipe racks, belt conveyor structures (BCN), TPs and Scope of work includes supply of all Material (As per TCC and BOQ), Consumables, labour, tools and plants at 3x800 MW PVUNL Project Patratu Site Jharkhand.		
TENDER NO	BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403		
SL NO	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Applicability	
A	Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)	APPLICABLE	
B	<u>Technical PQR</u> Bidder shall essentially meet all the Qualifying Requirements (i.e. B.1 And B.2) as under, in the last seven years as on latest date of bid submission: B.1: Bidder should have Executed “ Piling or Civil or Structure or ‘Civil and Structural Works’ or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these ” for any one of the following in the last seven years from latest date of bid submission: B.1.1) Executed One work of value not less than Rs. 4160 Lakhs against single work order. OR B.1.2) Executed Two works each of value not less than Rs. 2600 Lakhs against maximum two work orders. OR B.1.3) Executed Three works each of value not less than Rs. 2080 Lakhs against maximum three work orders. AND B.2: Bidder should have executed Structure Erection Work of at-least 10858 MT within a common period of twelve consecutive months against one running/ completed contract.	APPLICABLE	

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	<u>FINANCIAL TURNOVER:</u>		
C.1	Bidders must have achieved an average annual financial turnover (audited) of Rs. 15,60,00,000/- (Rupees Fifteen Crores Sixty Lakhs Only) or more over last three Financial Years (FY) i.e. '2017-18, 2018-19 & 2019-20'	APPLICABLE	
C.2	<u>NETWORTH</u> (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive.	APPLICABLE	
C.3	<u>PROFIT</u> Bidder must have earned profit in any one of the three Financial Years as applicable in the last three Financial Years as furnished for 'C-1' above.	APPLICABLE	
C-4	Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking (Annexure-8) to this effect.	APPLICABLE	
D	Assessment of Capacity of Bidder: The "Assessment of Capacity of Bidders" for this Tender shall be carried out by considering the identified similar packages as " Structural Steel Fabrication & Erection ".	NOT APPLICABLE	
E	Approval of Customer (if applicable) Note: Names of bidders (including consortium/Technical Tie-up partners in case consortium bidding is permitted) who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval	APPLICABLE	
F	Price Bid Opening Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E		BY BHEL
G	Consortium tie-ups	NOT APPLICABLE	
<u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u>			
<u>Explanatory Notes for PQR B.1 (Technical)</u>			
<ul style="list-style-type: none"> For the criteria (B.1), actual executed value shall be considered. Value of work is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission as per following formula- 			
$P = R + 0.425 \times R \times \frac{(X_N - X_0)}{X_0} + 0.425 \times R \times \frac{(Y_N - Y_0)}{Y_0}$			
Where			
P = Updated value of work			
R = Value of executed work			
X _N = All India Avg. Consumer Price index for industrial workers for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).			
X ₀ = All India Avg. Consumer Price index for industrial workers for last month of work execution			
Y _N = Monthly Whole Sale Price Index for All Commodities for three months prior to the			

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month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid-submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

Y_0 = Monthly Whole Sale Price Index for All Commodities for last month of work execution

- The evaluation currency for this tender shall be INR.

Explanatory Notes for Technical Criteria (B2):

1. VOID
2. Unless otherwise specified, for the purpose of "B2 Technical Criteria", the word 'EXECUTED' means achievement of milestones as defined below -
 - a. "ACHIEVEMENT OF PHYSICAL QUANTITIES" as per PQRs.
 - b. "READINESS FOR COAL FILLING" of at least one Bunker, in respect of Mill Bunker Structure.
 - c. "CHARGING" in respect of Power Transformers/ Bus Ducts/ "HT/LT Switchgears" / "HT/LT Cabling".
 - d. For C&I works: "SYNCHRONISATION" in case of power project / "WORK EXECUTION of the value as defined in PQR" in case of industry.
 - e. **"BOILER LIGHT UP" in respect of Boiler / CFBC / ESP.**
 - f. "CHARGING OF ATLEAST ONE PASS" in respect of ESP(R&M)
 - g. "GAS IN" in respect of HRSG.
 - h. "STEAM BLOWING" in respect of Power Cycle Piping.
 - i. "HYDRAULIC TEST"/ ANY OTHER EQUIVALENT TEST LIKE "100% RT/UT OF WELDED JOINTS" of the system in respect of Pressure parts/ LP Piping/CW Piping.
 - j. "FULL LOAD OPERATION OF THE UNIT" in respect of Insulation work.
 - k. "SYNCHRONISATION" in respect of STG / GTG.
 - l. "SPINNING" in respect of HTG.
 - m. "GAS IN" in respect of FGD
3. Boiler means HRSG or WHRB or any other types of Steam Generator.
4. Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass.
5. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5 TPH 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 of the same in terms of MW shall be considered for evaluation.

Explanatory Notes for PQR -C (Financial):

C-1:

- i. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above.
- ii. Evaluation of Turnover criteria shall be calculated from the Audited Balance Sheet and Profit & Loss Account for the three Financial Years (FY).
- iii. 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.
- iv. If financial statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by Chartered Accountant.

C-2: Net Worth (Only in case of companies) of the bidder should be positive.

Note: Net worth shall be calculated based on the latest Audited Accounts as furnished for 'C-1' above.

Net worth = Paid up share capital + Reserves

C-3: Bidder must have earned profit in any one of the three financial years as applicable in the last three financial years as furnished for 'C-1' above.

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Note: PROFIT shall be PBT earned during any one year of last three financial years as in 'C-1' above.

C-4: Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.

Common Explanatory Notes:

1. For evaluation of PQR, in case Bidder alone does not meet the pre-qualifying technical criteria B1 above, bidder may utilize the experience of its Parent/ Subsidiary Company along with its own experience, subject to following:
 - a. The parent company shall have a controlling stake of $\geq 50\%$ in the subsidiary company (as per Format-1).
 - b. The Parent Company/ Subsidiary Company of which experience is being utilized for bidding shall submit Security Deposit(SD) equivalent to 1% of the total contract value
 - c. The parent/ subsidiary company and bidder shall provide an undertaking that they are jointly or severally responsible for successful performance of the contract (as per Format-2).
 - d. In case Bidder is submitting bid as a Consortium Partner, option of utilizing experience of parent/subsidiary Company can be availed by Prime Bidder only.
 - e. Parent Company/ Subsidiary Company of which experience is being used for bidding, cannot participate as a 'Standalone Bidder' or as a 'Consortium bidder'.
2. Completion date for achievement of the technical criteria specified in the Common QR should be in the last 7 years ending on the 'latest date of Bid Submission' of Tender irrespective of date of the start of work.
3. "Executed" means the bidder should have achieved the technical criteria specified in the Common QR even if the Contract has not been completed or closed.
4. In case the Experience/PO/WO certificate enclosed by bidders do not have separate break up of prices for the E&C portion for Electrical and C&I works (i.e. the certificates enclosed are for composite order for supply and erection of Electrical and C&I and other works if any), then value of Erection & Commissioning for the Electrical and C&I portion shall be considered as 15% of the price for supply & erection of Electrical and C&I.
5. Following shall be complied with in case of consortium:
 - a. ~~The Prime Bidder and Consortium Partner(s) are required to enter in to a consortium agreement and certify to BHEL regarding existence and validity of their consortium agreement in line with validity period mentioned in NIT.~~
 - b. ~~Prime Bidder and Consortium partners shall be approved by Customer for being considered for the tender (applicable if customer approval is required).~~
 - c. ~~Number of partners including prime Bidder shall be NOT more than 3 (three).~~
 - d. ~~Prime Bidder alone shall necessarily comply with "B1 Technical Criteria" except for mechanical package where B1 criteria is not applicable.~~
 - e. ~~Prime Bidder and Consortium Partner shall together comply with the 'Pre-Qualification Requirements' specified for the respective category of technical requirement as per "B2 technical criteria".~~
 - f. ~~Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified.~~
 - g. ~~All other conditions shall be read in conjunction with clause no 23.0 of NIT.~~
 - h. ~~Prime Bidder shall be the Bidder who has a major share of work.~~
 - i. ~~Prime Bidder shall be responsible for the overall execution of the Contract.~~
 - j. ~~Performance shall be evaluated for Prime Bidder and the Consortium partner for their respective scope of work.~~
 - k. ~~In case the Consortium partner backs out, another consortium partner meeting the QRs, has to be engaged by Prime Bidder and if not, the respective work will be withdrawn and executed on risk and cost basis of the prime bidder.~~
 - l. ~~In case Prime Bidder withdraws or insolvency / liquidation / winding up proceedings~~

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	<p>have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHEL</p> <p>m. After successful execution of one work with a consortium partner under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.</p> <p>n. The Consortium 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.</p>
--	--

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND WORK COMPLETION CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

Credentials submitted by the bidder against "PRE QUALIFYING CRITERIAS" shall be verified for its authenticity. In case, any credential (s) is/are found unauthentic, offer of the bidder is liable to the rejection. BHEL reserves the right to initiate any further action as per extant guidelines for Suspension of Business Dealings.

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Table-1:
Bidder's Response against BHEL TECHNICAL PQR

PQR No	Pre-Qualifying Requirement	Reference of Detailed Work Order, Name of the Work based on which bidder is claiming PQR	Ref of Completion Certificate/proof based on which bidder is claiming PQR	Remarks, if Any
B	<p><u>TECHNICAL PQR:</u></p> <p>Bidder shall essentially meet all the Qualifying Requirements (i.e. B.1 And B.2) as under, in the last seven years as on latest date of bid submission:</p> <p>B.1: Bidder should have Executed “Piling or Civil or Structure or ‘Civil and Structural Works’ or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these” for any one of the following in the last seven years from latest date of bid submission:</p> <p>B.1.1) Executed One work of value not less than Rs. 4160 Lakhs against single work order.</p> <p style="text-align: center;">OR</p> <p>B.1.2) Executed Two works each of value not less than Rs. 2600 Lakhs against maximum two work orders.</p> <p style="text-align: center;">OR</p> <p>B.1.3) Executed Three works each of value not less than Rs. 2080 Lakhs against maximum three work orders.</p> <p style="text-align: center;">AND</p> <p>B.2: Bidder should have executed Structure Erection Work of at-least 10858 MT within a common period of twelve consecutive months against one running/completed contract.</p>			

NOTE:

- BIDDERS MUST CLEARLY INDICATE IN THE TABLE ABOVE, HOW THEY ARE SATISFYING TECHNICAL PQR ALONG WITH THE REFERENCE OF THE SUPPORTING DOCUMENTS.

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Format-1

Certificate for relationship between Parent Company / Subsidiary Company and the bidder

To,

.....
.....

Dear Sir,

Sub: Bid for NIT Nodated..... for "....." (name of the tender).

We hereby certify that M/s..... is Parent Company/ Subsidiary Company of M/s.....(the bidder) and details of equity holding of the Parent Company in Subsidiary Company as on(not earlier than seven days prior to the Bid Submission Date) are given as below:

Name of Parent Company	Name of Subsidiary Company	Percentage of Equity Holding of Parent Company in Subsidiary Company

(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder)

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Format-2

Undertaking from the Parent Company/ Subsidiary Company of the bidder
(On the Letter Head of Parent Company/ Subsidiary Company, as applicable)

From,
Name:
Full Address:

Telephone No.:
E-mail address:
Fax/No.:

To,

Dear Sir,

We refer to the NIT No dated..... for "....." (name of the Tender).

"We have carefully read and examined in detail the NIT/Tender Terms and Conditions, including in particular, Clause of the NIT/Tender, regarding submission of an Undertaking, as per the prescribed Format 1 of the NIT/ Tender.

We confirm that M/s.....(the Bidder) has been authorized by us to use our Technical capability for meeting the Technical Criteria as specified in Clause.....of the PQR of the NIT/Tender referred above.

We agree to submit the Security Deposit equivalent to 1% of the total contract value in addition to Security Deposit to be submitted by Bidder as per Clause.....of the NIT/Tender for fulfillment of all obligations in terms of provisions of the contract, in the event of(the Bidder) being selected as the Successful Bidder.

We confirm that we along with M/s.....(the bidder), are jointly or severally responsible for successful performance of the contract.

We confirm that our company shall not participate in the above tender as a 'Standalone Bidder' or as a 'Consortium bidder' and also shall not authorize any other bidder to use our Technical capability for the above tender.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the referred NIT/Tender.

Signature of Managing Director/Authorized signatory of Parent/ Subsidiary Company

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ANNEXURE - 2

CHECK LIST

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

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

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

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

DATE :

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

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ANNEXURE-3

Certificate by Chartered Accountant on letter head

(applicable upto 31st March 2021 in line with MSME notification no. S.O. 2119 (E), dated 26th June 2020)

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No. (Part II)/ Udyam Registration Certificate No.
..... dtd:, Category: (Micro/Small/Medium)).
(Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. ~~For Manufacturing Enterprises:~~ Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722(E) dated October 5, 2006:
Rs Laacs
2. ~~For Service Enterprises:~~ Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the **MSMED Act, 2006**:
Rs Laacs
3. ~~For Enterprises (having EM-II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum):~~ Investment in plant and machinery or equipment is Rs Laacs and turnover is Rs. Laacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)
4. ~~For Enterprises (having EM-II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum):~~ Investment in plant and machinery or equipment is Rs Laacs and turnover is Rs. Laacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)

{Strike off whichever is not applicable}

~~The above investment of Rs Laacs is within permissible limit of
Rs Laacs for Micro / Small/ Medium (Strike off which is not applicable)
Category under MSMED Act 2006.~~

~~Or~~

~~The enterprise has been graduated upward from its original category (micro/small/medium) (strike off which is not applicable), the enterprise shall maintain its prevailing status till expiry of one year from the close of year of registration, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

~~Or~~

~~The enterprise has been reverse graduated from its original category (micro/small/medium) (strike off which is not applicable), the enterprise will continue in its present category till the closure of the financial year and it will be given the benefit of the changed status only with effect from 1st April of the financial year following the year in which such change took place, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

~~Date:~~

~~(Signature)~~

~~Name:~~

~~Membership Number:~~

~~Seal of the Chartered Accountant~~

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ANNEXURE-4

Reverse Auction Process Compliance Form

**(The bidders are required to print this on their company's letterhead and
sign, stamp before RA)**

To

- M/s. {Service provider
- Postal address}

Sub: Agreement to the Process related Terms and Conditions

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no.{} dt. {.....}

This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per Annexure - VI within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards

Signature with company seal

Name:

Company / Organization:

Designation within Company / Organization:

Address of Company / Organization:

Sign this document and FAX/ email it to M/s {Service provider} at {.....} prior to start of the Event.

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ANNEXURE – 5

Authorization of representative who will participate in the on line Reverse Auction Process:

1	NAME OF THE BIDDER	
2	NAME & DESIGNATION OF OFFICIAL	
3	POSTAL ADDRESS (COMPLETE)	
4	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

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ANNEXURE – 6

Reverse Auction price confirmation and breakup
(To be submitted by L1 bidder after completion of Reverse Auction)

To

- M/s. Service provider
- Postal address

CC: M/s BHEL POWER SECTOR WESTERN REGION, Nagpur

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

Rs. _____ (in value) &
_____ (in words)

for item(s) covered under tender enquiry No. dtd
.....

~~Total price of the items covered under above cited enquiries is inclusive of {Packing & forwarding, GST, E.D., C.S.T., freight and insurance charges up to {.....} District, {.....} State and Type Test Charges etc., (exclusive of service tax), other as per NIT}~~

as our final landed prices as quoted during the Reverse Auction conducted today {date _____} which will be valid for a period of {**in nos. & in words**} days. as mentioned in the subject tender.

Yours sincerely,

For _____

Name:

Company:

Date:

Seal:

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ANNEXURE – 7

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at “BHEL House” Siri Fort, New Delhi – 110049 (India) hereinafter referred to as “The Principal”, which expression unless repugnant to the context of meaning hereof shall include its successors or assigns of the ONE PART

And

_____, (description of the party along with address), hereinafter referred to as “The Bidder/ Contractor” which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

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Section 2 – Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - 2.1.1 the Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 - 2.1.2 The bidder(s)/ Contractors(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
 - 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 - 2.1.4 Foreign Bidders (s)/ Contractor(s) shall disclose the name and address of agents and representative in India and India Bidder(s)/Contractor(s) to disclose their foreign principals or associates. The Bidders (s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and execution from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors" framed by the Principal.

Section 4 – Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

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Section 5 – Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on his subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-Contractors

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.
- 6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section -7 Criminal Charges against violating Bidders/ Contractors/ Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder. Contractor or Sub-contractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section – 8 Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractors(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Sib-contractor(s) with confidentiality in line with Non-disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meeting could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not

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consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organization.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidder 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

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- 10.4 Should one or several provisions of this agreement turn out to be invalid, the reminder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those Bidders/ Contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On Behalf of the Principal

(Office Seal)

For & On Behalf of the Bidder/ Contractor

(Office Seal)

Place -----

Date-----

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____

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ANNEXURE - 8

UNDERTAKING

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: NIT/Tender Specification No: BHE/PW/PUR/NTPRT-STR-AHP-FGD/2403

I/We, _____ declare that, I/We
am/are not under insolvency resolution process or liquidation or Bankruptcy Code Proceedings (IBC)
as on date, by NCLT or any adjudicating authority/authorities, which will render us ineligible for
participation in this tender.

**Sign. of the AUTHORISED SIGNATORY
(With Name, Designation and Company seal)**

Place:

Date:

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Annexure-9

DECLARATION

Date: _____

To _____

BHEL, _____

Email: _____

Sub: Details of related firms and their area of activities

Dear Sir/ Madam,

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable).

1	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
2	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
.....		

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From:
Supplier Code:
Address:

M/s _____

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Annexure-10

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH
JUNE, 2020 AND SUBSEQUENT ORDER(S)**

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent order(s).

Ref : 1) NIT/Tender Specification No:
2) All other pertinent issues till date

We hereby certify that the items/works/services offered by..... *(specify the name of the organization here)* has a local content of _____ % and this meets the local content requirement for '**Class-I local supplier**' / '**Class II local supplier**' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |

...

...

...

Thanking you,
Yours faithfully,

**(Signature, Date & Seal of
Authorized Signatory of the Bidder)**

**** - Strike out whichever is not applicable.**

Note:

1. Bidders to note that above format Duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

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Annexure-11

DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017
(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Ref : 1) NIT/Tender Specification No:
2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I certify that _____ *(specify the name of the organization here)*,

(a) is not from such a country / ☐

(b) has been registered with the Competent Authority *(attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT))*; ☐

and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. *(attach relevant valid registration, if applicable)*

I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,
Yours faithfully,

**(Signature, Date & Seal of
Authorized Signatory of the Bidder)**

Note: Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.

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Annexure-12: IMPORTANT INFORMATION

E -Tender for this work is invited by BHEL PSWR NAGPUR and offer shall be submitted through BHEL e-procurement portal only. All correspondences regarding this tender shall be through E-procurement portal.

Postal Address:

AGM /Purchase BHEL PSWR,
SRIMOHINI COMPLEX, Floor No. 5 & 6, 345 KINGSWAY, NAGPUR 440001, INDIA

Following are the concerned BHEL officials to whom bidders can contact in case of any difficulty:

AGM Purchase, Email: prchiwarkar@bhel.in. Ph: +91 – 712 – 2858 – 633

Dy Manager Purchase, Email: shubh@bhel.in Ph: +91-712 – 2858 –742

Manager Purchase, Email: nktiwari@bhel.in Ph: +91 – 712 – 2858 –651

1. **Refer Chapter XII of Volume IB Special Conditions of Contract regarding Suspension of Business Dealings:** The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' has now been uploaded on www.bhel.com on "supplier registration page" at the following link: http://www.bhel.com/vender_registration/pdf/Suspension_guidelines_abridged.pdf
2. **All Statutory Requirements as applicable for this project shall be complied with.**
3. **Following clause shall form part of the HSE documents issued under Chapter IX of Volume IB 'Special Conditions of Contract'**

"In case of any financial deduction made by Customer for lapses of safety other than what is provided elsewhere in the contract, the same shall be charged on back-to-back basis on the defaulting contractor without prejudice to any other right spelt anywhere in the tender /contract"
4. **"Pradhan Mantri Kaushal Vikas Yojna:** The contractor shall, at all stages of work deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute/Industrial Training Institute/ National Institute of Construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/ Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs.100 per such tradesman per day. Decision of Engineer-in-Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding".

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5. **The clause 2.7.9.1 below is added under the heading “Rights of BHEL” of General Conditions of Contract Volume-IC GCC.**

2.7.9.1 Provision of Penalty in case of slippage of Intermediate Milestones:

- i) Two major Intermediate Milestones are mentioned as M1 & M2 in Chapter VI: Time Schedule of Vol IA Technical Conditions of Contract.
- ii) In case of slippage of these identified Intermediate Milestones, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to Form 14.
- iii) In case delay in achieving M1 Milestone is solely attributable to the contractor, 0.5% per week of Executable Contract Value*, limited to maximum 2% of Executable Contract Value, will be withheld.
- iv) In case delay in achieving M2 Milestone is solely attributable to the contractor, 0.5% per week of Executable Contract Value*, limited to maximum 3% of Executable Contract Value, will be withheld.
- v) Amount already withheld, if any against slippage of M1 milestone, shall be released only if there is no delay attributable to contractor in achievement of M2 Milestone.
- vi) Amount required to be withheld on account of slippage of identified intermediate milestone(s) shall be withheld out of respective milestone payment and balance amount (if any) shall be withheld @10% of RA Bill amount from subsequent RA bills.
- vii) Final deduction towards LD (if applicable as per clause 2.7.9 above), on account of delay attributable to contractor shall be based on final delay analysis on completion / closure of contract. Withheld amount, if any due to slippage of identified intermediate milestone(s) shall be adjusted against LD or released as the case may be.
- viii) In case of termination of contract due to any reason attributable to contractor before completion of work, the amount already withheld against slippage of intermediate milestones shall not be released and be converted into recovery.

* **Executable Contract Value** - Value of work for which inputs/ fronts were made available to contractor and were scheduled for execution till the date of achievement of that milestone.

6. **The following paragraph has been added in clause 2.7.1 under clause 2.7 “Rights of BHEL” of General Conditions of Contract (Volume-IC GCC):**

In case of inadequate manpower deployed by contractor, BHEL reserves the right to deploy additional manpower through any other agency for expediting activities in the interest of the project. Supplied manpower shall be put on job by the contractor and payments and other statutory compliances related to manpower shall be the contractor's responsibly. In case of contractor's failure to fulfil his obligations in respect of such manpower, BHEL reserves the right to take necessary action as per contract conditions.

7. **Clause 2.13.9 of General Conditions of Contract (Volume-IC GCC) is amended as below:**

‘2.13.9: Contractor to submit Bank Guarantee as per prescribed formats for each of the advance and shall

be valid for at least one year or the recovery duration whichever is

earlier. In case the recovery of dues does not get completed within the aforesaid BG period, the

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contractor shall renew the BG or submit fresh BG for the outstanding amount, valid for at least one year or the remaining recovery duration whichever is earlier.

- 8. Delay in 1st submission of SDBG/ PBBG:** SDBG/ PBG is to be furnished by the vendor before start of work. No payment will be released till SDBG/PBG is submitted by the vendor. However if requested by the vendor, cash recovery equivalent to SDBG/ PBG value to be made from the running bills submitted by the vendor. In such case, recovery of interest calculated @SBI PLR +2% on amount equivalent to SDBG/ PBG value to be made for the gap period (difference between date of start of work and date of submission of BG/ cash recovery).

- 9. Compensation in case of Death/ Permanent Incapacitation of Person:** BHEL shall recover the amount of compensation paid to victim (s) by BHEL towards loss of life/ permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employee as detailed below:

- a) Victim: Any person who suffers permanent disablement or dies in an accident as defined below.
- b) Accident: Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works/ during working at BHEL Units/ Offices/ townships and premises/ Project sites.
- c) Compensation in respect of each of the victims:
 - (ii) In the event of death or **permanent disability** resulting from **Loss of both limbs**: Rs 10,00,000/- (**Rs Ten Lakh**)
 - (iii) In the event of **other permanent disability**: Rs 7,00,000/- (**Rs Seven Lakh**)
- d) Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2(I) of the Employee's Compensation Act, 1923.

10. Acceptance of Bank Guarantee (BG)

Revision in Acceptance of Bank Guarantee (BG) Clause no. 1.10.3 (iii) of Vol I C GCC:

Clause No. 1.10.3 (iii) of Vol IC GCC is revised as below: -

"Bank Guarantee issued by:

- a. Any of the BHEL consortium bank listed below:
 - State Bank of India
 - ABN Amro Bank N.V.
 - Bank of Baroda
 - Canara Bank
 - Citi Bank N.A.
 - Corporation Bank
 - Deutsche Bank
 - HDFC Bank Ltd.
 - The Hongkong and Shanghai Banking Corporation Ltd

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ICICI Bank Ltd.
IDBI Ltd.
Punjab National Bank
Standard Chartered Bank
State Bank of Travancore
State Bank of Hyderabad
Syndicate Bank

- b. Any public sector Bank (other than consortium banks) with a clause in the text of Bank Guarantee that **"It is enforceable at Nagpur, Maharashtra"**.
- c. Any private sector banks, with a clause in the text of Bank Guarantee that **"It is enforceable by being presented at any branch of the bank"**.

Note: **"Bank Guarantees issued by Co-operative Banks are not acceptable"**.

11. Broad Terms & Conditions of Reverse Auction:

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

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) (<https://www.bhel.com/guidelines-reverse-auction-2021>) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

Note:-

- 1. No benefits to MSE bidders w.r.t Reverse Auction Guidelines as available on www.bhel.com against works contract.
- 2. In case of enquiry through e-procurement the sealed electronic price bid (e-bid) is to be treated as sealed envelope price bid.

- 12. Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC.**

- 13. "Performance Guarantee for Workmanship":** Clause no 2.24 of General Conditions of contract is amended as below:

2.24 PERFORMANCE GUARANTEE FOR WORKMANSHIP

2.24.1 Even though the work will be carried out under the supervision of BHEL Engineers the Contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of **18 months commencing from the date of Completion of contract as certified by BHEL Engineer**, for good workmanship and shall rectify free of cost all defects due to faulty erection detected during the guarantee period. In the event of the Contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the Contractor's risk and cost, without prejudice to any other rights and recover the same from the Guarantee money.

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2.24.2 Release of guarantee money: As per CI no. 2.24.2 of General Conditions of contract

14. "Amended Quantity Variation Sub Clause no. 2.14.1 of Clause no. 2.14 of Vol-IC GCC:

"The quantities given in the contract are tentative and may change to any extent (both in plus side and minus side). The quoted rates for individual items shall remain firm irrespective of any variations in the individual quantities. No compensation becomes payable in case the variation of the final executed contract value is within the limit of Minus (-) 30% of awarded contract value."

Note: Sub clause no. 2.14.2 of Clause no. 2.14 shall be applicable as per Vol-IC-GCC. "

15. Health Safety and Environment Plan at PVUNL Patratu Site : In the clause no. 9.1 of VOL I B 'SCC', "Document No HSEP:14:Rev 00" is to be read as "Doc no. WRHPP:PVUNL REV 00 dtd 01/05/2018". Bidders to take note of this revised HSE Plan for the subject tender which is provided along with VOL I BCD.

16. CI 1.2.1 of '1.2 Submission of Tenders' of Chapter -1 of VOL IC- GCC (General Conditions of Contract) is amendment as below:

Existing	Amended/To be read as
1.2.1) The tenderers must submit their tenders to Officer inviting tender (Or upload on E portal website https://bhel.abcpocure.com in case of E tender) as per instructions in the NIT.	1.2.1) The tenderers must submit their tenders to Officer inviting tender (Or upload on E portal website https://eprocurebhel.co.in in case of E tender) as per instructions in the NIT.

NOTE / New:

E procurement portal for E tendering is: E portal website - <https://eprocurebhel.co.in>

All relevant clauses shall be read accordingly.

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: Project Information

1. Project Information

Project Name: 3x800 MW Patratu Vidut Utpadan Nigam Ltd. (PVUNL) Patratu STPP The proposed site is located near Patratu town in Ramgarh district of Jharkhand.

The latitudes and longitudes of the site are as follows:

1	Project Name	3x800 MW Patratu Vidut Utpadan Nigam Ltd. (PVUNL) Patratu STPP	
2	Plant Site Location	Near Patratu town in Ramgarh district of Jharkhand	
3	Location Co-ordinate	Main Plant & Township:	
3.1	Corner name	Latitude	Longitude
3.2	Top Corner	23° 39 ' 00" N	85° 17' 51.5" E
3.3	Bottom Corner	23° 38 ' 12.5" N	85° 17' 27" E
3.4	Left Corner	23° 38 ' 22.5" N	85° 17' 10.6" E
3.5	Right Corner	23° 38 ' 40" N	85° 17' 57" E
4	Nearest Town/City	Patratu -03Kms Ramgarh- 30Kms Ranchi - 37Kms	
5	Nearest Railway Station	Patrat-4Kms	
6	Nearest Airport	Ranchi-45Kms	
7	Nearest Seaport	Kolkata-424Kms	
8	Nearest Road Access	Ranchi Patratu Ramgarh Rd	
9	Site Elevation	377M above MSL	
10	Ambient Temperature	-	
10.1	Mean of Daily Maximum Temperature	40°C (During May)	
10.2	Mean of Daily Minimum Temperature	10.7°C (During December)	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: Project Information

10.3	Wet Bulb Temperature	27°C (Maximum)
11	Annual Rainfall	311 mm average annually
12	Wind Speed	0 to 39 Km/Hr
13	Wind Direction	East North East to West South West
14	Seismic Zone	Zone III as per IS:1893

The vicinity map of the project is shown below



The Bidder shall visit site and get acquainted himself with the conditions prevailing at site before submission of the bid. The information's given here in under are for general guidance and shall not be contractually binding on BHEL/ Owner. All relevant site data's/information's as may be necessary shall have to be obtained/ collected by the Bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works

2.1 The scope of work shall comprise but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

Structural steel works (i.e. Pre Assembly, Erection, alignment, Bolting and touch-up painting, roofing & Cladding work other allied works) of Ash Handling Plant (AHP) & FGD (LHP& GHP) Steel structure and Associated structure which includes the AHP Compressors houses, pipe racks, belt conveyor structures (BCN),TPs and Scope of work includes supply of all Material (As per TCC and BOQ), Consumables, labour, tools and plants at 3x800 MW PVUNL Project patratu Site Jharkhand.

2.1.1 Ash Handling Plant (AHP) structures /buildings

- AHP Compressor house -1 & AHP Compressor House -2
- FA Silos -06 Nos
- BA silos -(06 Nos)
- FA intermediate Silos (16.60 m x25.25 m Approx).
- BA TP-1
- BA TP-2
- BA TP-3
- BA TP-4
- BA TP-5
- ANX. TP-1
- ANX. TP-2
- ANX. TP-3
- ANX. TP-4
- ANX. TP-5
- ANX. TP-6
- ANX. TP-7
- ANX. TP-8
- ANX. TP-9
- BCN-1 A/B
- BCN-2 A/B
- BCN-3 A/B (790.55m)
- BCN-4 A/B (330.00m)
- BCN-5 A/B (424.00m)
- BCN-6 A/B (704.00m)
- BCN-7 A/B (135.62m)
- Annexure # BCN 1 A/B
- CABLE BRIDGE-1
- Buffer Hopper
- FGD structures
- LHP Structures
- GHP Structures
- Pipe racks

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works

- LIME STONE HOPPER
- LIMESTONE SHED
- LIME STONE CRUSHER HOUSE
- LS TP-1
- LS TP-2
- LS TP-3
- LS CONV.1A/B
- LS CONV.2A/B
- LS CONV.3A/B
- LS CONV.4A/B
- LS CONV.5A/B
- LS OPEN CONV
- GYPSUM STOCK PILE SHED
- GYPSUM TP-1
- GYPSUM CONV.1A/B
- GYPSUM CONV.2A/B

Note (a): Structural steel/pre-fabricated structure as per TCC and BOQ for structural works shall be provided by BHEL free of cost.

- 2.1.1 The works to be performed under this contract consist of providing all labour, supervision, material, scaffolding, construction equipment, tools and plants, temporary works, supplies including POL, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials etc. are included on the rates of items of work. Works shall be carried out only with approved structural erection drawings.
- 2.1.2 All the work areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts.
- 2.1.3 The unit rates shall include all material equipment, fixtures, labour construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.
- 2.1.4 The unit rates for various items of B.O.Q shall include all the stipulations mentioned in technical specifications and nothing extra over B.O.Q rates shall be payable.
- 2.1.5 The bidder should fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, local conditions, soil strata and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may have not been specifically brought out in the specifications.

2.2 The work to be carried out at quoted / accepted rates by the Contractor under the scope of these specifications covers the complete work of handling, loading and transporting of materials from project stores sheds / storage yards to site of erection or preassembly yard and unloading at pre-assembly area/erection site, checking, cleaning chipping and levelling of foundations, providing

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works

packers and shims/pre-assembling of equipments at the preassembly yard, inspection, minor rectification, preservation, erection, levelling, and other adjustments, cutting, edge / surface preparation, welding, grinding, wherever needed, application of touch up Painting (as and where required).

- 2.3 The quantities indicated in the tender specification are approximate and are liable for variation at the discretion of BHEL.
- 2.4 Supervisors / Engineers, consumables etc., required for the scope of work shall be provided by the contractor. All the expenditure including taxes and incidentals in this connection will have to be borne by him unless otherwise specified in the relevant clause. The contractor's quoted rates should be inclusive of all such contingencies.
- 2.5 It shall be specially noted that the contractor's labour and staff may have to work round the clock to meet the completion schedules / plans, which may involve payment of considerable overtime. The contractor's quoted rates should be inclusive of all such contingencies.
- 2.6 The work shall conform to dimensions and tolerances given in various drawings and quality manuals provided by BHEL. If any portion of work is found to be defective in workmanship not conforming to drawings or other stipulations, the contractor shall dismantle and redo the work duly replacing the defective materials at his cost, failing which the job will be carried out by BHEL by engaging other agencies / departmentally and recoveries will be effected from contractor's bill towards expenditure incurred including BHEL's overhead charges.
- 2.7 The work covered under this specification is of highly sophisticated nature requiring the best quality of workmanship, engineering and construction management. The contractor should ensure timely completion of the work. The contractor must have the adequate quantity of tools, construction aids, equipments, etc., in his possession. He must also on his rolls adequate trained, qualified and experienced supervisory staff and skilled personnel.
- 2.8 Contractor has to work in close co-ordination with other erection agency at site. BHEL engineer will co-ordinate area clearance. In a project of such magnitude, it is possible that the area clearance may be less/more at a particular given time. Activities and erection program have to be planned in such a way that the milestone events are achieved as per schedule/plans. Contractor shall arrange & augment the resources accordingly.
- 2.9 No member of the already erected structure/ platform, pipes, grills, platform, other component should be cut without specific approval of BHEL engineer.
- 2.10 BHEL will try to supply shop fabricated structure at erection at site, in the case of space constraint material will be stored in open storage yard which is located within the plant boundary and nearby (Approx upto 3-4 KM) of the plant premises in 2-3 locations. ODC consignments will be unloaded near to erection site as per the space availability. Transportation of material from storage yard to erection site shall be done by contractor at his own cost.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Works

- 2.11 Painting: The scope of work shall also include touch-up painting (As defined in Chapter-XVI: Painting) including supply of paint material (as and where required) for all the components under the scope of work as per specification. Joint measurement sheet for touch up paint shall be endorsed by PVUNL and BHEL before start of work. If finish coat of paint damaged during material handling, erection or due to temporary support welding in main structures, repair/repainting will be in the scope agency without any additional cost.
- 2.12 Erection, alignment, welding, bolting, and touch-up painting as applicable for structures (supplied from BHEL units) of AHP, FGD (LHP & GHP) structures, Supply and installation of items as per BOQ for AHP structural works in etc.
- 2.13 Where ever the Supply & Erection together is covered in the scope of bidder necessary approvals from BHEL / PVUNL shall be taken by bidder for the design, inspection procedure & vendor. List of items for which such approvals required will be frozen during execution of the contract.

NOTE: 1. Contractor shall procure and supply the items to PVUNL project Patratu site as per the BOQ for structural works from BHEL / PVUNL approved vendors, meeting the specification, Drawings and instructions of the Engineer.

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

Sl. No	Description PART I	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, if provided it will be free of cost)	Yes		Location will be finalized after joint survey with owner
b	Open space for storage (as per availability, if provided it will be free of cost)	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 equipment's 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	Agency has to make his own arrangement at his own cost.
B	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2	ELECTRICITY			
3.2.1	Electricity For construction purposes only of Voltage 415/440 V, 3 phase, 50Hz (Chargeable Basis)	Yes		At Single point, Bidder to make it own arrangement of distribution of electricity at its own cost.

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

Sl. No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
A	Single point source	Yes		At a distance of 500 M from site (Distance is only tentative, 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			Agency has to make his own arrangement at his own cost.
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	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc		Yes	Agency has to make his own arrangement at his own cost.
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	
3.3	WATER SUPPLY			
3.3.1	For construction purposes: (single point source provided by BHEL)			
a	Making the water available from single point	Yes		Chargeable basis
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	Agency has to make his own arrangement at his own cost.
3.3.2	Water supply for bidder's office, stores, canteen etc.			

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

Sl. No	Description PART I	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	
3.3.3	<u>Water supply for Living Purpose</u>			
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	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	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
a	Telephone, fax, internet, intranet, e-mail etc.		Yes	
3.6	COMPRESSED AIR wherever required for the work		YES	
a	Supply of Compressor and all other equipments required for compressor & compressed air system including pipes, valves, storage systems etc		Yes	

BHEL-PSWR

Technical Conditions of Contract –Volume I A (Part I: Contract Specific Details)

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

Sl. No	Description PART I	Scope / to be taken care by		Remarks
		BHEL	Bidder	
b	Installation of above system and operation & maintenance of the same		Yes	
c	Supply of the all the consumables for the above system during the contract period		Yes	
3.7	Demobilization of all the above facilities		Yes	
3.8	TRANSPORTATION			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl. No	Description PART II 3.9 ERECTION FACILITIES	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9.1	Engineering works for construction:	Yes		
a	Providing the erection drawings for all the equipments covered under this scope	Yes		
b	Drawings for construction methods	Yes	Yes	In consultation with BHEL
c	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes		Yes	In consultation with BHEL
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

BHEL-PSWR

Technical Conditions of Contract –Volume I A (Part I: Contract Specific Details)

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

Sl. No	Description PART II 3.9 ERECTION FACILITIES	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	Not Applicable
L	Arranging the materials required for preassembly		Yes	

3.10 Construction Power (Chargeable):

- 3.10.1 The construction power (415V) will be provided at a single point for construction purpose only on chargeable basis at the applicable rate of PVUNL prevailing during the execution period. Further distribution is to be arranged by the bidder at his cost. Construction power shall be provided from the nearest Substation / tapping point.
- 3.10.2 Any duty, deposit involved in getting the Electricity shall be borne by the bidder. As regards to contractor's office shed also, all such expenditure shall be borne by the contractor.
- 3.10.3 Provision of distribution of electrical power from the given single central common point to the required places with proper distribution boards, approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements shall be the responsibility of the tenderer / contractor.
- 3.10.4 BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage / frequency or interruptions in power supply.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

- 3.10.5 Necessary “Capacitor Banks” to improve the Power factor to a minimum of 0.8 shall be provided by the contractor at his cost. Penalty if any levied by customer on this account will be recovered from contractor’s bills.
- 3.10.6 The PVUNL tariff and tax may vary from time to time. The required Energy meter for measuring the power consumption shall be provided and installed by the contractor. Any dispute regarding consumption, the BHEL engineer’s decision shall be final & binding to the contractor. The contractor shall make his own arrangement for further distribution with necessary isolator/LCB etc.
- 3.10.7 Contractor has to make his own arrangements for his electricity requirement for his labour colony at his cost.
- 3.10.8 As there are bound to be interruptions in regular power supply, power cut/load shedding in any construction sites, contractor should make his own arrangement for alternative source of power supply through deployment of adequate number of DG sets at their cost during the power breakdown /failure to get urgent and important work to go on without interruptions. No separate payment shall be made for this contingency.

3.11 Construction Water (Chargeable)

- 3.11.1 Water (Raw water) required for construction purposes will be provided at one single point within the plant area on chargeable basis. The required water meter for measuring the consumption shall be provided and installed by the contractor. The required pumps & accessories, pipes for drawing water from the points and further distribution will be arranged by the contractor at their cost.
- 3.11.2 The water charges may vary from time to time as per PVUNL water conditions, Any dispute regarding consumption, the BHEL engineer decision will be final. In case of non-availability of water, the contractor shall make his own arrangements of water suitable for construction to have uninterrupted work. No separate payment shall be made for any contingency arrangement made by contractor, due to delay / failure for providing water supply. Contractor has to make his own arrangements for his water requirement for his labour colony at his cost.

3.12 DRINKING WATER

Bidder shall provide drinking water at the work spot at their cost.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

3.13 CONSUMABLES:

- 3.13.1 All consumables, like gas, electrodes, chemicals, lubricants etc. required for the scope of work, shall be arranged by the contractor at his cost unless otherwise specifically mentioned in the contract.
- 3.13.2 In the event of failure of contractor to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost towards this along with overhead shall be paid by the contractor or deducted from the contractor's bills.

3.14 LIGHTING FACILITY:

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

3.15 GASES:

- 3.15.1 All the required gases like Oxygen / Acetylene / argon required for work shall be supplied by the Contractor at his cost. It shall be the responsibility of the contractor to plan the activities and store sufficient quantity of these gases. Non availability of gases cannot be considered as reason for not attaining the required progress. BHEL reserves the right to reject the use of any gas in case required purity is not maintained.
- 3.15.2 The contractor shall submit weekly / fortnightly / monthly statement report regarding consumption of all consumables for cost analysis purposes.
- 3.15.3 The contractor shall ensure safe keeping of the inflammable cylinder at a separate place away from normal habit with proper security etc.
- 3.15.4 BHEL reserves the right to reject the use of any gas in case required purity is not maintained.

3.16 ELECTRODES SUPPLY AND STORAGE

- 3.16.1 The bidder shall use the BHEL / Customer approved quality welding electrodes only.
- 3.16.2 It shall be the responsibility of the contractor to obtain prior approval of BHEL, before procurement, regarding suppliers, type of electrodes etc. On receipt of the electrodes at

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

site, it shall be subject to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch number and date of expiry etc.

- 3.16.3 Shortage of any of the electrodes or the equivalent suggested by BHEL shall not be quoted as reason for deficiency in progress or for additional rate.
- 3.16.4 All low hydrogen electrodes shall be baked / dried in the electrode drying oven (range 375 deg. C – 425 deg. C) to the temperature and period specified by the BHEL Engineer before they are used in erection work and each welder should be provided with one portable electrode drying oven at the work spot. Electrode drying oven and portable drying ovens shall be provided by contractor at his cost.
- 3.16.5 In case of improper arrangement of procurement of above electrodes BHEL reserves the right to procure the same from any source and recover the cost from the contractor's first subsequent bills at market value plus departmental charges of BHEL communicated from time to time. Postponement of such recovery is not permitted.
- 3.16.6 BHEL reserves the right to reject the use of any electrodes at any stage, if found defective because of bad quality, improper storage, date expiry, unapproved type of electrodes etc. It shall be the responsibility of the contractor to replace at his cost without loss of time.

3.17 ONLINE SITE CONSTRUCTION MANAGEMENT SYSTEM (SCMS):

- 3.17.1 The bidder will have to supply and install 01 Nos. of PCs with Operators, 01 no multifunction higher capacity printer (printer should be have A3 size printing facility) and accessories along with one operator per PC with power backup, for the online material management system, reporting of daily progress, billing and other similar activities pertaining to contractor's scope of work. PCs & printers are to be installed at places as per instruction of BHEL Engineer.
- 3.17.2 Computers shall have minimum configuration multimedia PC work station Core i3/i5 or above, 1 GHZ or above, 320 GB HDD or above, 4 GB RAM or above, 100 MBPS LAN card of DELL/HP/ASUS or equivalent make with window 10 O/S with required accessories like mouse, keyboard, UPS and required software like MS Office 2010 Professional, AutoCAD 2011 or higher, ADOBE PDF CREATOR (version 8.0 or higher) with one laser jet printer compatible for A4 and A3 size printing (ink/ cartridge for which to be supplied as and when required, (the consumption may be assumed as 1 cartridge per month).

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

- 3.17.3 These computers/ printers & accessories shall remain contractor's property/ ownership for all legal/technical purposes. However, contractor will be allowed to take out the same after completion of the site works as per instruction of BHEL Engineer.
- 3.17.4 If Contractor fails to mobilize above computer infrastructure BHEL reserve the right to recover from Bidder at the rate of Rs 15000 per Month.
- 3.17.5 In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to the bidder, the bidder will be reimbursed at Rs 10000.00 per month for one computers with printer facility, if the services of computer and printer are being used by BHEL.

3.18 OTHER FACILITIES

- 3.18.1 Adequate water less urinals shall be arranged by the contractor within quoted rates, at site of construction at different areas, with proper disposal arrangement.
- 3.18.2 Vendors have to comply requirements of HSE & Statutory requirement in line with BHEL HSE plan, NTPC Safety requirement, Jharkhand/Central statutory requirement.
- 3.18.3 Agencies are to get registered (to take membership) from Safety Council of India, Mumbai/National Safety Council.
- 3.18.4 Vendors have to arrange labour rest sheds, drinking water facility, toilets, canteen facility as per local labour act/BOCW act. Maintaining hygiene and disposal of debris, scraps, canteen items and area cleaning is included in vendor's scope.
- 3.18.5 Agency has to arrange trained scaffolding experts with accreditation from statutory agencies with proper experience and they will issue fitness certificates for safe use. Such kind of qualified scaffolding experts will vary as per job requirement. At the same time, training has to be given by these experts at regular intervals for their own workers for increasing no. of experts.
- 3.18.6 Agencies HSE officers should have sufficient experience as per rule 209 of Bocw act central rule 1998. Agencies HSE officers will be part of BHEL HSE Team and they will be responsible for giving training on HSE issues in addition to normal field works and other normal site requirements.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL

(Scope Matrix)

- 3.18.7 Preparation of method statement, HIRA, Job Safety analysis, permit to work, Lifting plans, and all supporting documents as required for starting & continuation of work/job is in vendor's scope.
- 3.18.8 **Hydras are not allowed for materials transport, only pick and carry cranes shall be deployed by the agency.**
- 3.18.9 First aid centre will be maintained by BHEL and cost will be proportionately recovered from vendors.
- 3.18.10 Vendor has to arrange land within his quoted rate for making labour colony. Vendors labour colony has to be maintained with proper hygiene, drinking water, bathroom water, lighting arrangement, sewerage system. These facilities are to be regularly maintained including drains, surrounding, upkeepment of labour colony. BHEL/NTPC & local statutory authorities will visit labour colony from time to time and all healthy conditions are to be maintained by vendor.
- 3.18.11 Scaffolding pipes, clamps, safety nets, floor grills for working platforms are to be made of good quality with proper certifications as per IS Codes.

3.19 DEWATERING:

Contractor shall ensure at all times that the work area & approach/ access roads are free from accumulation of water, so that the materials are safe and the erection/ progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL.

3.20 SITE ORGANISATION

- 3.20.1 The contractor shall provide adequate staffing in the following areas in addition to the staffing requirements of execution as instructed/informed by BHEL:
- i. Overall planning, monitoring & control.
 - ii. Quality control and quality assurance.
 - iii. Materials management.
 - iv. Safety, fire & security.
 - v. Industrial relations and fulfilment of labour laws and other statutory obligations.

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

- 3.20.2 The contractor shall maintain a site organization of adequate strength in respect of manpower, construction machinery and other implements at all times for smooth execution of the contract. This organization shall be reinforced from time to time, as required to make up for slippage from the schedule without any commercial implication to BHEL. The site organization shall be headed by a competent construction manager having sufficient authority to take decisions at site.
- 3.20.3 The contractor should also submit to BHEL for approval a list of construction equipment, erection tools, tackle etc prior to commencement of site activities. These tools & tackles shall not be removed from site without written permission of BHEL.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

4.1 The following minimum broad Tools & Plants (T&P) shall be arranged by the Contractor for execution of items mentioned in BOQ chapter-XVII for of Technical Conditions of Contract of this tender within the quoted rate.

Major T&Ps				
SN	DESCRIPTION	CAPACITY (MINIMUM)	QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
1	Crawler Crane	150 MT	01 Nos.	Crane to be made available at site in consultation with BHEL Site management, BHEL decision is final and agency has to deploy the crane as per BHEL instructions till Site requirement.
2	Crawler Crane	75/80 MT	01 Nos.	Crane to be made available at site from the start of structure erection work till site requirement.

SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
1.	Tyre mounted mobile crane/pick & carry crane	18/20 MT	02Nos.	Deployment As per Site requirement in consultation with BHEL
2.	Tyre mounted mobile crane/Pick & carry crane	14/16 MT	02 Nos.	Deployment As per Site requirement in consultation with BHEL
3.	Trailer 40 to 60 feet	25-30 MT	02 No	Deployment As per Site requirement in consultation with BHEL. If additional Trailer required agency has to mobilise the same without any additional cost.
4.	Calibrated Power driven HSFG bolt tightening machines		12 Nos	As per Site requirements,
5.	Torque tightening machine		08 Nos	As per Site requirements,

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
6.	Sufficient quantity of steel ladders for approach up to the top of each erected column to be required during erection of columns.			As per work requirement at site
7.	Man lift crane of Minimum 40 mtr reach	As per requirement	As per requirement	As per requirement
8.	Tig welding set	As required	As required	As per requirement.
9.	Oxy Acetelyne Gas cutting Machine		Adequate nos.	
10.	DC arc welding machine		As required.	
11.	3-phase distribution board with complete set up for drawl of construction power	As required	As required	
12.	Power cable for drawl of construction power	As required	As required	
13.	Theodolite of required accuracy	To ensure verticality of structural columns.	02 Nos.	Required Since Erection start.
14.	Self-drilling cum tapping machine for screws of AHP roof & Cladding sheets	As required	12 nos. (As required)	
15.	Welding rectifiers (electrical)		As required	Since erection start
16.	Chain pulley blocks of various & Suitable capacities		As Required (as per the instructions of BHEL Engineer)	Since erection start

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SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
17.	Baking oven with thermostat and temperature gauge for welding electrodes	As required	(As per Required)	Since erection start
18.	Holding oven with thermostat and temperature gauge for welding electrodes	As required	(As per Required)	Since erection start
19.	Portable oven for welding electrodes	As required	(As per Requirement)	Since erection start
20.	Electric winch	3 MT ton capacity	As per requirement	
21.	Electric winch	5 MT ton capacity	As per requirement	
22.	Hand winch	0.5 ton capacity	As per requirement	
23.	Scaffolding materials with clamps.	Suitable for working at various heights	As required	For Alignment, welding & Insulation works
24.	Profile making m/c	For aluminium sheet cladding work	as required	
25.	Portable grinding m/c	As required	as required	Since structure erection start
26.	Portable drilling m/c	As required	as required	Since structure erection start
27.	Hoisting and pulley devices/pulleys	Assorted capacities	As required	Since erection start
28.	Fire retardant tarpaulins	As required	As required	Since erection start

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SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
29.	Fire extinguisher	As required	as required	
30.	Hydraulic Jacks	10/20/50/100 MT	as required	
31.	Dewatering pumps(Electrical & Diesel engine operated)		as required	
32.	Various sizes of clamps/ fixtures for assembling		as required	
33.	Magnetic particle testing equipment- DRY & WET Type		as required	
34.	Elcometer for paint thickness checking		as required	
35.	Hand Operated Megger 500 / 1000 V		as required	
36.	Tong Tester 10, 20 Or 50 Amp + / - 3 % Accuracy		as required	
37.	Digital and Analogue Multimetres		as required	
38.	Special Slings for Erection of Ceiling Beams & other heavy components		as required	Since AHP erection start
39.	Pug Cutting machines		As required	
40.	Portable drill machines		As Required	
41.	Air compressor/ Ar blower		01 Nos	
42.	Concrete Blocks		As required	For making bed of steel structure for checking dimensional accuracy, configuration and minor rectification.

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SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
43.	Wooden/concrete sleeper 1.5 Mtr length	Since beginning	As required	For material storage at site.
44.	Painting equipment sets complete with compressor, hopper, screen, blasting hose pipe, nozzle airless / conventional spray (within CGI temporary cover shed)			As per site requirements, (As described in chapter –XVI
45.	List of suggestive safety Equipments/PPEs to be included in List of minimum T&P:			
46.	Safety Net (Conforming IS 11057:1984) Safety Net (Net Size: 10m x 5m, Mesh Size: 25 mm, Mesh Rope: 2mm double cord, Border/Tie Cord: 12mm diameter polypropylene rope (tested as per IS: 5175).Two metres length shall be provided at all four corners.		As per Site requirement	Required Safety nets shall be deployed as per site requirement .
47.	Fall Arrester 'Rope grab fall arrester' & anchorage line. Anchorage Line: 14mm- 16 mm diameter, three strand twisted Polyamide rope. Rope Grab fall arrester: Openable & Guided type Fall Arrestor (on flexible line) conforming EN 353-2 & works on 14-16 mm diameter polyamide rope. Material: Nickel Chrome plated Steel Connector: Karabiner conforming to EN 362 (Minimum		Rope Grab Fall arrester' and Karbiner each. anchorage line, 30 metre long each, anchorage line, 40 metre long each	As Per Site requirement As per site requirement As per site requirement

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SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
	Strength 22 KN), material: Steel			
48	Horizontal life line Stainless Steel Wire rope of 8mm diameter. Minimum six nos. of steel U-bolt clips are required for clamping each wire rope to a rigid support (03 nos. of U-bolt clips at each end).		Min 40 nos. of wire rope, each 40 metre long Min 90 nos. of wire rope, each 25 metre long.	Min 40 nos. of wire rope, each 40 metre long Min 90 nos. of wire rope, each 25 metre long.
49	Ladders on column The minimum design live load on metallic ladder shall be a single concentrated load of 100 kilo grams. All rungs shall have a minimum diameter of 1.90 centimeters, and minimum clear length of rungs shall be 40.6 centimeters. The distance between rungs shall not exceed 30.5 centimeters. Each ladder shall have maximum height of 9.0 metre. The ladder shall have proper fastenings for attaching it to a column using positive means such as bolt, weld or other type of fasteners.		As per requirement	Cumulative length of ladders is 1200 metres
50	Suspended working platform Size :7mX1mX0.5m, Rated load 800 kg to 1000 Kg,		02 No	Prior to start of sheeting works.
51	Shot blasting equipment required capacity		As per Requirement	
52	Spray painting equipment's required capacity		As per Requirement	
53	Drilling machine --- Magnetic type required capacity		As per Requirement	
54	Safety ladder for sheet laying		As per Requirement	

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SN	DESCRIPTION	CAPACITY (MINIMUM)	MINIMUM QUANTITY Pkg- (AHP+ (LHP+GHP))	REMARKS
55.	Welding quality control equipment such as MPI, LPI. R.T & U.T etc.		As per Requirement	

4.2 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:

- All above T&Ps are to be deployed by contractor as and when required as per instruction of BHEL engineer. If works gets delayed due to non-availability of above T&Ps, BHEL reserves the right to deploy the same and recover the charges thereof from the contractor as per prevailing market rate/hiring rate/BHEL internal hiring rates, as the case may be, + Applicable overhead rates.**
- Number of Major T&Ps listed above are fixed. All the other relevant clauses shall be read accordingly.
- This above list of T&Ps (apart from Major T&Ps) is only indicative and neither exhaustive nor limiting. Quantities indicated above are only the minimum required. Contractor shall deploy all necessary T&P to meet the schedules & as prescribed by BHEL engineer and required for completion of work.
- Depending upon the nature of work and availability of facilities locally, contractor may have to arrange for a temporary workshop for facilitating uninterrupted progress of work.
- Necessary electrical / water / air connection required for operation of any of the tools & tackles shall be to Contractor's account.
- Contractor has to submit the Calibration certificates of all the precision Equipement to BHEL. BHEL may ask for recalibration of the MMEs /precision equipments for ensuring quality of work. Contractor must reascertain/ recheck range and accuracy of each IMTE from BHEL Engineer well in advance before arranging calibration/ deployment.
- Any T&Ps, Cranes, Slings, D-shackles and other lifting tackles, Trailers required for shifting of material from store to site shall be arranged by contractor over and above T&Ps/ crane provided by BHEL.
- T&P (apart from Major T&Ps) and the mobilization shown in the above mentioned list is suggestive requirement considering parallel working in AHP structural area. Mobilization

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schedule as instructed at site for all the required T&Ps, have to be adhered to. Numbers / time of requirement will be reviewed time to time at site and contractor will provide required T&P / equipments to ensure completion of entire work within schedule / target date of completion without any additional financial implication to BHEL. Vendor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipments. Also on completion of the respective activity, demobilization of T&P in total or in part can be done with the due approval of engineer in charge. Retaining of the T&Ps during the contract period will be mutually agreed in line with construction requirement.

9. In the event of need of change of type of any of T&Ps, approval shall be taken from BHEL Engineer in-charge prior to mobilization. The decision of Number of T&P required due to replacing the enlisted T&P as per above table, shall be taken after analyzing the production capacity and suitability of both the T&Ps.
10. Crane operators deployed by the contractor shall be tested by BHEL before they are allowed to operate the cranes.
11. The above list is only indicative (apart from major T&Ps) and all these T&Ps including major T&Ps may not be required for entire contract period but contractor shall ensure the availability of the T&Ps as per work requirement and T&P Deployment schedule. T&P Deployment schedule shall be finalized at site in consultation with BHEL Engineer based on the work fronts/work requirement. BHEL decision shall be final and binding regarding the T&P deployment schedule. Contractor shall mobilize / maintain the T&P's as per the deployment schedule notified time to time by BHEL Engineer.
12. APR- Contractor has to deploy T&P, MMD, IMTE as per requirement of site and as decided by BHEL Engineer.
13. Any additional item (apart from Major T&Ps) required in addition to above mentioned T&P for proper execution of scope of work, contractor has to arrange such T&P within quoted rate on the instruction of BHEL in writing in a reasonable period within two weeks from the written instruction from BHEL.
14. T&Ps mentioned above shall be specifically deployed as per the requirement. However, as per work requirement and availability of T&Ps the inter use in Material Handling and Mechanical works may be permitted as per the instruction of the BHEL Engineer.
15. If the work related to T & Ps mentioned above is completed then, BHEL can release that T & P during contract period / extended period if any. However, written permission shall be taken by contractor from BHEL construction Manager for releasing the T&P.
16. In case of any specific requirement of higher capacity crane apart from the vendors scope shall be provide by the BHEL on sharing basis & free of charge.
17. The T&P deployment as specified in above table is only indicative, however the contractor has to ensure the availability of required T&P till completion of all the work under his scope in this tender.

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18. In the eventuality of contractor not deploying cranes / abnormal down time of cranes in his scope during the period specified above, and BHEL arranges for the same [either BHEL's own cranes / hired cranes], prevailing BHEL Corporate Crane hire charges (may vary from time to time) shall be recovered from the contractor's running bills. Corresponding pages of Corporate Crane hire charges are enclosed as part of VOL I as File titled "Annexure 1- BHEL Crane Hire Charges". (Please note that these charges are as valid up to May 31, 2021 and may get revised further).
19. For loading and transportation, all necessary T&P such as Trailers, Cranes, Winches, welding generators, slings, jacks, sleepers, rails etc., are to be arranged by the contractor.
20. The contractor has to furnish a list of Tools and plants including cranes / tractors / trailers / trucks etc. which he has proposed to deploy for this work.
21. The contractor shall arrange crane operator, diesel, petrol and other consumables required for the tools and plants, equipments etc. Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay. Required number of experienced mechanics and helpers for routine maintenance of the above cranes shall be provided by the contractor within his quoted rate.

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Chapter – V: T&Ps and MMEs to be deployed by BHEL on sharing basis

5.1 LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:

SL NO	DESCRIPTION & CAPACITY OF T&P	QUANTITY	REMARKS
1	Cranes of Capacity above 150 MT.	As decided by BHEL	Except Contractor scope, required for mentioned work will be arranged by BHEL as per requirement.

- 5.2 All the T&Ps mentioned in clause 5.1 above shall be given to contractor on sharable basis and the allotment is made by BHEL on need basis.
- 5.3 Contractor shall transport from BHEL stores, install, operate, carry out maintenance, dismantle after use and return to BHEL stores all T&Ps mentioned in Sr no 5.1 for his use.
- 5.4 These cranes are owned or hired by BHEL. Operator for BHEL owned crane will be arranged by BHEL. Operators for hired crane will be provided by the hiring agency.
- 5.5 Contractor shall make necessary arrangements like laying of special sleeper beds and steel plates (**sleepers for BHEL owned cranes shall be provided by the BHEL**), assembly and dismantling of heavy attachment, boom, jib etc for movement and operation of the crane. Contractor shall provide necessary manpower assistance for initial and final assembly & dismantling and for subsequent operations of boom extension and reduction during execution of work. Consolidation of the ground, if required (Area required for movement of crane), and preparation (including civil work with material) for placing crane for operation shall be done by the contractor, at his cost. Necessary plates / sleepers required for marching operation shall also be provided by the BHEL only for BHEL owned cranes.
- 5.6 Contractor shall provide the fuel, and consumables for BHEL provided cranes (hired/owned) for his use. Lubricants for crane shall be provided by the BHEL.
- 5.7 Cranes provided by BHEL will be on sharing basis with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time as decided by BHEL for suitable duration and intended purpose.
- 5.8 Above T&P and cranes will be used for erection of both units structure on sharable basis.
- 5.9 Cranes are only for erection purpose and shall not be available for material handling or transportation purpose. Contractor shall make their own arrangements for material transportation to erection site.

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- 5.10 All the distribution boards, connecting cables, hoses etc., and temporary connection work including electrical connections for the BHEL issued T&Ps shall have to be arranged by the contractor at his cost.
- 5.11 Besides the T&P mentioned above, which is being made available to the contractor on free of hire charges, any additional crane and other T & P which may be required for successful and timely execution of the work covered within the scope of this tender shall be arranged and provided at site by the contractor at his cost. In case if the contractor fails to provide such equipments, BHEL will arrange for the same and the cost will be recovered from the contractor's bill with BHEL overheads, as applicable from time to time which may vary even during contract period.
- 5.12 The day-to-day and routine maintenance including replacement of spares for the BHEL T&Ps will be carried out by the contractor at his own cost. However, BHEL shall supply spare parts free of charges for normal wear and tear only.
- 5.13 Any loss/damage of tools by the contractor shall have to be replaced or otherwise cost thereof shall be recovered from the contractor.
- 5.14 The contractor shall make necessary arrangement like laying of special sleeper beds, assembly & dismantling of heavy lift attachment, boom, jib etc. for movement and operation of crane.

Note: For Crane:

Common for All:

1. The cranes may be BHEL owned or may be obtained on hiring basis including operating and maintenance crew.
2. Operator and O&M for BHEL owned crane will be provided by BHEL.
3. Contractor shall provide the fuel for BHEL provided cranes (Hired/owned) for his use.
4. Contractor shall provide necessary manpower assistance for initial and final assembly & dismantling and for subsequent operations of boom extension and reduction during execution of work. Contractor shall also make necessary arrangements like laying of special sleeper beds and steel plates (**sleepers for BHEL owned cranes shall be provided by the BHEL**) for movement and operation of the crane.

Cranes provided by BHEL will be on sharing basis with other agencies / contractors of BHEL. The allocation of cranes shall be the discretion of BHEL engineer, which shall be binding on the contractor. Cranes will be deployed at appropriate time as decided by BHEL for suitable duration and intended purpose. Augmentation of BHEL T & P under special circumstances shall be discretion of BHEL.

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Chapter – VI: Time Schedule

6.1. TIME SCHEDULE & Mobilization

6.1.1 INITIAL MOBILIZATION

After receipt of LOI, Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilization. Contractor shall reach site, make his site establishment and be ready to commence the erection work **within two weeks from the date of issue of Letter of Intent or as per the directions of Construction Manager/ Project Manager of BHEL**. Such resources shall be progressively augmented to match the schedule of milestones.

6.1.1.1 Erection/placement on its designated foundation / location, of the first 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 date of Start of contract period shall be the mutually agreed date between the bidder and BHEL engineer to start the work. In case of discrepancy, the decision of BHEL engineer is final.

6.1.1.2 Based on the availability of civil foundations from BHEL and materials from manufacturing agencies, contractor may have to advance the start of erection after getting clearance from construction manager, or the start of erection may get delayed due to site condition.

6.1.2 MOBILIZATION FOR ERECTION

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 clause no. 6.1.1) as per requirement to commence the work of erection of AHP structure and progressively augment the resources to match schedule of the project.

6.1.2.1 The entire work of Structural works under tender **(AHP & FGD (LHP+GHP))** as detailed in the Tender Specification shall be completed **within 23 (Twenty Three) month**.

6.1.2.2 During the total period of contract, the contractor has to carry out the activities in a phased manner as required by BHEL and the program of milestone events.

6.1.2.3 The erection work shall be commenced on the mutually agreed date between the bidder and BHEL engineer. The scope of work under this contract is deemed to be completed only when so certified by the site Engineer.

6.1.2.4 The contractor shall have to mobilize his resources earlier than the start of contract period for preparatory work like taking over and chipping of foundations, blue-matching, grouting of packer plates etc or start of fabrication. The contractor shall complete all the works in the scope of this contract within the contract period. Pending points identified by the

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customer/BHEL during the execution of the contract are to be liquidated during the contract period itself.

6.1.2.5 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.

6.1.2.6 In case the project is to be advanced, the structural steel works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.

6.1.3 SUBMISSION OF L3 SCHEDULE

6.1.3.1 The contractor shall submit and a detailed area/structure wise L3 schedule within 15 days in consultation with BHEL based on the tentative schedule provided as per the clause 6.2.3 The detailed L3 schedule shall be approved by BHEL and same shall be implemented. Bidder shall submit L3 schedule in MS Projects to meet the agreed project schedule covering various milestone activities and their split up details such as construction, procurement of materials, fabrication & erection activities. This schedule shall also clearly indicate the interface facilities/inputs to be shall commence from the date of completion of the whole of the work in the package, certified by the Engineer.

6.1.3.2 The major activities as mentioned below are also to be indicated in detailed schedule which will be prepared by the bidder:

AHP Package:

- Handing Over of Compressor houses
- Handing Over of TPs
- Handing Over of BCNs

6.2 COMMENCEMENT OF CONTRACT PERIOD AND TENTATIVE SCHEDULE

6.2.1 The Contractor has to subsequently augment his resources in such a manner that following major milestones of erection & commission are achieved on specified schedules. The schedule for the scope of works is as given below:

Table :1 Schedule of Milestones:

SL No.	Milestones	Completion month from the date of start
1.	Start of work	1 st Month
2.	FA,BA & Intermediate Silos	14 th Month

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3.	TPs & BCNs completion	18 th Month
4.	Pipe racks completion	19 th Month
5.	Touchup paintings	21 th month
6.	Material Reconciliation, Balance Finishing works & Final bill submission	23 th Month

6.2.2 The above schedule is tentative. In case the project is to be advanced, the structural works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.

6.2.3 The above schedule is for entire completion and handing over the structure/ Building to BHEL.

6.2.4 The structural pedestals, platforms, racks, floors, etc, required for the mechanical equipment erection/ structural erection shall be handed over BHEL progressively within the scheduled period given in the above table, as per the BHEL site requirement.

6.2.5 The left out minor finishing works shall also be completed and handed over to BHEL within the contract period.

6.3 PROVISION OF PENALTY IN CASE OF SLIPPAGE OF INTERMEDIATE MILESTONES:

In case of slippage of Two Major Intermediate Milestones, mentioned as M1 & M2 hereunder, Delay Analysis shall be carried out on achievement of each of these two Intermediate Milestones in reference to F-14.

Milestones	Activities	Completion month from the date of start
M1	FA,BA & Intermediate Silos	14th Month
M2	TPs & BCNs completion	18th Month

Note 1: Refer clause no 5 of ANNEXURE-12 'Important Information' of the NIT regarding modalities against provision of penalty in case of slippage of Intermediate Milestones.

Note 2: Above time schedule is tentative and in order to meet above schedule in general, and any other intermediate targets set, to meet customer/project schedule, contractor shall arrange & augment all necessary resources from time to time as per the instructions of BHEL.

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6.4 RECORDS TO BE MAINTAINED AT SITE:

- 6.4.1 Record of Quantity of FREE/ Chargeable items issued by BHEL must be maintained during contract execution. Also reconciliation statement to be prepared at regular intervals.
- 6.4.2 The under mentioned Records/ Log-books/ Registers applicable to be maintained.
 - 6.4.2.1 Hindrance Register.
 - 6.4.2.2 Site Order Book.
 - 6.4.2.3 Test Check of measurements.
 - 6.4.2.4 Records of Test reports of Field tests.
 - 6.4.2.5 Records of manufacture's test certificates.
 - 6.4.2.6 Records of disposal of scraps generated during and after the work completion

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Chapter – VII: PAYMENT TERMS

7.0 Progressive Payment / Final Payment:

The payments for works under the scope of this contract shall be as per clause no 2.6; clause 2.22; clause 2.23 of General Conditions of Contract and Chapter X of Special Conditions of Contract. However, Clause No. 10.5 on RA Bill Payments, in Volume-IB, Chapter-X of SCC, is revised as under:

The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile.

Few points of consideration are as below:

7.1.1 The measurements sheets of work done in a month shall be submitted in triplicate duly agreed/signed by BHEL Engineer. The contractor shall extend all necessary assistance for verification of measurements of works without any extra cost.

7.1.2 The RA bill payments are interim payments and bills shall be submitted in prescribed formats.

7.1.3 BHEL will release payment through **Electronic Fund Transfer (EFT)/RTGS**.

7.1.4 Final bill shall be submitted after completion of works and upon material reconciliation along with all prescribed formats.

7.1 In order to facilitate part payment, BHEL Site Engineer at his discretion may further split the contracted rates/percentages to suit site conditions, cash flow requirements according to the progress of work as per Vol. IC - GCC clause 2.23.1 (v), however following points are to be noted:

- a) Provided no 'part' payment is recommended till 25% of work in the item rate is executed.
- b) Payment of item rate to be made in not more than three instalments, last stage payment to be not lower than 20% of the item rate.

7.2 Extra/Supplementary items of work:

The works shall be regulated as per clause no 2.15 and clause no 2.16 of General Conditions of Contract.

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Chapter-VIII-: TAXES & OTHER DUTIES

TAXES, DUTIES, LEVIES (Rev 14 dated 09/10/2020)

1. All taxes excluding GST, GST Cess & BOCW Cess **but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by you and shall not be payable extra.**
2. Any increase of the taxes excluding GST, GST Cess & BOCW Cess, at any stage during execution including extension of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements. Please note that since GST on output will be paid by BHEL separately as enumerated below, your quoted rates/ price should be after considering the Input Credit under GST law at your end.
3. **GST** :

The successful bidder shall furnish proof of GST registration .GST along with Cess (as applicable) legally leviable & payable by the successful bidder as per GST Law, shall be paid by BHEL. Hence Bidder shall not include GST along with Cess (as applicable) in their quoted price.

4. GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return
5. E-invoicing under GST has been implemented with effect from 1st October 2020 for all the taxable persons having turnover more than the threshold limit in any preceding financial year from 2017-18 onwards. Therefore, for all the taxable persons falling under the purview of E-invoice, it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from E-Invoicing portal of the Government for the purpose of issuing a valid Tax Invoice. Only an E-invoice issued in the manner prescribed under rule 48(4) of CGST Rules shall be treated as valid invoice for reimbursement of GST amount.

If the successful Bidder is not falling under the purview of E-Invoicing then he has to submit a declaration in that respect along with relevant financial statements.

6. Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:

BHEL GSTN – As per **Annexure -1**

NAME -- Bharat Heavy Electricals Limited

ADDRESS – Site address

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7. Bidder to immediately intimate on the day of removal of Goods (in case of any supply of goods) to BHEL along with all relevant details and a scanned copy of Tax Invoice to below email ids to enable BHEL to meet its GST related compliances :-

Email id ---- to be intimated later on.

In case of delay in submission of the abovementioned documents on the date of dispatch, BHEL may incur penalty /interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from the successful bidder, if such delay is not attributable to BHEL.

8. In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with Rule 53.
9. Bidder shall note that in case GST credit is delayed/ denied to BHEL due to delayed / non receipt of goods and /or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from the vendor along with interest levied / leviable on BHEL, as the case may be.
10. Bidder shall upload the Invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law , GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the bidder along with interest levied / leviable on BHEL.
11. Way Bill: Successful Bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract.

The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose.

12. **New taxes and duties:-**Any New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period including extension, if the same is not attributable to you, shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.

Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.

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

13. For transportation work, bidder shall declare in his quotation whether he is registered under GST, if yes, whether he intends to claim GST on forward charge basis. In absence of this declaration, BHEL will proceed further with the assumption that bidder intends not to claim GST on forward charge basis. However, in case of GST registered transporter, the amount to the extent of goods and service tax will be retained till BHEL avails the credit of GST. Further, transporter shall issue tax invoice which inter alia includes gross weight of the consignment, name of the consigner and the consignee, registration number of vehicle in which the goods are transported, details of goods transported, details of place of origin and destination, GSTIN of the person liable for paying tax whether as consigner, consignee or goods transport agency, and also containing other information as mentioned under rule 46.
14. **TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills unless exemption certificate from the appropriate authority/ authorities is furnished.**
15. **TDS under GST shall be deducted at prevailing rates on applicable value from the running bills.**
16. **TCS under Income Tax 1961 has been implemented with effect from 1st October 2020 for every seller having turnover more than threshold limit during financial year immediately preceding financial year in which the sale of goods is carried out, who receives any amount as consideration for sale of any goods of the value or aggregate of such value exceeding threshold limit other than export of goods or who is already covered under other provision of section 206C, collect from the buyer, TCS as per applicable rates of the sale consideration exceeding threshold limit subject to following conditions**
 - i. Buyer shall be as per clause (a) of section 206C- (1H)
 - ii. Seller shall be as per clause (b) of section 206C- (1H)

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- iii. No TCS is to be collected, if the seller is liable to collect TCS under other provision of section 206C or the buyer is liable to deduct TDS under any provision of the Act and has deducted such amount.

If Successful Bidder is falling under the purview of TCS then he has to submit a declaration in that respect along with relevant financial statements before the start of work or if bidder is falling under preview of TCS during the work in progress then bidder is compulsorily required to submit relevant financial statement in the beginning of the respective FY.

For TCS claim, vendor has to submit relevant documents required as per Income Tax Act.

17. Refer Annexure – 2 for BOCW Act & Cess Act.

ANNEXURE-1

State wise GSTIN no.s of BHEL

Sl. No	Projects under state	GSTIN
1	Andhra Pradesh	37AAACB4146P7Z8
2	Bihar	10AAACB4146P1ZU
3	Chhattisgarh	22AAACB4146P1ZP
4	Gujarat	24AAACB4146P1ZL
5	Jharkhand	20AAACB4146P5ZP
6	Madhya Pradesh	23AAACB4146P1ZN
7	Maharashtra	27AAACB4146P1ZF
8	Orissa	21AAACB4146P1ZR
9	Telangana	36AAACB4146P1ZG

ANNEXURE-2

BOCW Act & Cess Act

Bidder may please note that the sub-contractor/bidder of BHEL engaging building or construction worker in connection with building or other construction work, are required to follow the procedures enumerated below:

1. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
2. It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and

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obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.

3. It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.
4. It is responsibility of the contractor to register under the Building and other Construction Workers' Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may , by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager.
5. It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.
6. It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
7. It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.
8. It shall be the responsibility of the sub-contractor as employer to make payment/deposit of applicable cess amount on the extent of work involving building or construction workers engaged by the sub-contractor within a period of one month from the receipt of payment. It shall also be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics :
 - (i) Number of Building Workers employed during preceding one month.
 - (ii) Number of Building workers registered as Beneficiary during preceding one month.

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- (iii) Disbursement of Wages made to the Building Workers for preceding wage month.
 - (iv) Remittance of Contribution of Beneficiaries made during the preceding month
9. BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.
 10. It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board , within the fifteen days from such deduction.
 11. Bidders may please note that though the quoted price is exclusive of BOCW (which will be reimbursed by BHEL as per sub-clause 9 above) , however, If at any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to deduct the applicable cess (1%) on the contract value and penalty (if any, imposed by Cess Authorities) from the payables on account of non-compliance.
 12. The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.

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Void

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10.1 GENERAL

Site Visit by the Bidder

10.1 The bidder shall, prior to submitting his tender for the work, visit and examine the site of works and its surroundings at his own expense, and obtain and ascertain for himself on his own responsibility all information that may be necessary for preparing his tender and entering into a contract, and take the same into account in the quoted contract price for the work.

10.2 The bidder shall satisfy themselves about the following factors:

- i) Site conditions including access to the site, existing and required roads and other means of transport/communication for use by him in connection with the work including diverting and re-routing of services.
- ii) Requirement and availability of land and other facilities of his enabling works, establishment of his nursery, office, stores etc.
- iii) Ground conditions including those bearing upon transportation, disposal, handling and storage of materials required for the work or obtained there-from.
- iv) Source and extent of availability of suitable materials, including water etc., and labour (skilled and unskilled) required for work, and laws and regulations governing their use and employment.
- v) Geological, meteorological, topographical and other general features of the site and its surroundings as are pertaining to and needed for the performance of the work.
- vi) The limit and extent of surface and subsurface water to be encountered during the performance of the work, and the requirement of drainage and pumping.
- vii) The type of equipment and facilities needed, for and in the performance of the work:
- viii) The extent of lead and lift required for the work in complete form over the entire duration of the contract, and
- ix) All other information pertaining to and needed for the work including information as to the risks, contingencies and other circumstances which may influence or affect the work or the cost thereof under this contract.

10.3 It is not the intent to specify herein all details of all material. Any item related this work not covered by this but necessary to complete the system will be deemed to have been included in the scope of the work.

10.4 All the necessary certificates and licenses required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.

10.5 Site testing wherever required shall be carried out for all items / materials installed by the contractor to ensure proper installation and functioning in accordance with drawings, specifications and manufacturer's recommendations.

10.6 The contractor shall carryout additional tests, if any, which the Engineer feels necessary because of site conditions and also to meet system specification.

10.7 The work shall be executed under the usual conditions without affecting power plant construction / operation and in conjunction with other operations and contracting agencies at site. The contractor and his personnel shall cooperate with the personnel of other

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- agencies, co-ordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 10.8 All the work shall be carried out as per instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the contractor.
- 10.9 Wherever Construction sequences are furnished by BHEL, the contractor shall follow the same sequence.
- 10.10 Contractor shall execute the supply and works as per sequence prescribed by BHEL at site engineer. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the methods of execution of similar job in any other site or for any reasons whatsoever.
- 10.11 If required by BHEL, the contractor shall change the sequence of his operation so that work on priority sectors can be completed within the projects schedule. The contractor shall afford maximum assistance to BHEL in this connection without causing delay to agreed completion date.
- 10.12 Contractor shall, transport all materials to site and unload at site / working area for inspection and checking. All material handling equipment required shall be arranged by the contractor.
- 10.13 Contractor shall retain all T&P / Testing instrument / Material handling equipment's etc. at site as per advice of BHEL engineer and same shall be taken out from site only after getting the clearances from engineer in charge.
- 10.14 The contractor at his cost shall arrange necessary security measures for adequate protection of his machinery, equipment, tools, materials etc. BHEL shall not be responsible for any loss or damage to the contractor's construction equipment and materials. The contractor may consult the Engineer-in-Charge on the arrangements made for general site security for protection of his machinery equipment tools etc.
- 10.15 The bidder and any of his personnel or agents will be granted permission by the Site-In-Charge or his authorized nominee, on receipt of formal application in respect thereof a week in advance of the proposed date of inspection of site, to enter upon his premises and lands for purpose of such inspection, but only on the express condition that the tenderer (and his personnel and agents) will relieve and indemnify the Employer (and his personnel and agents) from and against all liability in respect thereof and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused which, but for the exercise of such permission, would not have arisen.
- 10.16 Contractor shall execute the work as per sequence and procedure prescribed by BHEL at site. The applicable erection manuals which are available with BHEL site office are to be referred for compliance and guidance before taking up the work. Any rework on this failure to comply with will be to account of contractor only. BHEL engineer, depending upon the availability of materials, fronts etc., will decide the sequence of erection and methodology. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the method of erection adopted in erection of similar jobs in other projects or for any reason whatsoever.
- 10.17 The contractor is strictly prohibited from using BHEL's regular components like angles, channels, beams, plates, pipe / tubes, and handrails etc. for any temporary supporting or scaffolding works or as bed for pre-assembly works. Contractor shall arrange himself all such materials. In case of such misuse of BHEL materials, a sum as determined by BHEL

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- engineer will be recovered from the contractor's bill. The decision of BHEL engineer is final and binding on the contractor.
- 10.18 All the works such as cleaning, levelling, aligning, trial assembly, dismantling of certain components for checking and cleaning, surface preparation, fabrication of sheets, as per general engineering practice and as per BHEL Engineer's instructions at site, cutting, weld depositing, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scrapping, lapping, fitting-up etc., as may be applicable in such erection works and are necessary to complete the work satisfactorily, shall be carried out by the contractor as part of the work within the quoted rate. Major machining work, which is only to be carried out in workshops, will be arranged by BHEL.
- 10.19 The work covered under this specification is of highly sophisticated nature, requiring the best quality workmanship, engineering and construction management. The contractor should ensure successful and timely operation of equipment installed. The contractor must have adequate quantity of tools, construction aids, equipments etc., in his possession. He must also have on his rolls adequate trained, qualified and experienced supervisory staff and skilled personnel.
- 10.20 The contractor will be responsible for the safe custody and proper accounting of all materials in connection with the work. If the contractor has drawn materials in excess of design requirements, recoveries will be effected for such excess draws at the rate prescribed by manufacturing units.
- 10.21 No member of the already erected structure, platform, pipes, grills, other component and auxiliaries should be cut without specific approval of BHEL engineer.
- 10.22 Welding of temporary supports, cleats, etc. on the AHP columns shall be avoided. In case of absolute necessity contractor shall take prior approval from BHEL Engineer. Further, any cutting or alternation of member of the structure of platform or other equipment shall not be done without specific prior approval of BHEL Engineer.
- 10.23 Contractors shall ensure that all their Staff / Employees are exposed to periodical training programme conducted by qualified agencies / personnel on ISO 9001 – 2008 Standards.
- 10.24 Contractor has to clear the front, expeditiously and promptly as instructed by BHEL Engineer for other agencies, like piping, Turbine, Generator erection, Cabling, instrumentation, insulation etc., to commence their work from / on the equipments coming under this scope. Sometimes, more than one agencies may have to work in same location. Sometimes it may be required to re-schedule the activities to enable other agencies to commence / continue the work so as to keep the overall project schedule.
- 10.25 For the purpose of planning, contractor shall furnish the estimated requirement of power (month wise) for execution of work in terms of maximum KW demand.
- 10.26 Crane operators deployed by the contractor shall be tested by BHEL before he is allowed to operate the cranes.
- 10.27 The contractor must obtain the signature and permission of the security personnel of the customer for bringing any of their materials inside the site premises. Without the Entry Gate Pass these materials will not be allowed to be taken outside.
- 10.28 Upon completion of daily work , the contractor shall remove from the vicinity of work all scrap packing materials, rubbish, unused and other materials and deposit them in places to be specified by BHEL Engineer.
- 10.29 During the course of erection, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if

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it is found that the skilled workmen like fitters, operators, technicians employed are not sufficient BHEL will induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bills.

- 10.30 On completion of work, all the temporary buildings, structures, scaffolding, cables etc. shall be dismantled and levelled and debris shall be removed as per instructions of BHEL by the contractor at his cost. In the event of his failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.
- 10.31 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, T&P 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.
- 10.32 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.
- 10.33 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 as per GCC.
- 10.34 The Contractor shall perform any services, tests etc, which may not be specified but nevertheless, required for the completion of work within quoted rates.
- 10.35 All necessary certificates and licenses required for carrying out this work are to be arranged by the Contractor expeditiously.
- 10.36 The Contractor shall execute the work in the most substantial and workman like manner. The stores shall be handled with care and diligence.
- 10.37 BHEL reserves right to recover from the Contractor any loss which arises out of undue delay / discrepancy / shortage / damage or any other causes due to Contractor's lapse during any stage of work. Any loss to BHEL due to Contractor's lapse shall have to be made good by the Contractor as per GCC.
- 10.38 All cranes, transport equipment, handling equipment, tools, tackles, fixtures, equipment, manpower, supervisors/engineers, consumables etc, except otherwise specified as BHEL

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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.

- 10.39 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.
- 10.40 The distance between storage area and erection site is approx. 3-4 KM. Storage yard located at two different places and both are about 3-4 KM from erection area. Contractor shall plan and transport equipments, components from storage to erection site and erect them in such a manner and sequence that material accumulation at site does not lead to congestion at site of work. Materials shall be stacked neatly, preserved and stored in the Contractor's shed and at work areas in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work areas/ site to enable other agencies to carry out their work or for any other reason, same shall be done by Contractor most expeditiously as incidental to work.
- 10.41 Plant materials should not be used for any temporary supports / scaffolding/ preparing pre-assembly bed etc. The details of equipment's to be erected under this contract are generally as per the schedule given in relevant appendices. These details are approximate and meant only to give a general idea to the tenderer about the magnitude of the work involved. Actual quantum and type of equipments will be based on the relevant erection documents which will be furnished to the Contractor in due course of erection and the weight and quantity as per the relevant engineering documents will only be admissible for the billing purpose.
- 10.42 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.
- 10.43 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.
- 10.44 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.
- 10.45 Scope of work covered under this specification requires quality workmanship, engineering and green belt management along with the supply of all consumables, tools and tackles and

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testing instruments. The contractor shall ensure timely completion of work. The contractor shall have adequate tools, measuring instruments etc. in his possession. He shall also have adequate trained, qualified and experienced engineers, supervisory staff and skilled personnel. The manpower deployment identified by contractor shall match with above scope of works.

- 10.46 It is not the intent to specify herein all details of all material. Any item related this work not covered by this but necessary to complete the system will be deemed to have been included in the scope of the work.
- 10.47 Site testing wherever required shall be carried out for all items / materials installed by the contractor to ensure proper installation and functioning in accordance with drawings, specifications and manufacturer's recommendations
- 10.48 The contractor shall carryout additional tests if any, which the Engineer feels necessary because of site conditions and also to meet system specification
- 10.49 The work shall be executed under the usual conditions without affecting power plant construction / operation and in conjunction with other operations and contracting agencies at site. The contractor and his personnel shall co-operate with the personnel of other agencies, co-ordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 10.50 All the work shall be carried out as per instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the contractor.
- 10.51 Wherever Construction sequences are furnished by BHEL, the contractor shall follow the same sequence.
- 10.52 Contractor shall execute the supply and works as per sequence prescribed by BHEL at site engineer. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the methods of execution of similar job in any other site or for any reasons whatsoever. If required by BHEL, the contractor shall change the sequence of his operation so that work on priority sectors can be completed within the projects schedule. The contractor shall afford maximum assistance to BHEL in this connection without causing delay to agreed completion date.
- 10.53 Contractor shall, transport all materials to site and unload at site / working area for inspection and checking. All material handling equipment required shall be arranged by the contractor.

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- 10.54 Contractor shall retain all T&P / Testing instrument / Material handling equipment's etc. at site as per advice of BHEL engineer and same shall be taken out from site only after getting the clearances from engineer in charge.
- 10.55 The contractor at his cost shall arrange necessary security measures for adequate protection of his machinery, equipment, tools, materials etc. BHEL shall not be responsible for any loss or damage to the contractor's construction equipment and materials. The contractor may consult the Engineer-in-Charge on the arrangements made for general site security for protection of his machinery equipment tools etc.
- 10.56 The Contractor may have to execute work in such a place and condition where other agencies also will be under such circumstances. However, completion time for construction, agreed will be subject to the condition that contractor's work is not hampered by the agencies.
- 10.57 Contractor shall remove all scrap materials periodically generated from his working area and collect the same at one place earmarked for the same. Load of scraps is to be shifted to a place earmarked by BHEL. Failure to collect the scrap is likely to lead to accidents and as such BHEL reserves the right to collect and remove the scrap at contractor's risk and cost if there is any failure on the part of contractor in this respect.
- 10.58 The contractor shall ensure that his premises are always kept clean and tidy to the extent possible. Any untidiness noted on the part of the contractor shall be brought to the attention of the contractor's site representative who shall take immediate action to clean the surroundings to the satisfaction of the Engineer in- Charge.
- 10.59 No member of the already erected structure / buildings, should be removed / modified without specific approval of BHEL engineer.
- 10.60 Some time it may be required to re-schedule the activities to enable other agencies to commence / continue the work so as to keep the overall project schedule.
- 10.61 It is the responsibility of the contractor to do the checking, testing etc. if necessary, repeatedly to satisfy BHEL Engineer with all the necessary tools and tackles, manpower etc. without any extra cost. The testing will be completed only when jointly certified so, by the BHEL Engineer.
- 10.62 The contractor's work shall not hinder other work, either underground or over ground, such as electrical, phone lines, water or sewage lines, etc. In areas of overlap, the contractor shall work in coordination with other related contractors.

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10.63 Any damage by the landscape contractor's team to such utilities will be penalized and contractor shall be responsible for cost for such damages.

10.64 SITE INSPECTION

10.64.1 The owner / employer or his authorized agents may inspect various stages of work during execution stage. The contractor shall make necessary arrangements for such inspection and carry out the rectification pointed out by the owner / employer without any extra cost to the owner / employer. No cost whatsoever such duplication of inspection of work be entertained.

10.64.2 BHEL / Customer will have full power and authority to inspect the works at any time, either on the site or at the contractor's premises. The contractor shall arrange every facility and assistance to carry out such inspection. On no account will the contractor be allowed to proceed with work of any type unless such work has been inspected and entries are made in the site inspection register by customer / BHEL.

10.65 DOCUMENTATION

10.65.1 The following information shall be furnished by the bidder within two weeks of award of contract for purchaser's approval

- a. Bar chart covering planned activities at site
- b. Detailed organization chart
- c. Details of T&P available with contractors with documents proofs.

10.65.2 The following information shall be furnished by the bidder after testing and inspection: Test certificates of various tests conducted at site. All inspection and test certificates shall be signed by BHEL representative also.

10.66 Dewatering

Dewatering of Low Lying areas like lift pits , other low lying areas (as per scope applicability) till handing over to customer is in bidders scope for which vendor has to arrange and maintain adequate no. of Diesel & electrical pumps of suitable capacities, operators, necessary manpower with sufficient quantity of suction & discharges hoses, pipes, Clamps, cables, Electrical panels/starters, diesel, consumables without any extra commercial implication on BHEL treating as normal scope of work. Dewatering pumps will be required to run to ensure job progress is not hampered & if required pumps are to be run on round the clock basis on working days & holidays, Sundays.

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10.67 Housekeeping/Area Cleaning.

The contractor has to do area cleaning on every date on daily basis. Noncompliance of the above cleaning shall be done by BHEL at the risk and cost of the contractor. No excuses on this above account shall be entertained by BHEL on whatsoever account.

10.68 Approach platforms , fixtures

Steel items like angles, scaffoldings for erection of bracings, Tie beams are to be arranged by vendor for structural erection treating it as normal scope of work without any cost implication on BHEL.

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Chapter-XI WORK PROGRESS

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

- 11.1 Refer forms F -14 to F-18 of volume I D (Forms & Procedure) of volume -ID I (Book-II). Plan and review will be done as per the formats.
- 11.2 The progress reports shall indicate the progress achieved against plan, indicating reasons for delays, if any. The report shall also give remedial actions which the contractor intends to make good the slippage or lost time so that further works can proceed as per the original plan the slippages do not accumulate and affect the overall programme.
- 11.3 It is the responsibility of the contractor to provide all relevant information on a regular basis regarding progress of work, labour availability, equipment deployment, testing, etc.
- 11.4 Contractor is required to draw mutually agreed monthly work programs in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed program and shall also timely arrange additional resources considered necessary at no extra cost to BHEL.
- 11.5 Progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled program shall be discussed for actions to be taken for achieving targets. Contractor shall also present the program for subsequent week. The contractor shall constantly update / revise his work program to meet the overall requirement. All quality problems shall also be discussed during above review meetings. Necessary preventive and corrective action shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of nonconformities.
- 11.6 The contractor shall submit daily, weekly and monthly progress reports, manpower reports, materials reports, consumables (gases / electrodes) report, cranes availability report and other reports as per Performa considered necessary by the Engineer. The periodicity of the reports will be decided by BHEL Engineer at site.
- 11.7 The contractor shall submit weekly / fortnightly / monthly statement report regarding consumption of all consumables for cost analysis purposes.
- 11.8 The contractor shall submit a report of any damage, shortage, discrepancy etc., every week detailing in this regard.
- 11.9 The manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.

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Chapter-XI WORK PROGRESS

- 11.10 The monthly report as a booklet shall be submitted at the end of every month and shall contain the following details :-
- a) Progress photographs in colour.
 - b) Erection progress in terms of tonnage, welding joints, radiography, stress relieving, etc., completed as relevant to the respective work areas against planned.
 - c) Site Organization chart of engineers & supervisors as on the last day of the month with further mobilization plan.
 - d) Category- wise man hours engaged during the previous month under the categories of fitters, welders, riggers, khalasis, grinder-men, gascutters, electricians, crane operators and helpers. Data shall be split up under **the work areas like, TPs, BCN, Silos, sheeting work, cladding work, material handling etc.**
 - e) Consumables report giving consumption of all types of gases and electrodes during the previous month.
 - f) Availability report of cranes.
 - g) Safety implementation report in the format.
 - h) Pending material and any other inputs required from BHEL for activities planned during the subsequent month.

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Chapter-XII FOUNDATIONS & GROUTING

12 PREPARATION OF FOUNDATIONS:

- 12.1 Building foundations and other necessary civil works for supporting structures, equipments etc will be provided by BHEL / Customer. The checking of dimensional accuracy, axis, elevation, levels etc, with reference to bench marks of foundations and anchor bolt pits have to be checked and logged by the Contractor. The permanent benchmark / reference marks will have to be transferred to new locations with sufficient care to maintain the accuracy and protected / preserved with adequate care (to enable rechecking at later dates) as per BHEL instruction.

Minor adjustment of foundation level, dressing and chipping of foundation surfaces and blue-matching (wherever required) for of all equipments as per BHEL Engineers instructions, should be done by the Contractor as part of the work. Contractor/BHEL shall prepare protocols before taking over the foundations. Dressing and chipping of foundations as per drawing for achieving proper levels will be within the scope of work/specification.

- 12.2 BHEL will provide free of cost only the shims and packer plates (either machined or plain) which go as permanent part of the equipment. Certain packer plates and shims over and above the quantity received as a part of supplies from manufacturing units of BHEL will have to be cut out from steel plates / steel sheets at site to meet site requirement. Contractor shall cut and prepare packers and shims by gas cutting / chiseling / grinding and de-burr the same. However, machining of the packers wherever necessary, shall be arranged by contractor.
- 12.3 Foundation for the structures to be erected shall be provided by BHEL/ clients of BHEL. The dimensions of the foundations and anchor bolt pits shall be checked by the contractor for their correctness as per drawings. Further, top elevation of foundations shall be checked with respect to bench mark etc. All adjustments of foundations surfaces as may be required for the erection of equipments / plants shall be carried out by the contractor.
- 12.4 Cleaning of foundation surfaces and anchor bolt pits etc., dewatering, making them free of oil, grease, sand and other foreign materials by soda wash, water wash, compressed air or any other approved methods etc.
- 12.5 It shall be contractor's responsibility to check the foundations for their correctness with respect to level, orientation, dimensions etc., and ascertained dimensions shall be measured and submitted to BHEL for approval before erection. Also minor chipping, dressing of foundations up to 30 mm for obtaining proper face for packer plates / shims, as may be required for the erection of the equipment / plants will have to be carried out by the contractor without extra cost.
- 12.6 The surface of foundations shall be dressed to bring the surface of the foundations to the required level and smoothness prior to placement of columns based on the foundations including shear lug provisions / openings.
- 12.7 Foundation pockets are to be cleaned thoroughly before placing the supports / columns / equipments. Verticality of foundation bolts to be checked along with correctness of the

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XII FOUNDATIONS & GROUTING

threads and freeness of the nuts movement. If required cleaning of the threads to be done with proper dies.

- 12.8 The concrete foundation, surfaces shall be properly prepared by chipping, as required to bring the top of such foundation to the required level to provide the necessary roughness for bondage and to ensure enough bearing strength. All laitance and surface film shall be removed and cleaned and the packers placed with suitable mortar prior to erection of the equipment.

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Chapter-XIII MATERIAL HANDLING, TRANSPORTATION AND SITE STORAGE

The scope of the work will comprise of but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

- 13.1 Loading at BHEL / Customer stores and storage yard, transport to site, unloading at site / working area of equipment, placement on respective foundation / location, fabrication yard, pre-assembly bay or at working area are in the scope of work. The scope includes taking materials / Equipments from customer stores / storage yard also. Contractors Quoted / Accepted rate shall be inclusive of the same. Required cranes, tractors, trailer or trucks/ slings/ tools and tackles / labour including operators, fuel, lubricants etc. for loading & unloading of materials will be in the scope of contractor.
- 13.2 The storage yard is located outside the Main Plant Boundary, in more than one location, at a distance of approximately 3-4 KM from the erection site.
- 13.3 The equipments / materials from the storage yard shall be moved in sequence to the actual site of erection / location at the appropriate time as per the direction of BHEL Engineer so as to avoid damage / loss of such equipment at site.
- 13.4 Contractor shall plan and transport equipments, components from storage yard to erection site in such a manner and sequence that material accumulation at site does not lead to congestion at site of work.
- 13.5 Materials shall be stacked neatly, preserved and stored in the contractor's shed / work area in an orderly manner. In case it is necessary to shift and re-stack the materials kept at work area / site to enable other agencies to carry out their work, same shall be done by the contractor at no extra cost.
- 13.6 The contractor shall take all such measures as may be reasonably necessary to ensure that its arrangements and those of its sub-contractors with respect to the transport of Goods, Materials and Labour to the site do not interfere with local traffic in the vicinity of the site and where such interference is unavoidable shall make such special arrangements as may be reasonably required to minimize the effect of such interference

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Chapter-XIV ERECTION

The scope of the work will comprise of but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

14.1 Erection

- 14.1.1 Any fixtures, scaffolding materials, approach ladders, concrete block supports, steel structures required for temporary supporting, pre assembly, checking, welding, lifting & handling during pre-assembly and erection shall be arranged by the contractor at his cost.
- 14.1.2 The temporary structures/ items welded to permanent members/pipes are to be cut and removed without any damage. Any damage so to permanent members/ pipes to be made good by the contractor at his cost.
- 14.1.3 In the case of structural members in certain cases, the raw material will be supplied in random lengths and the contractor will have to make up the length / prepare the edges to suit the matching profiles, weld / bolt connect the joints at no extra cost.
- 14.1.4 Contractor shall engage separate gangs throughout the contract period, exclusively for proper housekeeping of the site. The contractor has to make necessary arrangements for collection and for bringing down the scrap from all locations and taking them away from the erection areas to various locations as indicated by BHEL Engineer. The house keeping must be a routine and continuous activity.
- 14.1.5 The contractor shall take all reasonable care to protect the materials and equipment during erection. Touch up painting required to be done on any equipment or part during the course of erection will have to be done by the contractor.
- 14.1.6 Prior to erection of any components inspection to be done for any foreign materials and damages and they are to be removed / attended as per BHEL engineer.
- 14.1.7 Field Quality Assurance Formats:-It is the responsibility of the contractor to collect and fill up the relevant FQA log sheets of BHEL and present the same to BHEL after carrying out the necessary checks as per the log sheets and obtaining the signature of BHEL and customer as token of their acceptance. Payment to the contractor will be linked with the submission of these FQA log sheets.
- 14.1.8 All test require as per FQP (Field Quality Plan) will be in bidders scope. FQP shall be provided during execution time.
- 14.1.9 Supply and installation of items as per BOQ for AHP structural works

Where ever the design & supply together is covered in the scope of bidder necessary approvals from BHEL / PVUNL shall be taken by bidder for the design, inspection procedure & vendor. List of items for which such approvals required will be frozen during execution of the contract.

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Chapter-XIV ERECTION

- 14.2.1 Contractor shall procure and supply the items to PVUNL Patratu project site as per the BOQ for structural works from BHEL / PVUNL approved vendors, meeting the specification (enclosed), Drawings and instructions of the Engineer.
- 14.2.2 Contractor shall provide the temporary structures like scaffolding, Access ladders, working platforms etc. and removal of the same after completion of AHP Structures erection.

14.3 Reconciliation of material issued by BHEL (free of cost):

General Notes

- a. All steel like **structural steel, except MS/GI/SS handrails** as specified in relevant BOQ shall be issued free of cost by BHEL for use in the work covered in this contract from BHEL stores/storage yard. The contractor shall collect these materials from BHEL stores/storage yard at specified places at his own cost and store the same at his stores as per standard norms. Materials issued will be used only for construction of permanent works. Procurement, supply, fabrication, erection and painting of MS/GI/SS handrails as applicable shall be in contractor's scope.
- b. BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
- c. The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering.
- d. 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. However in case of non-availability of any specific section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F 14) and shall be considered for time extension of contract.
- e. The contractor shall maintain proper store account for all the BHEL issued materials and shall give **Three (03) copies of monthly-computerized reconciliation statement** of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed reconciliation (, Qty wise identification code wise or as required) shall be done **at least once in three months (03) or before submission of final bill which comes earlier.**
- f. 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 in time.
- g. The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.

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Chapter-XIV ERECTION

- h. BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.

14.4 **HANDLING OF MATERIALS ISSUED BY BHEL:**

- 14.4.1 Materials shall be issued by BHEL based on the weighment basis/linear measurements & sectional weight. However, on specific request of the contractor **“as a special case to expedite the job”** the consignment received at BHEL stores can directly be diverted to the work site following issuance procedure of BHEL. Such direct issues shall be as per the Challan/dispatch document/LR received with the consignment. In such cases, contractor shall do unloading of materials from trucks/lorry at their own cost.
- 14.4.2 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 at his own cost within the quoted rates. All other equipment 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.

14.5 **Issue Of steel**

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

- i. Structural Steel: Weighment basis (Unit-MT)
- iii. GI Gratings: Weighment Basis (Unit-MT/As Received from manufacturer)
 - i. MS Rails: Weighment Basis (Unit-MT)

- 14.5.2 All the steel structure issued by BHEL (as per BOQ) shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs etc. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS/BS/EN specifications

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Sr No	Name of Standard	Name of Section
1	IS: 808-1964	Beams, Channels and Angles
2	IS: 1730-1961	Plates, Sheets and Strips/Flats
3	BS4-1: 1993	UB/UC sections
4	IS: 12778/equivalence with EN-19-57	For NPB sections
5	IS: 12778/equivalence with EN-53-62	For HE/WPB sections
6	IS: 1786 or grade -1 of IS432 (Part-I)	Rounds including deformed high yield strength bars.

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

- 14.5.3 The steel 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.
- 14.5.4 The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
- 14.5.5 The contractor shall submit to BHEL, a statement indicating estimated quantity and steel required during a 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.
- 14.5.6 Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

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SL No.	ISSUE OF MATERIALS	MAX QUANTITY IN CONTRACTORS STORE
01	Reinforcement Steel, MS Rod /GI Flat, GI Grating , Foundation Bolts, MS Rails	ONE MONTH
02	Structural Steel	ONE MONTH

14.5.7 Bidders shall ensure that no lamination material is taken over by them from BHEL.

14.6 The contractor must note that cement and steel required for the contractor's enabling job like store/ site office/ ~~batching plant~~/temporary work etc shall be arranged by the contractor at his own cost.

14.7 RETURN OF MATERIALS

14.7.1 Return of Reinforcement Steel and Structural Steel including Scrap: All surplus steel and all wastage materials will be taken back on weighment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately at a place directed by BHEL Engineer within the project area. Return of such materials will not be entitled for any handling and incidental charges. All wastage / scrap (including melting scrap, wastage, and unusable scrap) shall be returned to the stores in consultation with BHEL Engineer and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any transportation and incidental charge. Scrap for ~~reinforcement steel~~ and structural steel shall be returned separately.

14.8 Scrap & Serviceable Materials:

14.8.1 All structural steel of length above 2 M except M.S Plate shall be considered as **serviceable materials** provided the materials are free from any physical damage, good condition and un-welded. Structural steel of length less than 2 M shall be treated as scrap.

14.8.2 Plates having both side greater than 1 Meter OR if any side is less than 1 M but greater than 0.5 M and the total area is equal or greater than 2 sq. Meter shall be considered as **serviceable materials**.

14.8.3 All pipe measuring 2 M and above in length shall be treated as **serviceable materials** provided they are free from any physical damage, good condition and un-welded. Pipe in less than 2 M length shall be treated as Scrap.

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14.9 Steel Consumption and Wastage

14.9.1 Structural Steel, Earthing MS Rod/~~GI Flat~~, GI Gratings, and MS Rails Consumption (Which are in BHEL Scope)

The theoretical consumption of various sections and/or diameter of reinforcement and earthing rod steel shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

14.9.1.1 Actual consumption = Issue – Surplus.

14.9.1.2 Surplus = untempered, unused, uncut quantity of steel including serviceable materials returned by the contractor to BHEL store.

14.9.1.3 Wastage = Actual consumption – Theoretical consumption.

14.9.2 ~~Reinforcement Steel, Earthing~~ MS Rod/~~GI Flat~~, GI Gratings, ~~Foundation Bolts~~ and MS Rails Wastage:

14.9.2.1 Allowable Wastage: (+3%) of the theoretical consumption shall be considered as allowable wastage.

Wastage and scrap shall be as per actual weightment basis.		
Sl no	Reinforcement steel & MS earthing rod	Basis of issue & penal recovery
R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
R-2	Wastage limited to plus THREE percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.	Free
R-3	Wastage beyond THREE percent (+3%) of the theoretical consumption above (R-1).	Penal rate

14.10 Structural Steel (Rolled Sections and Plates etc) Consumption:

The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard. No extra shall payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

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14.10.1 Actual consumption = Issue – Surplus.

14.10.2 **Surplus = untempered, unused, uncut quantity of steel including serviceable materials returned by the contractor to BHEL store.**

14.10.3 Wastage = Actual consumption – Theoretical consumption.

14.11 Structural Steel Wastage:

Allowable wastage: + 4% (FOUR percent) of the theoretical consumption shall be considered. Wastage shall be considered as cut pieces and scrap material, measured as per actual weighment basis. Invisible wastage, if any, shall be considered to be included in the specified 4 % allowable wastage

Wastage and scrap shall be as per actual weighment basis.		
Sl no	Structural steel including SS plate	Basis of issue & penal recovery
S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.	Free
S-2	Wastage limited to plus four percent (+4%) of the aforesaid theoretical consumption (S-1) towards allowable wastage	Free
S-3	Wastage beyond four percent (4%) of the aforesaid theoretical consumption (S-1).	Penal rate

14.12 Reconciliation of Materials:

- The contractor shall submit a reconciliation statement of steel issued to the contractor with each RA Bill.
- At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available in the contractor custody at site.
- At the time of submission of bills, 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 reference drawings for actual material consumption to be used for the purpose of reconciliation shall be drawings prepared by the BHEL and drawings

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approved by BHEL for fabrication works and such other drawings approved by BHEL. This shall also include the bar bending schedule prepared by the contractor and approved by BHEL.

14.13 Recovery of Materials (Penal Rates):

If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly RA Bills as per following penal rates:

Sr No	Item	Penal rate (Rs)
P-1	Cement (OPC/ PPC/ PSC).	6,500 per MT
P-2	Reinforcement steel, earthing MS rod /GI Flat etc.	55,000 per MT
P-3	Chequered Plates, MS plates	60,000 per MT
P-4	MS Flats, beams, channel, angles, Pre Fabricated etc. (Rolled Sections)	80,000 per MT
P-5	Foundation Bolts /GI Gratings if any	90,000 per MT

- 14.14 Open land for storage purposes shall be provided by BHEL on free of cost/as available 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 works. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering. 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.

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Chapter-XV-Welding & Non-Destructive Testing

WELDING, AND NON-DESTRUCTIVE TESTING

The scope of the work will comprise of but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

- 15.1 All welders including tack welders, structural shall be tested and approved by BHEL Engineer before they are actually engaged on work even though they may possess a valid certificate. BHEL reserves the right to reject any welder if the welder's performance is not found to be satisfactory. The contractor shall maintain the records of qualification and performance of welders. BHEL Engineer will issue all the welders qualified for the work, an identity card. The welder will keep the same with him at work place at all times. He may be stopped from work if he is not found in possession of the same.
- 15.2 Engineer may stop any welder from the work if his performance is unsatisfactory for any technical reason or if there is a high percentage of rejection in the joints welded by him. The welders having passed qualification tests does not absolve the contractor of contractual obligation to continuously check the welder's performance.
- 15.3 Faulty welds caused by the poor workmanship shall be cut and re-welded at the contractor's expense. The Engineer prior to any repair being made shall approve the procedure for the repair of defective welds. After the repair has been carried out, the compliance shall be submitted to the quality engineer.
- 15.4 All expenses for testing of contractor's welders including destructive and Non- destructive tests conducted by BHEL at site or at laboratory shall have to be borne by the contractor only. Only BHEL approved electrodes and filler wire will be used. All electrodes shall be baked and dried in the electric electrode-drying oven to the required temperature for the period specified by the Engineer before these are used in erection work. All welders shall have electrodes drying portable oven at the work spot. The electrodes brought to the site will have valid manufacturing test certificate. The test certificate should have a co-relation with the lot number / batch number given on electrode packets. No electrodes will be used in the absence of above requirement. The thermostat and thermometer of electrode drying oven will be also calibrated and test certificate from Govt. approved / accredited test house traceable to National / International standards will be submitted to BHEL before putting the oven in use. The contractor shall also arrange periodical calibration for the same. Separate ovens shall be used for baking and holding.
- 15.5 All butt / fillet welds shall be subject to Non -Destructive testing as per the Drawing/Procedures/Welding Schedules/Documents at no additional cost.
- 15.6 The contractor shall also be equipped for carrying out other NDT like LPI /MPI / Hardness test etc. as required as per welding schedules / drawings within the finally accepted price / rates. Ultrasonic testing, wherever required, will be arranged by contractor within the quoted rate.
- 15.7 All charges towards testing of Welders for destructive and non-destructive test, testing and approval of welders for engaging in the erection work shall be borne by the contractor.

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Chapter-XVI-PAINTING

16. PAINTING

BHEL/Customer Specification for Shop & Field Painting with regard to surface preparation and final painting with colour codes / scheme for surface preparation and finish paints coating including primer coating for shop and field painting will be given at site at the time of painting work.

Contractor shall carry out surface preparation and touchup painting works as per BHEL/Customer specification and instruction of BHEL engineer at site.

Touch-up Painting: All structures / components shall be supplied from BHEL with finish coats of paint. Therefore final painting is not applicable in the scope of contractor. However touch up painting (wherever required), incidental to the work, shall be in the scope of the contractor, including supply of the required paints and primers and associated consumables.

Though the final painting is not there in the scope of the contractor, in case any shop painted structure/component is required to be repainted due to the reasons attributable to the contractor such as Mis-handling, damage during erection process, other reasons incidental to the work etc, such re-painting/finish painting of the components/structures shall be in the scope of the contractor including the supply of paints and primers along with all required consumables & deployment of tools e.g wire brush, paint brush, Spray M/c, cleaning agents etc.

16.1 Scope of Contractor/BHEL regarding Supply of Paint & Paint application

S No	DESCRIPTION	BIDDER	Supply of Paints	REMARKS
a)	Surface preparation	Yes		Whenever required
b)	Preservation painting	Yes	BIDDER	Wherever applicable
c)	Touch up painting	Yes	BIDDER	Wherever applicable
g)	Painting of welded surface	Yes	BIDDER	Wherever applicable
l)	Supply of scaffoldings, platforms, structures & ropes etc	Yes	BIDDER	
m)	Supply of tools e.g wire brush, paint brush, Spray M/c, cleaning agents etc	Yes	BIDDER	
n)	Supply of Other Consumables	Yes	BIDDER	

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Chapter-XVI-PAINTING

16.2 Primer Painting: (wherever applicable incidental to touchup painting & preventive painting)

a) After surface preparation, two coats of **epoxy resin based zinc primer** shall be applied. Dry film thickness of each coat shall be as per the recommendations of primer/paint manufacturer. Primer shall be applied by either spraying or bushing ensuring a continuous film without "holidays". Primer coat shall be immediately applied without any time lag after the surface preparation.

b) Any equipment shall be carefully examined and where ever the primer coat is damaged shall be recoated with primer. However over the field welds, bolts and nuts etc. two primer coats as per a) shall be applied.

16.3 Finish Painting (wherever applicable incidental to touchup painting & preventive painting)

a) After the primer coat has dried out, the surface shall be cleaned of dust without scratching or in any way damaging the primer coat. Over this, dry surface finish painting shall be carried out.

b) Finish painting shall be carried out in two coats. Dry film thickness of each coat shall be as per the recommendation of the primer/paint manufacturer. Minimum thickness including primer and paint coating shall be as per specification.

c) Paint shall be applied either by brushing or spraying. It shall be ensured that brush marks are a minimum and the requirements of workmanship are as specified in IS: 1477 (for site painting works on systems, structures and components).

d) Paint used shall be stirred frequently to keep the pigment in suspension. Paint shall be of ready mixed type in original sealed containers as packed by the paint manufacturer. Addition of thinners shall not be permitted.

e) No painting shall be done in frost/foggy weather or when the humidity is high enough to cause condensation on the surface to be painted. Paint shall not be applied when the temperature of the surface to be painted is 5° C or below.

16.4 Touch-up painting on damaged areas –

a) For coatings damaged up to metal surface

Surface preparation shall be carried out by manual cleaning. Minimum 6 inches adjoining area with existing coating shall be roughened by wire brushing, emery paper rubbing etc., for best adhesion of patch primer. Primer coat of touch-up primer has to be applied by brush immediately after the surface preparation.

Over this primer coat, finish coat and final finish coat shall be applied as covered above by brush within maximum seven (7) days of application of touch up primer.

16.5 Painting of welded areas / painting of areas exposed after removal of temporary supports / touch-up painting on damaged areas of employer's structures, where inter-connection, welding / modification etc. has been carried out by the bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XVI-PAINTING

Clean the surface to remove flux spatters and loose rust, loose coatings in the adjoining areas of weld seams by wire brush and emery paper.

(Painting procedure to be followed for touch-up painting on damaged areas.

16.6 Surface to be painted should be free of oil and grease. It should be removed by using suitable cleaning agents including permitted solvents. Surface cleaned by chemical agent, if required, shall be treated further as prescribed in use of such cleaning agents.

16.7 During the preparation of surface, if the shop coat is damage by chemical cleaning or by mechanical means, contractor shall repair the same free of cost.

16.8 Specified drying time shall be permitted from one to another coat.

16.9 This work requires working at higher altitudes from ground level to as high as 50 mtr and more. The work spread is also substantial involving substantial run of structures and piping. Contractor shall take sufficient precautions to avoid any accident and hazard in all respects. The ropes, ladders, scaffolding materials, clamps etc and climber used should be of standard quality for safe and smooth execution of work.

16.10 Contractor shall carry out the work in such a way that other erected equipment, structure, civil foundations and other property are not damaged. For damages in any of such cases due to lapses by Contractor, BHEL shall have the right to recover the cost of such damages from the Contractor.

16.11 Contractor shall take due care to cover/protect the equipment which are already painted while carrying out the painting of other adjacent equipment. If so happens, it shall be cleaned and repainted by the Contractor without any extra charges.

16.12 Touch up painting work shall be started after obtaining clearance from BHEL engineers and as per his instructions.

16.13 Acceptance of Final Painting for required thickness shall be as per the thickness measured by Elcometer by PVUNL/BHEL Engineer. Contractor shall have to carry out painting till the required thickness is achieved.

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Chapter-XVII: Estimated Bill Of Quantities (BOQ) / Weightage Factors

BOQ/WEIGHTAGE FACTORS

ST. NO	DESCRIPTION OF ITEM	UNIT	QTY (A)	Weightage/ Factor "X"
900	DOORS & WINDOWS: Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material (unless otherwise specified in BOQ/contract specification), equipment's, transportation, handling, preparation of working drawings etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
904	Providing and fixing single or double steel door shutters with 45mm the flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners , spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	238	0.002316771166
905	Providing and fixing single or double steel door shutters with 18 gauge M.S. sheets shutter presenting a flush surface on the outside and inside stiffened with semitubular edge and central stiffening rail which shall convey the lock including fixtures, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	44	0.000478979780
907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners , spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	16	0.000559992667
908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)			
a	Openable type	SQM	176	0.000617207539
b	fixed type	SQM	176	0.000396671182
911	Providing and fixing of door closers as per specification ,of approved make & quality all complete of following type :			

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a	Over head hydraulic door closures as per IS 3564	Each	18	0.000052754384
b	Floor mounted Hydraulic door closers as per IS 6315	Each	9	0.000043747489
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars ,paintings etc all complete as per specifications.	Kg	44	0.000009898064
913	Providing and fixing in position rolling shutter of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).			
a	Hand Operated	SQM	23	0.000081334991
b	Mechanically Operated	SQM	71	0.000340790450
c	Electrically operated	SQM	47	0.000245455247
914	Providing and fixing PVC doors (25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	35	0.000173955973
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			
a	4 mm thick clear sheet glass	SQM	52	0.000104297978
b	4 mm thick clear float glass	SQM	52	0.000105391437
c	5.5 mm thick clear float glass	SQM	53	0.000127029067
d	6 mm thick wired glass	SQM	53	0.000156780599
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	9	0.000036254449
f	4 mm thick ground glass	SQM	9	0.000023046878
g	6 mm thick tinted heat reflecting type float glass	SQM	9	0.000026433868
h	6 mm thick clear toughened safety glass	SQM	299	0.001042897199

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i	Two nos. 6 mm thick clear toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	9	0.000056557663
j	Two nos. 6 mm thick tinted toughened float glass hermetically sealed and separated by 12 mm thick air gap for thermal insulation (only single elevation area to be measured)	SQM	9	0.000058809304
k	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	9	0.000061155736
l	6 mm thick laminated glass	SQM	9	0.000022308926
m	8 mm thick clear toughened safety glass	SQM	17	0.000059295158
n	10 mm thick clear toughened safety glass	SQM	17	0.000074118870
o	12 mm thick toughened safety glass	SQM	9	0.000047087249
l(a)	composite double glazing, 24 mm thick, with one outer 6mm thick tinted heat-reflecting type toughened glass and one inner 6mm thick clear toughened glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).Outer glass of 6mm thickness shall have following technical characteristics: Solar factor 25% or less, U-value less than 2.268 W/ SQMK,VLT min 30%: The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	9	0.000091627212
l(b)	composite double glazing, 24 mm thick, with one outer 6mm thick tinted fire resistant type toughened glass and one inner 6mm thick plane fire resistant glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glass to be used should be from the manufacturers of glass like Glavebel (Belgium), Saint Gobain (France) or Fort (USA) Or equivalent. The glass should be free from distortion and thermal stress.	SQM	9	0.000091627212
l(c)	One outer 6mm thick tinted heat-reflecting type toughened glass and one inner 6mm thick plain float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).The glazing to be used in all exterior walls shall be of Saint Gobain or equivalent.The glazing to be used should comply to mentioned standards VLT (Visible Light Transmittance) $\geq 62\%$, SHGC/ SF (Solar Heat Gain Coefficient/ Solar Factor) $0.2 \leq 0.32$ and U- Value 1.2 TO 2.5 W/MSq K,The properties of performance glass shall be as per detail design values as approved by engineer incharge.	SQM	9	0.000091561255

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k(a)	One inner 6mm thick clear float glass and one outer 6mm thick reflective toughened glass hermetically sealed and separated by 12 mm thick gap for thermal insulation . Glass to be used shall be of make Saint Gobain(India),Asahi (India) or equivalent .Outer glass should have solar factor 25% or less, Maximum U-Value of 2.5 to 3.3W/SQMK, VLT min 30%, light reflection internal 10 to 15%, light reflection external 10 to 20%, shading coefficient (0.25-0.28).The properties of performance glass shall be as per detail design values. (only single elevation area to be measured).	SQM	9	0.000059284092
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	572	0.002375128698
918B	Providing and fixing steel louvered window with structural steel frame including verticals with 18G pressed steel louvers, painting etc. all complete for monitor portal of track hopper.	MT	13	0.002924490301
919	Providing and fixing 1 mm thk. MS sheet sliding shutters with frame and diagonal braces of 50X50X6 angle iron, 3 mm MS gusset plates at junction and corners, 25 mm dia pulley, 50X50X6 angle and T-iron guide at the top and bottom respectively including painting etc. all complete.	SQM	9	0.000055081758
920	Roof skylight structure for atrium with 6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges for sky light for approved shape like dome, pyramidal etc. Joints are properly sealed with sealant, screws with pvc cap, self tapping screws, epdm rubber gasket.etc all complete as per detailed drawing and specification.	SQM	9	0.000045166717
1500	ROOFING / SIDE CLADDING: Roofing / side cladding work including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
1502	Transportation of MS Deck sheet from BHEL Storage yard to erection site, erection and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 150mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyester paint of			

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	minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.			
a	Span Upto 1800mm	SQM	10374	0.007250935186
b	Span Exceeding 1800mm	SQM	6888	0.004814386116
1503	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	48	0.002574846911
ISG1504	Transportation of Cladding sheet from BHEL Storage yard to erection site and fixing External sheet of Permanent colour coated metal cladding with troughed M.S. sheets of minimum 0.6mm bare metal thickness of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250GD as per EN 10326 with zinc coating to class Z275/ aluminium zinc alloy coating to class AZ150 on both sides including fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete. The exposed face of the sheet shall be permanently coated with silicon modified polyester(SMP silicon content 30%-50%) paint of 40 micron minimum DFT or super polyester paint of minimum 20 micron DFT on exposed surface over primer coat of minimum 5 micron(nominal) and minum 10 micron (nominal) SMP or super polyester paint over primer coat of minum 5 micron (nominal) on other face. SMP and polyester paint system shall be of idustrial finish of product type 4 of AS/NZS2728. Sheets shall b eprovided by the BHEL	SQM	83637	0.054791475276

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B1505	Design, supply & erection of prefabricated permanent colour coated sandwiched insulated metal cladding of approved color comprising of top sheet as troughed permanently colour coated sheet and bottom sheet as plain permanently colour coated with 50 mm thick insulation sandwiched between the two sheets. Each sheet shall be of minimum 0.6 mm bare metal thickness of grade G250 as per AS1397/grade SS255 as per ASTM A653M/ grade S250 GD as per EN 10326 with zinc coating to class Z275/ aluminium zinc alloy coating to class AZ150. The exposed face of the sheet to be permanently color coated with at least 40 micron DFT silicon modified polyester paint (SMP with silicon content of 30% to 50%) or polyester paint of minimum 20 microns (nominal) SMP or polyester paint on one side (exposed face) , over 5 micron (nominal) primer coat and minimum 10 micron (nominal) SMP or polyester paint over 5 micron (nominal) primer coat on other side. SMP and polyester paint shall conform to product type 4 of AS/NZS 2728. The sheets shall be of approved profile and shall have such section modulus and moment of inertia per metre width that deflection of sheets is limited to span/250 under design wind pressure for two span conditions. No increase in allowable stresses under wind load condition is allowed. The prefabricated insulated Metal sandwich panels shall be fixed with structural members below using special coated fastener conforming to corrosion resistant class 3 of AS3566 and tested for 1000 hours salt spray test, including flashings complete as per specification. The insulation shall be of bonded mineral wool of minimum thickness 50mm conforming to IS:8183, having a density of 32 Kg/cu.m. for glass wool & 48 Kg/cu.m. for rock wool and is included in this item. Z spacer at least 2 mm thick galvanised steel sheet of grade 350 as per IS 277.	SQM	3630	0.025639478230
1513	Providing and fixing insulation of polystyrene block of 50 mm nominal thickness for under deck insulation including application of glue and tying with lacing wire as per manufacturer's recommendations.	SQM	9	0.000007549882
1514	Providing and installing under deck insulation with resin bonded rock wool 50 mm nominal thickness conforming to IS 8183 having a density of 48kg/cum using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	9	0.000008564256
ISG1514	Providing and installing under deck insulation with 50mm thk. mineral wool insulation with 0.05 mm thick aluminium foil & 0.6 mm x 25mm mesh wire netting and shall be fixed to the ceiling with 2 mm wire ties as per IS8183	SQM	352	0.000284920360

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1515	Providing and installing min 30 mm thick under deck insulation (density 32 kg/cum) polyisocyanurate/rigid phenolic foam (fire retardant and non toxic) using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	9	0.000010142078
1516	Providing and fixing non metal opaque PVC sheet similar to ONDEX roofing or equivalent including all fixing accessories.	SQM	9	0.000018486754
1517	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.	SQM	9	0.000010539475
ISG1518	Providing and erecting with 3mm thick embossed clear translucent polycarbonate sheet, fire retardant and UV resistant polycarbonate clean sheet of approved make. Polycarbonate sheet shall be erected along with matching profile of corrugated cladding sheet so as to have a watertight lapping arrangement .	SQM	5170	0.007508954108
1518	Supply & fixing FRP (fibre reinforced plastic) sheets 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm .	SQM	9	0.000015288851
1700	RAIN WATER DOWN TAKE PIPES: Rain water down take pipes at all level including all labour, material (unless otherwise specified in BOQ/contract specification), transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc as per specification, drawings and as directed by engineer - in - charge.			
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
a	100 mm Dia	RM	4	0.000007501529
b	150 mm Dia	RM	92	0.000266152286
c	200 mm Dia	RM	4	0.000018123017
1708	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of heavy duty all complete for following diameters.			
a	100 mm Dia	RM	4	0.000008754521
b	150 mm Dia	RM	4	0.000013085564
c	200 mm Dia	RM	4	0.000023126810
1709	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			

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a	110 mm Dia	RM	4	0.000003363900
b	160 mm Dia	RM	4	0.000005878428
c	200 mm Dia	RM	4	0.000008510654
1710	Providing and fixing galvanised ERW steel down take pipes of medium duty as per specification of following diameters.			
a	200 mm Dia	RM	4	0.000018123017
b	250 mm Dia	RM	4	0.000020830959
c	273mm OD and 4mm thick	RM	1452	0.009016969602
2300	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.			
A2301	Erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, tubular sections confirming to IS:4923, chequered plate conforming to IS: 3052, mild steel rounds, mild steel flats, sag rod with nuts & bolts in side runner & purlin , monorails, stays, safety chains, ladders, MS grating(For Hopper made by plates) etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc ,including collection, unloading of fabricated structure, storing stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), payment breakup: Pre Assembly:-20%, Erection:-40%, Alignment, bolt tightening/welding:-30%,Completion of structure:-10%	MT	26015	0.791531774896
2306	Providing, Fabrication Transportation,laying and clamping of crane rails over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.	MT	4	0.000789793226
A2306	laying and clamping of crane rails over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.	MT	4	0.000118468973

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2307	Transportation erection alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.			
a	Minimum galvanisation of 610 g/sqm	MT	492	0.012144840828
b	Minimum galvanisation of 900 g/sqm	MT	5	0.000134481966
2308	Supplying, fabrication, erection and alignment of factory made galvanised welded grating units with mild steel conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	7	0.000884362875
2309	Extra over above ST NO. 2301 for finishing the grating units/bolts/inserts with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.	MT	8	0.000203179483
2310	Extra over above ST NO. 2301 / 2308 for finishing the grating units/bolts/inserts with Cold galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of primer all complete.	MT	8	0.000203179483
2311	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.	KG	13200	0.003717546669
2312	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	KG	66000	0.029116933849
2313	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	26	0.000453128124

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2314	Addition to, alterations in and/or modification of "Erection Marks" including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:			
a	In erected position	MT	26	0.000937281947
b	In fabrication yard	MT	26	0.000768654690
2315	Re-erection of dismantled fabricated structural steel members including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	26	0.000656743672
2316	Supply, fabrication and erection of minimum 3.15 mm thick stainless steel liner of grade SS:409M on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc.all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper)	MT	26	0.012976517707
2317	Supply, fabrication and erection of minimum 4 mm thick stainless steel liner of grade AISI-304; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc.all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper)	MT	6	0.002994581009
2318	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ± 50 mm including all taxes, duties, transportation, installation, drilling, bolting,			

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	erecting, aligning etc all complete for following vertical loads.			
a	20 Tons	EACH	3	0.000074262273
b	25 Tons	EACH	3	0.000083944036
c	40 Tons	EACH	3	0.000090402705
d	50 Tons	EACH	4	0.000129148500
e	60 Tons	EACH	4	0.000137751663
f	100 Tons	EACH	4	0.000154966460
g	130 Tons	EACH	1	0.000043047413
h	200 Tons	EACH	1	0.000047351094
ISG2318	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ± 150 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.			
a	20 Tons	EACH	3	0.000064906538
b	25 Tons	EACH	9	0.000206173698
c	40 Tons	EACH	9	0.000314995875
d	50 Tons	EACH	3	0.000119312102
e	60 Tons	EACH	2	0.000089087402
f	100 Tons	EACH	1	0.000050907082
g	130 Tons	EACH	1	0.000063633843
h	200 Tons	EACH	1	0.000079543224
2319	Providing and fixing flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	14	0.000069935557
2320	Supply, fabrication and fixing of stainless steel pipe hand railing conforming to SS 409 of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete..	MT	3	0.001818385436
2321	Supply, fabrication and fixing of MS pipe hand railing of 32 mm/40 mm dia including transportation, loading/unloading etc. all complete. Payments terms - a) on receipt of materials at site - 65%; b) Erection & fixing - 35%;	MT	18	0.002720558080
A2321	fixing of MS pipe hand railing of 32 mm/40 mm dia.	MT	18	0.000952195295

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2322	Supply, fabrication and fixing of GI pipe hand railing (900 mm high) of 32 mm/40 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete.	MT	11	0.002036477494
A2322	fixing of GI pipe hand railing of 32 mm/40 mm dia.	MT	11	0.000712767163
2328	Supply, fixing lightning arrester and air terminal over roof of power house building, pump house and other structures including all materials, labour, electrodes etc complete (all materials to be supplied by the contractor).	NO	4	0.000025464718
G2302	Fabrication of structural steel of grade E250/E350 in Rolled/built up section/combination of both at site conforming to IS:2062, in structural members including blast cleaning, providing & applying primer, providing and applying intermediate, finish coat of paint (cost of blast cleaning, providing & applying primer, intermediate coat as per specification is included in this item. Finish coat of paint shall be paid separately as per item no A2304), visual inspection, non-destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, protection against damage in transit, stability of structures, temporary structures (weight of temporary structures notpayable), etc. all complete as per specification and drawing. (BHEL will supply Structural Steel at site free of cost as per TCC)	MT	100	0.004625494663
B2303	Touch painting of the erected structures	Sqm	2000.0000	0.002258840382

Note:

1. The quantity indicated in the BOQ is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer above Unit rate of individual items of BOQ.

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Instructions to the Bidders

1. **Bidders shall quote Total Lump-sum Price for the entire scope of work in Rupees only in VOL II PRICE BID at BHEL E-procurement Portal.** Any other entry elsewhere in the offer of the bidder shall be treated as Null and Void.
2. BHEL has pre-fixed the Weightages %/ Factors as detailed above in this chapter for deriving the Unit Rates of individual items. Considering these BHEL pre-fixed the Weightages %/ Factors w.r.t the total price quoted by the bidder for Package A in VOL II Price bid; unit rate of individual items shall be derived. Unit Rate/Item Rate thus arrived shall be rounded down to two decimal places.
3. Based on the quantities of individual item and the item rates arrived in Sl No 2 above, the total amount for individual items shall be derived by multiplying them. Total amount thus derived shall be rounded off zero decimal places.
4. **Grand Total amount for the work shall be derived by BHEL by summing up respective total amounts. *The Grand total amount thus derived shall be considered for award of the work.***
5. **Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per Sl No.2 above.**
6. For the convenience of bidders, BHEL has issued an **Excel Sheet For Calculation Purpose Only-2403** with all the requisite formulae as described above. ***However the referred excel sheet shall not form part of contract document. Further, this sheet should not be uploaded at the e-Portal.***