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NOTICE INVITING TENDER

(Document No PS:MSX:NIT)

NIT NO.: BHEL/ NR/SCT/DADRI FGD/
CHIMNEY/1099

Bharat Heavy Electricals Limited



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NOTICE INVITING E-TENDER (NIT)
BIDDER TO SUBMIT OFFERS ON PORTAL
<https://bhel.abcprocure.com>

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To

Dear Sir/Madam

Sub : NOTICE INVITING E-TENDER

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

1. Salient Features of NIT

SL. NO	ISSUE	DESCRIPTION	
i	TENDER NUMBER	BHEL/ NR/SCT/DADRI FGD /CHIMNEY/1099	
ii	Broad Scope of job	Construction and Development of 150 m tall Twin Flue, RCC Chimney including Supplying and Installation of Electrical items and Installation of Borosilicate Glass Lining for DADRI FGD at 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P	
iii	DETAILS OF TENDER DOCUMENT		
a	Volume-IA	<i>NIT and Tender Terms & Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i>	<i>Applicable</i>
b	Volume-IB	<i>Special Conditions of Contract (SCC)</i>	<i>Applicable</i>
c	Volume-IC	<i>General Conditions of Contract (GCC)</i>	<i>Applicable</i>
d	Volume-ID	<i>Forms and Procedures</i>	<i>Applicable</i>
e	Volume-II	<i>Price Schedule (Absolute value).</i>	<i>Applicable</i>
iv	Issue of Tender Documents	From BHEL website (www.bhel.com) and https://bhel.abcprocure.com Tender documents will be available at website till due date of submission.	<i>Applicable</i>
v	DUE DATE & TIME OF OFFER SUBMISSION	Date : 01/05/2018, Time : 1500 HRS Place : on https://bhel.abcprocure.com	<i>Applicable</i>
vi	OPENING OF TENDER	At due date / time Date : 01/05/2018, Time : 1530 HRS Notes: (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	<i>Applicable</i>

		extended to the next working day. (2) Bidder may depute representative to witness the opening of tender. However it being an e-tender it shall be opened online	
vii	EMD AMOUNT	Rs 29,40,000/-	Applicable
viii	COST OF TENDER	Rs 2000/-.	Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	Five days before bid submission due date. Along with soft version also, addressing to contact address given below 1) Ms. Susmita Basu, Sr. DGM /SCT Bharat Heavy Electricals Limited Power Sector Northern Region Plot No. 25, Sector-16A, Distt. Gautam Budh Nagar, NOIDA-201301(UP) Tel No. 0120-2416262, Fax- 0120-2416528 Email – susmitabasu@bhel.in 2) Mr. Deshraj Yadav, Sr. Engr. / SCT Bharat Heavy Electricals Limited Power Sector Northern Region Plot No. 25, Sector-16A, Distt. Gautam Budh Nagar, NOIDA-201301(UP) Tel No. 0120-2416261, Fax- 0120-2416528 Email - deshraj@bhel.in	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)		Not applicable.
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	Shri D.R.S. Chaudhary E-1/164 Arera Colony Bhopal 462016 Dilip.chaudhary@icloud.com	Applicable
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com -->Tender Notifications →View Corrigendums) & portal https://bhel.abcprocure.com and not in the newspapers. Bidders to keep themselves updated with all such information	
xiii	Tender submission	on portal https://bhel.abcprocure.com	

2. 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, **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. Unless specifically stated otherwise, bidder shall remit cost of tender and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Power Sector Regional HQ at Noida issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office as stated above against sl no iv of 1, on any working day;

and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer. Sale of tender Documents shall not take place on National Holidays, holidays declared by Central or State Governments and BHEL PS HQ at Noida, Sundays and second/ last Saturdays.

As this tender is an E-Tender and no paper bids will be accepted therefore the scanned copy of the Demand Draft or the Cash Receipt issued by BHEL PSNR should be uploaded in the E procurement portal. Hard Copy of the demand draft should reach BHEL PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard.

4. Unless specifically stated otherwise, bidder shall deposit EMD through Cash Deposit (as permissible under the extant Income Tax Act) (before tender opening), Electronic Fund Transfer credited in BHEL account (before Tender Opening) or Banker's Cheque/ Demand Draft/ Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Noida (along with offer).

'One Time EMD' will not be considered for this tender. All the bidders who have 'One Time EMD' with BHEL and want to participate in this tender, would also submit the requisite amount of EMD as mentioned in Clause No. 1, Salient Features of NIT, Sl. No. (vii) above.

However, the One Time EMD can be adjusted against the EMD applicable against this tender on specific request of bidder.

For Electronic Fund Transfer the details are as below:-

a) **Name of the Beneficiary** -: Bharat Heavy Electricals Limited

b) **Bank Particulars**

i).	Bank Name -:	STATE BANK OF INDIA
ii).	Bank Telephone No.(with STD code)-:	011-23352180
iii).	Branch Address-:	CAG BRANCH, NEW DELHI
iv).	Bank Fax No. (with STD code) -:	011-23353101
v).	Branch Code -:	SBIN0009996
vi).	9 Digit MICR Code of the Bank Branch -:	110002201
vii).	Bank Account Number -:	10813608647
viii).	Bank Account Type -:	CASH CREDIT
ix).	11 Digit IFSC Code of Beneficiary Branch-:	SBIN0009996

(Note:- In case of E-Tenders, no paper bids shall be accepted, therefore, the scanned copy of the Banker's Cheque/ Demand Draft/ Pay Order/ Details of payment made through Electronic Fund Transfer should be uploaded in the E-Procurement Portal and hard copy of the same should reach BHEL-PSNR HQ Noida before the due date and time of bid submission. BHEL shall not be responsible for postal or any other delays in this regard.)

For other details please refer General Conditions of Contract.

5. **Procedure for Submission of Tenders**: This is an E-tender floated online through our E-Procurement Site <https://bhel.abcprocure.com> . The bidder should respond by submitting their offer online only in our e-Procurement platform at <https://bhel.abcprocure.com>. Offers are invited in two-parts only.

Documents Comprising the e-Tender

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

a. **Technical Tender (UN priced Tender)**

All Technical details (eg. 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. Tender Cost and Earnest money Deposit (EMD) furnished in accordance with NIT Clause 3.0 & 4.0.
- 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 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.
- vi. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, same shall not be considered.

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-:

M/s AbcProcure, Ahmedabad

A-202/208, Wall Street-II, Opp. Orient Club, Nr. Gujarat College,

Ellis Bridge, Ahmedabad-380006

The contact details of the service provider are given below:

Name	Contact Nos.	e-mail ID	Role	Location
Swapnil Hamilton	+91 79 40270549	swapnil.h@eptl.in	Support Executive	HO – Ahmedabad
Hardik Oza	+91 79 40270560	Hardik.oza@eptl.in	Support Executive	HO – Ahmedabad
Ankur Bhatt	+91 79 40270590	ankur.bhatt@eptl.in	Support Executive	HO – Ahmedabad
Prashant Rajyaguru	+91 79 40270545 / 9016859416	prashant@eptl.in	Ast. Manager – Implementation & Support	HO – Ahmedabad
Dharam Rathod	+91 79 40270596 / 9374519754	dharam@eptl.in	Manager – Implementation & Support	HO – Ahmedabad
Pradip Parmar	+91 79 40270532 / 9328657215	pradip@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad
Devang Patel	+91 79 40270576 / 99983 05442	devang@eptl.in	Sr Manager – Implementation & Support	HO – Ahmedabad

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.

1. The contact details of the DSC Certifying Authority as given below

1	GNFC	www.ncodesolutions.com
2	e-Mudhra	http://www.e-Mudhra.com
3	Safescrypt	www.safescrypt.com

Vendors are also requested to go through seller manual available on <https://bhel.abcprocure.com>

6. **Not Used.**
7. 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. BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).
9. **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:

- 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.

- 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 -1))

- 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. ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots S_N$ ')
- d) **Overall Performance Rating ' R_{BHEL} ' for the Similar Package/Packages** (under execution/ executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL

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

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

- 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
		(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	
(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) $= T_T$

Sl. No.	Item Description	Details for all Regions							Total
		(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	
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

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:

- 'Period of Assessment' i.e. 6 months preceding and including the cut-off month
- 12 months preceding and including the cut-off month
- 24 months preceding and including the cut-off month
- 36 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 ≤ 65	0.4
3	> 65 and ≤ 70	0.35
4	> 70 and ≤ 75	0.25
5	> 75 and < 80	0.2
6	≥ 80	NA

III. 'Assessment of Capacity of Bidder':

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

Max number of packages P_{Max} = (R_{BHEL} - 60) divided by corresponding value of 'L', i.e. (R_{BHEL} - 60)/L

Note:

- 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
- For R_{BHEL} = 60, P_{Max} = '1'
- For R_{BHEL} ≥ 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)

Table-1

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

- iii). Bidders who have not been evaluated for at least six package months in the last 36 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 vendors has been tagged as First Timer or availability of 6 evaluation scores within last 36 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). In the unlikely event of all bidders shortlisted against Technical and Financial Qualification criteria not meeting the criteria on 'Assessment of Capacity of Bidders' detailed above, OR leads to a single tender response on applying the criteria of 'Assessment of Capacity of Bidders' OR due to non-approval by Customer, then BHEL at its discretion reserves the right to consider the further processing of the Tender based on the **Overall Performance Rating 'R_{BHEL}'** only, starting from the upper band.
- v). 'Under execution' shall mean works in progress as per the following:
- Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
 - Up to Steam Blowing in case of Boiler/ESP/Piping Packages
 - 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 in CL 9 above is applicable to prime bidder and Consortium partner (or Technical tie up partner) for their respective scope of work.
10. 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. For any clarification on the tender document, the bidder may seek the same over 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. 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. 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. Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
 15. 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 Clause No. 1, Salient Features of NIT, Sl. No. (xi) above.

15a. **Integrity Pact (IP)**

- i) 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. A panel of Independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.

The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial 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. Details of IEM for this tender is given at point 1(xi) above.

- ii) Please refer Section-8 of the IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.

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.

For all clarifications/issues related to the tender, contact details are as per **Clause No. 1, Salient Features of NIT, Sl. No. (ix) above.**

16. 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. In case BHEL decides on a 'Public Opening', the date & time of opening of the PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorised representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders-
18. 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. (a) BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.
- (b) Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).
- (c) The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.**

- (d) If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).
- (e) If reverse auction process is unsuccessful, sealed envelope price bids of all the techno-commercially qualified bidders shall be opened and the tender shall be processed accordingly. However, the envelope sealed bid(s) of techno-commercially acceptable bidder(s) who had agreed to participate in the RA and had failed to submit the online sealed bid shall not be opened.
20. On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
21. 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. The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
23. **Consortium Bidding (or Technical Tie up) - Not Applicable.**
24. The bidder shall 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. The bidder may have to produce original document for verification if so decided by BHEL.
26. It may please be noted that guidelines/rules in respect of Suspension of Business dealings', 'Vendor evaluation format', 'Quality, Safety & HSE guidelines', milestone/ completion certificate, etc may undergo change from time to time and the latest one shall be followed. The abridge version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on www.bhel.com on "**supplier registration page**".
- 27.0 The offers of the bidders who are on the banned/ hold list as 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.
- 27.1 Integrity commitment, performance of the contract and punitive action thereof:
- 27.1.1 **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.
- 27.1.2 **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.

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.

28.0 Not Applicable.

29.0 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.

30.0 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 (Consisting of TCC, Section - C and Section - D)
- e. Special Conditions of Contract (SCC) – Volume – 1B
- f. General Conditions of Contract (GCC) – Volume – 1C
- g. Forms and Procedures – Volume – 1D

for BHARAT HEAVY ELECTRICALS LTD
(SCT)

Enclosure:-

- (i) Annexure-1: Pre Qualifying criteria.
- (ii) Annexure-2: Check List.
- (iii) Annexure-3: Authorization of representative who will participate in the online Reverse Auction Process
- (iv) Annexure-4: Feedback form
- (v) Annexure-5: Integrity Pact
- (vi) Other Tender documents as per this NIT.

ANNEXURE - 1**PRE QUALIFYING REQUIREMENTS**

JOB	Construction and Development of 150 mtrs tall Twin Flue, RCC Chimney including Supplying and Installation of Electrical items and Installation of Borosilicate Glass Lining for DADRI FGD at 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P
TENDER NO.	BHEL/ NR/SCT/DADRI FGD /CHIMNEY/1099

Sl. No.	Name and Description of qualifying criteria	Bidders claim in respect of fulfilling the PQR Criteria
A	Submission of Integrity Pact duly signed.	Applicable
B	Assessment of Capacity of Bidder to execute the work as per sl. no. 9.0 of NIT.	Applicable
C	TECHNICAL CRITERIA <u>Bidder who wish to participate should have experience as follows:</u>	
C-1	Execution of one RCC Chimney of at least 120 meters height in any one of running/completed contract.	Applicable
C-2	Bidder should have executed similar works for any one of the following in the last seven years from latest date of bid submission: One (1) work of value not less than Rs. 1552 Lakhs. OR Two (2) works each of value not less than Rs. 970 Lakhs. OR Three (3) works each of value not less than Rs. 776 Lakhs.	Applicable
D	FINANCIAL CRITERIA	
D-1	TURNOVER Tenderers should have an average annual turnover minimum of INR 582 Lakhs of last three Financial Years (2014-2015, 2015-2016, 2016-17). Bidders shall submit audited annual accounts (balance sheets and profit & loss account) in support of this. 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.	Applicable
D-2	NETWORTH 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 'D-1' above. Net worth = Paid up share capital* + Reserves (* : Share Capital OR Partnership Capital OR Proprietor Capital as the case may be)	Applicable
D-3	PROFIT Bidder must have earned profit in any one of the three financial years as applicable in the last three financial years as furnished for 'D-1' above. Note:- PROFIT shall be PBT earned during any one year of last three	Applicable

	financial years as in 'D-1' above	
E	APPROVAL OF CUSTOMER	Applicable
F	Consortium criteria	Not Applicable

Explanatory Notes:

1. Time period for achievement of the Qualification Requirements is in the last 7 years ending on the 'latest date of Bid Submission' of Tender.
2. For sl. no. 'C.1' above, 'Execution' means casting of RCC shell of at least 120 mtrs.
3. For sl. no. 'C.2' above, 'Executed' means the bidder should have achieved this criteria, even if the total contract has not been completed or closed. Actual executed value shall be considered, irrespective of completion status of contract (s) under consideration.
4. For sl. no 'C.2' above, the word 'Similar Works' means "Piling and / or Civil and / or Structure and / or Chimney and /or Cooling Tower works".
5. For evaluation of PQR, the credentials of the bidder alone, and not that of the Group Company shall be considered.
6. Relevant documents, meeting above requirements at sl. No. (C) & (D) shall be submitted by bidders.
7. For sl.no. 'C.2' above 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-

$$P = \left\{ R + 0.425 \times R \times \frac{(X_N - X_0)}{X_0} + 0.425 \times R \times \frac{(Y_N - Y_0)}{Y_0} \right\}$$

Where

P = Updated value of work

R = Value of executed work

X_N = All India Avg. Consumer Price index for industrial workers for the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 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 the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 shall be

considered).

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

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.

CHECK LIST**ANNEXURE - 2****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:	
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	YES/NO
8	Copy of PAN Card	Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable	YES/NO
10	Integrity Pact	Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable	YES/NO
12	Declaration by Authorised Signatory of Bidder (regarding authenticity of submitted docs)	Applicable	YES/NO
13	No Deviation Certificate	Applicable	YES/NO
14	Declaration confirming knowledge about Site Conditions	Applicable	YES/NO
15	Declaration for relation in BHEL	Applicable	YES/NO
16	Non Disclosure Certificate	Applicable	YES/NO
17	Bank Account Details for E-Payment	Applicable	YES/NO
18	Capacity Evaluation of Bidder for current Tender	Applicable	YES/NO
19	Tie Ups/Consortium Agreement are submitted as per format	Not Applicable	YES/NO
20	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable	YES/NO
21	Analysis of Unit rates	Applicable	YES/NO

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

DATE :

AUTHORISED SIGNATORY (With Name, Designation and Company seal)

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

1	NAME & DESIGNATION OF OFFICIAL	
2	POSTAL ADDRESS (COMPLETE)	
3	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
4	FAX NO.	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

Feedback Form: From where did you get information reg. this tender

1	NEWSPAPER ADVERTISEMENT (NAME)	
2	BHEL WEBISTE (TENDER NOTIFICATION)	
3	CENTRAL PUBLIC PROCUREMENT PORTAL OF GOVERNMENT OF INDIA (CPP PORTAL)	
4	EMAIL COMMUNICATION FROM BHEL	
5	ANY OTHER SOURCE	

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 or 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.

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)/ Contractor(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 IPC/ PC 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 The Bidder(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 exclusion 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 the 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 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.

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 this 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 Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 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 Subcontractor, 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)/ Contractor(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) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings 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 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC 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.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as 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.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder 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) _____

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I : Project Information

NCTPP Dadri FGD (2X490 MW)

NATIONAL THERMAL POWER CORPORATION (NTPC) has entrusted BHEL an EPC contract to setup Flue Gas Desulphurization (FGD) System Package for NCTPP, DADRI Stage-II (2X490 MW)

Sl. No.	Title	Description
1	Owner	NATIONAL THERMAL POWER CORPORATION (NTPC)
2	Project Title	NATIONAL CAPITAL THERMAL POWER PROJECT (NCTPP)
3	Project Site Location	Dadri, Gautam Buddh Nagar, Uttar Pradesh
4	Nearest Railway Station	Dadri (8.5 Km.)
5	Nearest Airport	Delhi (70 Km.)
6	Nearest Highway	National Highway- 3 & 24
7	Nearest Water Body	Upper Ganga Canal system
8	Basic Wind Speed	47 meters/second

The Nearest Town, Dadri is about 7 Km from site and is easily accessible by Road/ Railway.

Note: - The bidder is advised to visit and examine the site of WORKS and its surroundings and obtain for himself on his own responsibility all information that may be necessary for preparing the bid and entering into the CONTRACT. All costs for and associated with site visits shall be borne by the bidder.

INSTRUCTIONS TO TENDERERS

The Tenderer are advised to physically visit the site and fully acquaint themselves with site conditions, transportation routes, various distances and the fact that other contractors would be working in this area and their structures are to be protected. The material brought and stacked for construction should not make hindrance to other contractors. **Necessary precaution and arrangements including sprinkling of water during work as acceptable to BHEL for safety & security for the above have to be made by the contractor. No claim will be entertained by BHEL on ground of lack of knowledge and the contractor's rates shall be deemed to have taken this into account.**

The contractor, in the event of this work awarded to him, shall establish an office at site and keep posted an authorized, responsible officer with valid Power of Attorney for the purpose of the contract. Any order or instructions of the 'Engineer' or his duly authorized representative, communicated to the contractor's representative at site office will be deemed to have been communicated to the contractor at his legal address.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - II: Scope of Works

2.0	GENERAL SCOPE OF WORK
2.1	Scope of this tender covers works for “Construction and Development of 150 mtrs tall Twin Flue, RCC Chimney including Supplying and Installation of Electrical items and Installation of Borosilicate Glass Lining for DADRI FGD AT 2X490 MW NCTPP DADRI, GAUTAM BUDH NAGAR, U.P.
2.2	The scope of work is as follows: A. Construction of 1 number 150 meter high reinforced concrete twin flue steel lined chimney and other incidentals as detailed in the specification in the tender document including providing all labour, materials (except those which are specifically mentioned to be issued by BHEL as Free of Cost (FOC) Items), consumables, equipment, temporary works, temporary storage sheds, temporary colony for labour and staff, temporary site offices, construction plants, transportation/handling and all incidental items not shown or specified but reasonably implied or necessary for the completion of subject scope, all in strict accordance with the specifications including revisions and amendments thereto as may be required during the execution of work. B. Supply including design, receipt, unloading, erection, testing and commissioning of stack elevator and electrical equipments; allied items, cabling, earthing, spares etc. are also under the scope of this of work. The complete works have to be carried out by providing all labour, supervision, materials, scaffolding, power, fuel, construction equipments, tools & plants, inspection, measuring, testing instruments, supplies, transportation, storage, and all incidental items not herein specifically mentioned but reasonably or found required for the successful completion of work including contractor’s and where necessary manufacturer’s expert supervision in strict compliance with the requirement of this specification and approved construction drawing. C. Installation of Borosilicate Glass Lining inside MS Flue Cans, including surface preparation, application of primer, adhesive etc. as per the technical specifications and approved erection procedure under the expert supervision of Borosilicate Glass Lining manufacturer /supplier. The complete works have to be carried out by providing all labour, supervision, materials, scaffolding, power, fuel, construction equipment, tools & plants, inspection, measuring, testing instruments, supplies, transportation, storage, and all incidental items not herein specifically mentioned but reasonably or found required for the successful completion of work. Borosilicate Glass Lining Materials, Primer, Adhesive (suitable fixing materials) and Expert Supervision of Manufacturer shall be provided by BHEL as Free of Cost (FOC) Items.
2.2.1	The bidder’s scope shall include excavation in soil and rock (if any with/without blasting as per the site conditions), dewatering, dressing to required profile, sheet piling or shoring/strutting, backfilling around completed structures and plinth filling, plinth protection, disposal of surplus earth and rock, concreting including Reinforcement and Formwork, Masonry work, Plastering, Painting, Flooring, Acid and

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	<p>Alkali resistant lining, Installation of borosilicate lining, Doors/Windows, Ventilators, Fire Proof Doors, Insulation, Roof Water Proofing, Dismantling of existing structures (below ground and above ground- RCC, Brick Works, Sheeting, Structural steel and Other facilities), RCC and Brick/ Block masonry and Steel Structures, fabrication and erection of all structural steel and miscellaneous steel (i.e. steel stair case, cable/duct/pipe supports, ladders, walkways, railing, Chequered plate/grating floor, inserts, anchor bolts, etc.), paving, Embedment, Earthing, Gravel filling, Precast covers, Expansion joints, Rain water pipe, Insulation, Gates/Valves, Water proofing of underground structures, Anti-weed and Anti-Termite treatment, Trenches, Final grading and site clearance before handing over to Owner and other auxiliary items of work, etc. all complete including supply of all materials (except those which are specifically mentioned to be issued by BHEL as Free of Cost (FOC) Items), consumables, labor, Tools and plants, transportation and storage, Sample Testing etc. all complete as per BOQ, specifications and drawings for proper and successful execution of the job for FGD at 2X490 MW NCTPP at Dadri, Gautam Buddh Nagar, U.P.</p>
2.2.3	<p>Cement and Reinforcement Steel Supply: Cement and Reinforcement Steel required for the tender scope shall be procured by BHEL and issued to contractor as free of cost (FOC) Item.</p> <p>However unloading, handling / storage of Cement and Reinforcement steel procured by BHEL for this tender scope, at site, inside BHEL Stores / Contractor's Stores and further transportation from Stores to work area will be in the scope of contractor. No Extra payment shall be made for this work.</p>
2.2.5	<p>Fabricated Structure Steel Supply: Structural Steel required for the tender scope shall be procured by BHEL and issued to contractor as free of cost (FOC) Item, except for those items wherever specifically mentioned in contractor's scope in BOQ.</p> <p>All steel structures shall be fabricated in factory, transported and erected at site. All factory fabricated structures shall have bolted field connections.</p> <p>Silo with hopper & Chimney flue liners can either be fabricated at factory in segments, transported and welded at site before erection or fabricated at site. For Chimney flue liners, to prevent flue gas leakages, the applicable field joints shall necessarily be welded.</p> <p>Structural Steel shall be fabricated at a suitable fabrication shop, outside the plant premises. BHEL will visit the fabrication shop of Contractor to examine its suitability for the scope of work involved. However, contractor's fabrication shop shall be adequately equipped to handle the scope of work involved within the given time schedule. Any modifications / alterations as required to carry out the works shall be done by contractor at his own cost. No claim / compensation for delay in works on this account will be admitted.</p> <p>Contractor shall designate separate areas inside its fabrication shop for storage of Raw Materials as well as fabricated materials for this tender's scope and materials supplied for this work shall solely be utilized for this tender's purpose only. Safety, Watch and Ward, Insurance of the materials procured, fabricated and stored inside fabrication</p>

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Chapter - II: Scope of Works

	<p>shop and transit insurance shall be the responsibility of the contractor. No claims / compensation on account of damage / theft of materials which is in the custody of contractor shall be permitted.</p> <p>Contractor shall give due notice in advance to BHEL for Stage Inspection of the works being carried out at its fabrication shop as per the approved FQP. However BHEL Engineer shall be entitled to visit the Contractor's Fabrication shop at any feasible time during the currency of contract to examine the progress and quality of work. Contractor shall always maintain all such records and provide facilities / equipment / MMEs as required by BHEL's Engineer for inspection of works within the quoted rates. Fabricated Structural Steel shall be dispatched from the shop only after getting the due clearance from BHEL /Customer.</p> <p>Transportation of fabricated structure steel / Raw Structure Steel from shop to site, Unloading, Handling / storage, at site, inside BHEL Yard / Contractor's store, will be in the scope of contractor. No extra payment for unloading / handling / transportation shall be paid to contractor.</p>
2.2.6	<p>The working area shall be separated from the existing plant area by cordoning off the area by providing MS / GI sheets of suitable heights with appropriate frame work as approved by BHEL/ Customer. No extra payment shall be paid to contractor for this work.</p>
2.2.7	<p>The scope of work will also include providing the following manpower for BHEL's office use within the quoted price:</p> <ul style="list-style-type: none">i) Computer Operator - 12 man monthsii) Skilled Manpower - 24 man monthsiii) Unskilled Manpower - 36 man months <p>Persons so deployed shall have to work in extended hours whenever required. Workmen provided as per the above provisions shall be fully trained and experienced in the nature of work for which they are deployed.</p> <p>In case contractor fails to provide above-mentioned manpower as desired by BHEL, the latter shall have the right to hire such services from other agencies at the risk and cost of the contractor. However, if BHEL does not utilize the man months as per above provision, fully or partly; recovery at the rate of the prevailing minimum wages at DADRI along with statutory expenses i.e. PF, ESI, bonus etc. (as applicable) for the categories given plus 10% will be made from the final bill of the contractor.</p>
2.2.8	<p>The Customer National Thermal Power Corporation (NTPC) may depute their representative for checking and supervision of important stages of work. The contractor shall be required to provide all facilities for inspection of works at no extra cost to BHEL. Any defect in quality of work or deviations from drawings / specifications pointed out during such inspection shall be made good by the contractor in the same way as if pointed out by the BHEL Engineer, without any cost implication to BHEL.</p>
2.2.9	<p>The work under this contract shall be carried out as per BOQ Cum Rate Schedule. In case the description / specifications as per BOQ are found to be incomplete, Indian standard</p>

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Chapter - II: Scope of Works

	specifications shall be followed. Quantities mentioned in the BOQ cum Rate schedules are approximate only and liable for variation due to change of scope of work / variation in schedule of quantities, changes in design etc. The tenderers shall undertake to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same. The quantities indicated against each item may vary to any extent and no compensation will be payable in variation of Individual quantity.
2.2.10	The complete works shall be carried out as per BOQ cum Rate schedule. If any work covered in the scope of contract cannot be executed using items available in BOQ, additional / extra items shall be made and rates for such items shall be worked out as per GCC clause 2.15.7. However contractor shall be bound to execute all the works under the scope of the contract and decision whether an extra item is applicable or not, shall be taken by BHEL Engineer which will be binding on the contractor.
2.2.11	Any activity which is necessarily required for satisfactory execution of any item of BOQ in line with technical specifications shall be deemed to be included in BOQ item even if it is not described in the item description and no extra payment shall be made against such activity.
2.3	The technical requirements for work to be executed under this specification shall be as per Specifications No PE-TS-424-620-C002 (Section C) & PE-TS-436-620- C002 (Section D, Sub-Section D1 to D23), enclosed with this tender document. (Part - II)
2.4	Contractor's scope also includes following:
2.4.1	Furnishing all labor, materials (except those specified in BHEL scope), supervision, construction plans, equipment, supplies, transport to and from the site, materials handling, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown or specified but reasonably implied or necessary for the proper completion, maintenance and handing over the works, in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by BHEL Engineer during the course of works.
2.4.2	Furnishing samples of all materials required by the engineers for testing / inspection and approval for use in the works. The samples may be retained by the engineer for final incorporation in the works. Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
2.4.3	Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that are required for all works including temporary works.
2.4.4	Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.

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Chapter - II: Scope of Works

2.4.5	The scope of work will also include such other related works although they may not be specifically mentioned in the above paragraph and all such incidental items not specified but reasonably implied and necessary for completion of the job as a whole all as desired and as directed by the engineer.
2.4.6	The scope of work covered above is not a comprehensive list of items of work involved. The detail scope of work may vary considerably depending on the actual construction requirements.
2.4.7	APPROVED MANUFACTURER / SUB VENDOR
	STACK ELEVATOR
2.4.7.1.1	Stack elevator to be supplied through BHEL / NTPC approved stack elevator manufacturer as furnished below:
I	Alikraft Engineers Pvt Ltd- Savli, Vadodara
II	Universal Construction Machinery- Pune
2.4.7.1.2	A MOU / consortium agreement in this regard between vendor and BHEL / NTPC approved stack elevator manufacturer as indicated above should be submitted by the bidder.
2.4.7.1.3	For other bought out items, bidder have to adhere to the list of sub vendors indicated elsewhere in the technical specifications, Volume - II
	<u>INSPECTION & JOINT VERIFICATION (AT CONTRACTOR'S WORKS)</u>
2.4.7.2	Prior to dispatch, the materials would be offered by the contractor for joint inspection at the contractor's works as detailed in this tender specifications for which the contractor would serve the advance notice of 15 days for inspection call to BHEL.
	<u>INSPECTION & JOINT VERIFICATION (AT SITE)</u>
2.4.7.3	The contractor shall be intimated within 7 days from the date of receipt of each consignment at site to depute their representative for joint inspection and verification of the equipment / materials received at site. The contractor shall depute their representative within 7 days from receipt of such intimation failing which BHEL shall proceed with the inspection and verification of equipment / materials and BHEL's decision in this regard shall be final and binding to the contractor.
2.4.7.4	<u>QUALITY PLAN</u>
	The bidder shall furnish the quality assurance plan along with the offer which would be approved by BHEL / Owner.
2.4.7.5	<u>MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC) :</u>
	MDCC shall be issued by BHEL / Owner or their authorized representative prior to dispatch. In case the tests are not witnessed by BHEL / Owner / Owner's representative, the test certificates shall be submitted and MDCC will be issued thereafter. MRC shall be issued by BHEL / Owner or their authorized representative after the material is received at site in good condition.

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.1.0	ESTABLISHMENT			
3.1.1	FOR CONSTRUCTION PURPOSE:			
A	Open space for office	Yes		BHEL shall provide free of charge limited open space for office and store as and where made available by its customer
B	Open space for storage	Yes		
C	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
D	Bidder's all office equipment, office / store / canteen consumables		Yes	
E	Canteen facilities for the bidder's staff, supervisors and engineers etc.		Yes	
F	Firefighting equipment 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		Yes	
B	Living accommodation		Yes	
3.2.0	ELECTRICITY			

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.2.1	<u>Electricity For construction purposes</u> (to be specified whether chargeable or free)		Yes	Construction Power can be provided at single point source at 415V (3-phase) on chargeable basis as and where made available by Owner, however contract has to deploy DG Sets at no extra cost to BHEL.
3.2.1.1	Single Point source	Yes		
3.2.1.2	Further distribution for the work to be done which include supply of materials and execution		Yes	
3.2.2	Electricity for the office, stores, canteen etc. of the bidder which include:		Yes	
3.2.2.1	Distribution from single point including supply of materials and service		Yes	
3.2.2.2	Supply, installation and connection of material of energy meter including operation and maintenance		Yes	
3.2.2.3	Duties and deposits including statutory clearances for the above		Yes	
3.2.2.4	Living facilities for office use including charges		Yes	
3.2.2.5	Demobilization of the facilities after completion of works		Yes	

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc. on the above lines.		Yes	
3.3.0	WATER SUPPLY			
3.3.1	For construction purposes:			
3.3.1.1	Making the water available at single point		Yes	
3.3.1.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<u>Water supply for bidder's office, stores, canteen etc.</u>		Yes	Construction Water may be made available at single point source, as per availability. However Bidder has to ensure an alternate arrangement for construction water at his own cost by resorting to the methods like bore well, water tankers etc.
3.3.2.1	Making the water available at single point		Yes	

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.3.2.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	LIGHTING			
3.4.1	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	
3.4.2	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	
3.4.3	Providing the necessary consumables like bulbs, switches, etc. during the course of construction		Yes	
3.4.4	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	COMMUNICATION FACILITIES FOR SITE OPERATIONS OF THE BIDDER			
3.5.1	Telephone, fax, internet, intranet, e-mail etc.		Yes	
3.6.0	COMPRESSED AIR SUPPLY			

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.6.1	Supply of Compressor and all other equipment required for compressor and compressed air system including pipes, valves, storage systems etc.		Yes	
3.6.2	Installation of the above system and operation and maintenance of the same.		Yes	
3.6.3	Supply of the all the consumables for the above system during the contract period		Yes	
3.7	CONSTRUCTION FACILITIES			
3.7.0	Engineering works for construction:			
3.7.1	Providing the construction drawings for all the works covered under this scope	Yes		
3.7.2	Drawings for construction methods and detailed shop drawings	Yes	Yes	In consultation with BHEL. Detailed shop drawings shall be prepared by the Contractor as specified in the BOQ
3.7.3	As-built drawings – where ever deviations observed and executed and also based on the decisions taken at site- routing of small bore pipes		YES	In consultation with BHEL
3.7.4	Shipping lists etc. for reference and planning the activities	Yes		”
3.7.5	Preparation of site construction schedules and other input requirements		Yes	”

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

Sl.No	Description	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.7.6	Review of performance and revision of site construction schedules in order to achieve the end dates and other commitments	Yes	Yes	”
3.7.7	Weekly construction schedules based on Sl. No 2.1.5		Yes	”
3.7.8	Daily construction / work plan based on Sl. No 2.1.7		Yes	”
3.7.9	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	
3.7.10	Preparation of preassembly bay		Yes	
3.8	Other important Conditions regarding facilities to be provided by BHEL / Contractor i.e. Space, Construction Power and Construction Water etc.:			
3.8.1	BHEL shall provide free of charge limited open space, for office & storage shed, as and where made available by M/s NTPC. It is the responsibility of the contractor to construct sheds, provide all utilities and dismantle and clear the site after completion of work or as and when required, as a part of his scope of work.			
3.8.2	Contractor shall be responsible for providing all necessary facilities like residential accommodation, transport, electricity, water, medical facilities etc. as required under various labour laws and statutory rules and regulations framed there under to the personnel employed by him.			
3.8.3	Construction power, for construction purposes will be provided on chargeable basis at one point near erection site (at a distance of up to 500 meters) from supply point AS AND WHEN IT IS MADE AVAILABLE BY THE CUSTOMER . In the initial stages, the Contractor may have to deploy the DG sets for carrying out the tender works. Further distribution of			

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

	power (when received) shall be done by contractor at his cost. All wiring must comply with local regulations and will be subject to Engineer's inspection and approval before connecting supply.
3.8.4	Provision of distribution lines of power from the central points to the required place with proper distribution boards observing the safety rules laid down by the authorities of the state shall be done by the contractor, supplying all the materials like cables, distribution board, switch boards, TPN, CBS, ELCBS/ MCCBS / Copper / Brass clamps, copper conductor, change over switches pipes etc. at his own cost. If any failure is caused in supply of the power and water, it is the responsibility of the contractor to make alternate arrangements at his cost. The contractor shall adjust his working shift / hours accordingly and deploy additional manpower if necessary so as to achieve the targets.
3.8.5	In case of power cuts / load shedding no compensation for idle labour or extension of time for completion of work will be given to contractor.
3.8.6	Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, contractor's material storage area etc. within finally accepted rates.
3.8.7	No claim for damages will be entertained by the Company on account of interruptions of water supply or limitation of quantity of water as aforesaid or on account of the water so taken being not fit for construction purposes or on any other account in connection with such water supply.
3.8.8	Contractor has to arrange for construction water by providing suitable bore well within the quoted rates. Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes
3.8.9	The Contractor should make arrangements for storage of sufficient quantity of water required for work.
3.8.10	The Contractor shall during the progress of the work, provide, erect and maintain at his own expenses all necessary temporary workshops, stores, consumables, offices, etc. required for the proper and efficient execution of the work. The planning, setting and erection of these buildings shall have the approval of the Engineer and the Contractor shall at all times keep them tidy and in a clean and sanitary condition to the entire satisfaction of the Engineer.
3.8.11	On completion of work or as and when required by BHEL, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his failure to do so, same will be got done by the Engineer and expenses incurred shall be recovered from the contractor along with prevailing overhead. The decision of BHEL Engineer in this regard shall be final.

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

(A) - LIST OF T & Ps TO BE ARRANGED BY THE CONTRACTOR AT HIS OWN COST:

SI No.	EQUIPMENT	INDICATIVE QUANTITY
1	TRANSIT MIXER WITH MATCHING DUMPERS	2 Nos.
2	CONCRETE PUMPS (STATIC)	2 Nos.
3	SUBMERSIBLE PUMP (DIESEL / ELEC)	2 Nos.
4	HYDRA CRANE 9 / 14 T	2 Nos.
5	NEW PLC OPERATED BATCHING PLANT (MIN 30 CUM PER HOUR)	1 Nos.
6	TYRE MOUNTED CRANE 75 MT	1 Nos./APR (For fabrication and erection of Flue cans)
7	15/20 MT TRAILORS WITH PULLING UNIT / TRACTOR – TRAILORS	2 Nos.
8	DEWATERING PUMP – 5/10/25 HP	1 Nos. EACH
9	SLUDGE / SLURRY PUMP (DIESEL / ELEC)	1 Nos.
10	POWER DRIVEN EARTH RAMMER	1 Nos.
11	REINFORCEMET CUTTING / BENDING MACHINE	3 Nos.
12	PORTABLE LIGHTING MAST / LIGHTING SYSTEM	1 Nos.
13	CEMENT STORAGE SHED OF MIN 400 MT CAPACITY	1 Nos.
14	SLIP FORM SHUTTERING	1 SET
15	CONCRETE MIXTURE M/C	APR*
16	CONCRETE VIBRATORS	APR*
17	POWER / HAND WINCHES	APR*
18	WELDING MACHINES	APR*
19	HEATING OVEN	APR*
20	PORTABLE OVENS	APR*
21	EXCAVATORS	APR*
22	EARTH COMPACTOR	APR*
23	PLATE COMPACTOR	APR*

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

23	PNEUMATIC JACK HAMMER	APR*
24	PLATE BENDING MACHINE	APR*
25	ALL SCAFFOLDING MATERIALS / PLATFORMS	APR*
26	PLY SHUTTERING BOARD WITH ADEQUATE SUPPRTING STRUCTURE	APR*
27	PIPE CUTTING MACHINE	APR*
28	VIBRO - HAMMER / DROP HAMMER ARRANGEMENT	APR*
29	HYD EXCAVATORS / POCLAINS / JCB	APR*
30	DUMPERS	APR*
31	DOZERS	APR*
32	AIR COMPRESSOR	APR*
33	WINCH WITH BUILDING HOIST	APR*
34	DG SET 125 kVA	APR*
35	WATER TANKER WITH SPRINKLER	APR*

APR*: As per Requirement

NOTES:

1. The above list – (A) is only indicative and these T&Ps may not be required for entire contract period but contractor will ensure that these T & Ps are provided as per the work requirement. **T&P Deployment schedule will be finalized at site based on the work fronts and in consultation with BHEL Engineer. Contractor have to mobilize / maintain the T& P as per the schedule notified time to time by BHEL Engineer.**
2. If any one of T&P mentioned above is not needed for proper execution of scope of work, provided contractor has not utilized BHEL free issued T&P for completing such work, no recovery from contractor shall be applicable.
3. Any additional item 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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

4. In case deployment of T&P w.r.t requirement, is delayed or deployed for a shorter period or abnormal down time of T&P or in case T&P w.r.t requirement was not deployed by the contractor as per instruction of BHEL and BHEL had to deploy either its own T&P or from outside, the recovery shall be done from the contractor as under:
 - a. In case BHEL had to deploy its own T&P, hire charges of T&P applicable for outside agencies as per extant guidelines for “Hire Charges on issue of Capital Tools & Plants” shall be recovered.
 - b. In case BHEL had to deploy the T&P from outside, actual hiring cost plus applicable overheads shall be recovered.
5. All the tools and tackles/measuring instruments shall be duly tested/calibrated and valid certificate to that effect should be submitted to BHEL site in-charge before the start of work.
6. Other terms and conditions regarding above items please also refer clause for T&P/IMTEs in SCC.
7. All the tools and plants required for this scope of work, except the Tools & Plants provided by BHEL are to be arranged by the contractor within the quoted rates. The list is suggestive in nature. **Any additional T & P required to meet BHEL commitments/schedule shall be arranged without any extra cost by the contractor.**
8. **If the work related to T & Ps mentioned above list - (A) is completed then, Engineer I / C can release the T & P during contract period / extended period if any. However, written permission shall be taken by contractor from BHEL construction Manager before releasing T&P.**

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

B- LIST OF IMTEs/MMEs REQUIRED:

SL NO	EQUIPMENT
1	TOTAL STATION
2	AUTO LEVEL AND STAFF
3	COMPRESSION STRENGTH TESTING EQUIPMENT
4	CONSTRUCTION MATERIAL TEST EQUIPMENT
5	CONCRETE CUBE MOULDS (150 X 150 X 150) mm
6	CONCRETE SLUMP CONE
7	COARSE AGGREGATE SIEVES & SAND SIEVER
8	SIEVES AND SIEVE SHAKER
9	AGGREGATE IMPACT TEST MACHINE
10	HEATING OVEN
11	PHYSICAL BALANCE FOR LAB WORK
16	RAPID MOISTURE METER
17	VICAT APPARATUS WITH PLUNGERS FOR CEMENT TESTING
18	THEODOLITE ONE STAND ACCURACY
19	DUMPY LEVEL UP TO 350 MM
20	CORE CUTTER TEST APPARATUS
21	CUBE MOULDS (70MM SIZE)

NOTES:

1. The above list is only indicative and these IMTEs/MMEs may not be required for entire contract period and will be provided as per need. Contractor will assess actual quantity and period of requirement based on his experience
2. Other terms and conditions regarding above items please also refer clause for T&P/MMEs in SCC.
3. All the IMTEs /MMEs required for this scope of work, except the IMTEs / MMEs provided by BHEL, are to be arranged by the contractor within the quoted rates. **The list is suggestive in nature. Any additional IMTEs / MMEs required to be arranged by the contractor.**

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

NOT APPLICABLE

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.	TIME SCHEDULE
6.0	MOBILIZATION, TIME SCHEDULE, CONTRACT PERIOD AND GRACE PERIOD
6.1	INITIAL MOBILIZATION : After receipt of LOI, Contractor shall discuss with Project Manager / Construction Manager regarding initial mobilization. Contractor shall mobilize necessary resources within 2 weeks of issue of letter of intent or as per the directive of Project Manager / Construction Manager. Such resources shall be progressively augmented to match the schedule of milestones as directed by BHEL Engineer
6.2	START DATE / ZERO DATE The schedule date of start of work shall be the date after 2 weeks of issue of LOI; The Actual Date of Start of Contract Period (Zero Date) shall be date of handing over of site to contractor for work and shall be certified by the BHEL Engineer.
6.3	COMPLETION PERIOD: Entire work as detailed in tender specification shall be completed within 14 months from the actual date of start of contract period (Zero Date) as per the programs / milestones indicated by BHEL. Contractor has to mobilize adequate resources to meet BHEL's commitments to their customer as indicated from time to time. In the event the contractor fails to respond to these requirements, BHEL shall take appropriate actions to meet customer's commitments in line with the provisions of General Conditions of Contract.
6.4	Detailed Work completion Schedule will be submitted for approval by the successful bidder within 2 weeks of issue of LOI.
6.5	In case due to reasons not attributable to the contractor, the work gets delayed and scheduled completion gets extended, time extension will be granted by BHEL as per clause no. 2.11 of GCC.
6.6	The work under the scope of this contract is deemed to be completed in all respects, only when all the works are carried out as per satisfaction of BHEL. The decision of BHEL on completion date shall be final and binding on the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.7	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 without any extra cost to BHEL.
6.9	CONSEQUENCE OF DELAY It may be noted that in the event, delay in completion is attributable to the contractor; BHEL will impose LD on the contractor as per clause no. 2.7.9 of GCC.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – VII: Terms of Payment

7.0	TERMS OF PAYMENT
7.1	The 'Engineer' will certify regarding the actual work executed in the measurement books and bills, which shall be accepted by the contractor in measurement book.
7.2	The Contractor shall be paid monthly running bill as per chapter - X of SCC and Clause Nos. 2.22 & 2.23 of GCC. The format for billing shall be approved by BHEL before raising invoices.
7.3	The contractor on certification of the engineer at site is entitled for payments of his running bills which shall be subject to any deduction/retention specifically under clauses 2.22 of GCC and 10.0 of SCC.
7.4	Interest bearing recoverable advance: Applicable

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes & Duties

8.1.1	<p>Price quoted should be inclusive of all applicable Taxes/charges but Excluding GST. The Contractor shall pay all other taxes, fees, royalty, commission etc. which may be levied on the contractor in executing the contract. In case BHEL is forced to pay any of such taxes, it shall be recovered from Contactor's bills or otherwise as deemed fit.</p> <p>GST Shall be payable extra as per following :</p>
8.1.2	<p>Contractor/Vendor has to issue invoice indicating HSN/SAC code, Description, Value, Rate, applicable tax and other particulars in compliance with the provisions of relevant GST Act and Rules made thereunder. With the implementation of e way bill provisions, contractor shall comply with same as applicable.</p>
8.1.3	<p>Vendor has to submit GST compliant invoice within seven days from the due date of invoice as per GST Law. In case of delay, BHEL reserves the right of denial of GST payment if there occurs any hardship to BHEL in claiming the input thereof. In case of goods, vendor has to provide scan copy of invoice & GR/LR/RR to BHEL before movement of goods starts. Special care should be taken in case of month end transactions.</p>
8.1.4.	<p>GST amount claimed in the invoice shall be released on fulfilment of all the following conditions by the Contractor : -</p> <ol style="list-style-type: none">Supply of goods and/or services have been received by BHEL.Original Tax Invoice has been submitted to BHEL.Respective invoice has appeared in BHEL's GSTR - 2A for the month corresponding to the month of invoice. Alternatively, BG of appropriate value may be furnished which shall be valid at least one month beyond the due date of confirmation of relevant payment of GST on GSTN portal or sufficient security is available to adjust the financial impact in case of any default by the contractor.
8.1.5	<p>Contractor shall be solely responsible for discharging his GST liability according to the provisions of GST Law and BHEL will not entertain any claim of GST/interest/penalty or any other liability on account of failure of contractor in complying the provisions of GST Law or discharging the GST liability in a manner laid down thereunder</p>
8.1.6	<p>In case declaration of any invoice is delayed by the vendor in his GST return or any invoice is subsequently amended/altere/deleted on GSTN portal which results in any adverse financial implication on BHEL, the financial impact thereof including interest/penalty shall be recovered from the Contactor's due payment.</p>
8.1.7	<p>Any denial of input credit to BHEL or arising of any tax liability on BHEL due to non-compliance of GST Law by the Contractor in any manner, will be recovered along with liability on account of interest and penalty (if any) from the payments due to the Contactor.</p>
8.1.8	<p>The admissibility of GST, taxes and duties referred in this chapter or elsewhere in the contract is limited to direct transactions between BHEL & its Contractor. BHEL is not</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes & Duties

	responsible for any liability that may arise due to any transaction beyond the direct transaction between BHEL & its Contractor.
8.1.9	<p><u>Variation in Taxes & Duties:</u></p> <p>Any upward variation in GST shall be considered for reimbursement provided supply of goods and services are made within schedule date stipulated in the contract or approved extended schedule for the reason solely attributable to BHEL. However downward variation shall be subject to adjustment as per actual GST applicability.</p> <p>In case the Government imposes any new levy/tax on the output service/goods after price bid opening, the same shall be reimbursed by BHEL at actual. The reimbursement under this clause is restricted to the direct transaction between BHEL and its contractor only and within the contractual delivery period only.</p> <p>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/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of price bid. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.</p>
8.1.10	<p><u>Modalities of Tax Incidence on BHEL:</u></p> <p>Where GST law permits more than one option or methodology for discharging liability of tax/levy/ duty; the contractor shall approach BHEL before choosing any option to discharge his tax liability. BHEL shall have the right to direct the contractor to adopt the appropriate option considering the amount of tax liability on BHEL as well as procedural simplicity with regard to assessment of the liability.</p> <p>The option chosen by BHEL shall be binding on the contractor for discharging the obligation of BHEL in respect of the tax liability to the contractor.</p>
8.2	BUILDING & OTHER CONSTRUCTION WORKERS (REGULATION OF EMPLOYMENT AND CONDITIONS OF SERVICE) ACT, 1996 (BOCW Act) AND RULES OF 1998 READ WITH BUILDING & OTHER CONSTRUCTION WORKERS CESS Act, 1996 & CESS RULES, 1998.
	In case any portion of work involves execution through building or construction workers, then compliance to the above titled Acts shall be ensured by the contractor and contractor shall obtain license and deposit the cess under the Act. In the circumstances it may be ensured as under:-
8.2.1	It shall be the sole responsibility of the contractor in the capacity of employer to forthwith (within a period of 15 days from the award of work) apply for a licence to the Competent Authority under the BOCW Act and obtain proper certificate thereof by specifying the scope of its work. It shall also be responsibility of the contractor to furnish a copy of such certificate of licence / permission to BHEL within a period of one month from the date of award of contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes & Duties

8.2.2	It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under these act and rules including that of payment / deposit of 1% cess on gross payment made for value of work involving building or construction workers engaged by the contractor within a period of one month from the receipt of payment.
8.2.3	It shall be the responsibility of the sub-contractor to furnish the receipts /challans towards deposit of the cess together with the number, name and other details of beneficiaries (building workers) engaged by the sub-contractor during the preceding month.
8.2.4	It shall be the absolute responsibility of the sub-contractor to make payment of all statutory payments & compensations to its workers including that is provided under the Workmen's Compensation Act, 1923.
8.2.5	The contractor shall, however ensure before deposit of any BOCW Cess, that customer is not depositing the same in order to avoid excess deposit of cess.
8.2.6	The contractor shall bear cost of BOCW cess either by way of deposit or through recovery by BHEL in case the same is deposited by the customer.
8.2.7	In case of failure in above mentioned compliances, BOCW Cess @ 1% as well as applicable penalty as specified in BOCW Act/Rules shall be deducted from the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-IX: Materials and Other Requirements

9.0	MATERIALS
9.1	The contractor shall at his own expenses provide all materials including paints, welding electrodes etc. required for the work. However for permanent works structure steel, cement & reinforcement steel will be issued free of cost as per terms & conditions specified in clause No. 9.14 from BHEL / Customer stores or at a point instructed by BHEL.
9.2	All materials to be provided by the Contractor shall be of the best kind in conformity with the specifications laid down in the contract or as per relevant Indian standard and the Contractor shall, if requested by the BHEL Engineer, furnish proof to the satisfaction of BHEL Engineer that the materials so comply.
9.3	The Contractor shall, at his own expense and without delay, supply to the BHEL Engineer samples of materials proposed to be used in the works. The BHEL Engineer shall within seven days of supply of samples or within such further period as he may require will intimate to the Contractor in writing, whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the BHEL Engineer for his approval fresh samples complying with the specifications laid down in the Contract. Any delay in approval of samples (original or fresh ones) shall not make the contractor eligible for any compensation.
9.4	The BHEL Engineer shall have full powers for removal of any or all of the materials brought to site by the Contractor which are not in accordance with the Contract specifications or do not conform in character or quality to samples approved by him. In case of default on the part of the Contractor in removing rejected materials, the BHEL Engineer shall be at liberty to have them removed by other means. The BHEL Engineer shall have full powers to procure other proper material to be substituted for rejected materials and in the event of the Contractor refusing to comply; he may cause the same to be supplied by other means. All costs, which may attend upon such removal and / or substitution, shall be borne by the Contractor.
9.5	The Contractor shall indemnify BHEL, its representatives or employees against any action, claim or proceeding relating to infringement or use of any patent or design or any alleged patent or design rights and shall pay any royalties or other charges which may be payable in respect of any article or material or part thereof included in the Contract. In the event of any claim being made or action being brought against BHEL or any agent, servant or employee of BHEL in respect of any such matters as aforesaid, the Contractor shall immediately be notified thereof, provided that such indemnity shall not apply when such infringement has taken place in complying with

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: Materials and Other Requirements

	<p>the specific directions issued by BHEL but the Contractor shall pay any royalties or other charges payable in respect of any such use, the amount so paid being reimbursed to the Contractor only if the use was the result of any drawings / specifications issued after submission of the tender.</p>
9.6	<p>The BHEL Engineer shall be entitled to have tests carried out as specified in the Contract for any materials supplied by the Contractor other than those for which, as stated above, satisfactory proof has already been furnished, at the cost of the Contractor and the Contractor shall provide at his expense all facilities which the Engineer may require for the purpose. If no tests are specified in the Contract, and such tests are required by the Engineer, the Contractor shall provide all facilities required for the purpose and the charges for these tests shall be borne by the Contractor only. The cost of materials consumed in tests shall be borne by the Contractor in all cases except when otherwise provided.</p>
9.7	<p>In addition, the Contractor shall perform / submit at his own cost such tests / samples as may be required by the BHEL Engineer out of the materials used by the company except for the costs of materials used in such tests/ samples.</p>
9.8	<p>After acceptance of the Contract, if Contractor desires BHEL to supply any other materials, such material may be supplied by BHEL, if available, at rates to be fixed by the BHEL Engineer along with prevailing departmental charges. BHEL reserve the right not to issue any material. The non-issue of such material will not entitle the Contractor for any compensation whatsoever either in time or in cost.</p>
9.9	<p>Material required for the works, whether brought by the Contractor or supplied by BHEL, shall be stored by the Contractor only at places approved by the Engineer. Storage and safe custody of material shall be the responsibility of the contractor.</p>
9.10	<p>BHEL's officials concerned with the Contract shall be entitled at any time to inspect and examine any materials intended to be used in or on the works, either on the Site or at factory or workshop or other place(s) where such materials are assembled, fabricated, manufactured or at any place (s) where these are lying or from which these are being obtained and the Contractor shall give such facilities as may be required for such inspection and examination.</p>
9.11	<p>All materials brought to the Site shall become and remain the property of BHEL and shall not be removed off the Site without the prior written approval of the BHEL Engineer. But whenever the Works are finally completed and advance, if any, in respect of any such material is fully recovered, the Contractor shall at his own expense forthwith remove from the Site all surplus material originally supplied by him</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: Materials and Other Requirements

	and upon such removal, the same shall re-vest in and become the property of the Contractor.
9.12	It shall be the responsibility of the contractor to obtain prior approval of BHEL, regarding suppliers, type of electrodes etc. before procurement of welding electrodes / TIG wires. On receipt of electrodes at site these shall be subjected to inspection and approval by BHEL. The contractor shall inform BHEL details regarding type of electrodes, batch No. date of expiry etc. and produce test certificate for each lot / batch with correlation of batch / lot no. with respective test certificate. No electrode will be allowed to be used without valid test certificate.
9.13	All charges on account of Octroi, terminal or sales tax and other duties on material obtained for the works from any source shall be borne by the contractor.
9.14	ISSUE AND ACCOUNTING OF CEMENT, REINFORCEMENT STEEL.
9.14.1	Cement, reinforcing steel will be issued as free issue materials from BHEL / NTPC site stores or other issuing points as specified by the Engineer. Such issues would be only for permanent works. Necessary indents shall be raised by the contractor as per procedure laid down by the Engineer-in-Charge about 7 days in advance of the actual requirement for incorporation in the works.
9.14.2	Materials will be issued only for permanent works and not for making templates, other temporary works, enabling works etc. and the same shall not be taken into account for purpose of material reconciliation.
9.14.3	The contractor shall bear all other costs including the lifting, carting from issue points to works site / contractor's stores, custody and handling etc. and return of surplus / serviceable materials to Owner's stores to be designated by the Engineer-in-charge and all expenditure will be made by the contractor.
9.14.4	All steel shall be issued in available lengths / shapes and no claims for extra payment on account of issue of non-standard lengths / shapes will be entertained. For the purpose of billing and accounting only linear measurement will be taken and weight will be calculated as per the IS Co-efficient. The different in unit weight as per IS and actual as issued, if any shall be to the contractor's account and contractor shall quote the rates for corresponding item to take care of such difference.
9.14.5	Cement, as received from the Manufacturer / Stockiest will be issued to the contractor. The theoretical weight of each bag of cement for issue purpose will be considered as 50Kgs. Per Bag. Any type of cement and in any container as received from Manufacturer / Stockiest shall be issued to the contractor No claim whatsoever shall be entertained on this. Cement bags weighing up to 4% less will be accepted by the contractor and accounted for as 50Kg per bag.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: Materials and Other Requirements

9.14.6	The Contractor shall maintain good stores for storing the cement issued to him. The flooring of the storage house, the clearance of cement bags from the side walls etc., shall be as per the instructions of the Engineer-in-charge.
9.14.7	The cement stores shall be open for supervision and verification by the Engineer-in-charge or his authorized representative by any time when the Engineer-in-charge feels the need to do so.
9.14.8	In the case of steel materials, the same shall be issued generally on the basis of linear measurement and the corresponding weight will be calculated as per Indian Standard. For the purpose of billing & accounting, only linear measurement will be taken and any difference in weight based on linear measurement & actual weight shall be to contractor's account. Quoted price shall be deemed to include the above & the permissible wastage mentioned. No claim whatsoever shall be entertained on account of wastage & difference in weight as referred to above.
9.14.9	Issue of stores material is subject to availability and the contractor shall not be entitled to any claim or compensation for non-supply or delay in the supply under any circumstances. The material will be issued generally during the working hours.
9.14.10	The Contractor will have to submit their design mix for different grades of Concrete keeping in view the requirements stipulated in IS:456, specifically regarding slump and Water Cement ratio and Specific Gravity of Materials brought to site as analyzed in the laboratories. The design shall be used upon absolute volume method and theoretical consumption of Cement shall be worked out on this basis. For other than above designated mix Concrete items, the coefficients for consumption of cement shall be adopted as per CPWD practice. The theoretical consumption of cement thus worked out shall be binding upon the Contractor for reconciliation of Cement issued by the Owner. For any excess /under consumption based on these coefficients, the Contractor shall be penalized as per contract provisions. Though, permissible wastage specified shall be considered, while effecting penal recovery, no other allowance whatsoever shall be taken for reconciliation purposes.
9.14.11	The theoretical consumption of cement, reinforcement steel and structural steel required for the work will be calculated on the basis of approved drawings / joint measurements. In the case of cement, the theoretical consumption shall be decided by the Engineer as mentioned above and his decision in this regard shall be final and binding on the Contractor. Reinforcement and structural steel shall be measured by weight in tones. The weight will be arrived at by multiplying the used length by the sectional weight. The sectional weight will be same as were applied at the time of issue. Standard hooks, cranks, bends and authorized laps, chairs, separator pieces etc. specified in drawing or instructed by engineer as required shall be measured and paid for. No payment shall be made for binding wires, spacer block etc. required for keeping the steel in position unless otherwise specified in the contract. No extra payment will be made for modification of already embedded reinforcement, if required due to faulty fabrication or placement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-IX: Materials and Other Requirements

9.14.12	The contractor shall submit proper account of material / material reconciliation statement for the material drawn by him from stores once in every three months. Failing compliance of this requirement further issue of steel to the contractor may be suspended and no claim of compensation for delay in execution on this account shall be entertained.												
9.14.13	All the cement & reinforcement steel thus issued shall be properly accounted for as per the following permissible wastage over the theoretical quantity / consumption incorporated in the works.												
	<table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">Item</th> <th style="width: 20%;">Area</th> <th style="width: 30%;">Permissible Variation / Wastage</th> </tr> </thead> <tbody> <tr> <td>Cement</td> <td>For All works</td> <td>1.5%</td> </tr> <tr> <td>Reinforcement Bars & MS Earthing Rods</td> <td>For All works</td> <td>3%</td> </tr> <tr> <td>Structural Steel</td> <td>For All Works</td> <td>4%</td> </tr> </tbody> </table>	Item	Area	Permissible Variation / Wastage	Cement	For All works	1.5%	Reinforcement Bars & MS Earthing Rods	For All works	3%	Structural Steel	For All Works	4%
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9.14.14	Any unused / serviceable quantity of cement, reinforcement steel & structural steel not returned in good condition & wastages / loss / consumption beyond specified / agreed limits shall be charged at penal rate of Rs 7000 per MT for cement, Rs 60,000 per MT for reinforcement steel & Rs 70,000 per MT for structural steel at the time of preparing final bill, during finalization of the contract. The decision of Engineer-in-charge with regard to applicability of penal rates shall be final & binding upon the contractor.												
9.14.15	For the materials i.e. Reinforcement (TMT) being issued free of cost, the scrap generated shall belong to BHEL.												
9.14.16	Empty cement bags shall be the property of contractor and recovery @ 01/- (Rs. One only) per empty cement bag shall be made from their RA bills.												
9.14.17	SCRAP & SERVICEABLE MATERIALS: All reinforcement steel / Structural steel of length above 2 M shall be considered as serviceable materials provided the materials is in good and acceptable condition. Structural Steel / Reinforcement steel in length less than 2 M shall be treated as scrap.												

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X: Other Important Conditions

10.1	EXECUTION OF WORK
10.1.1	The work shall be executed in a workman like manner and to the entire satisfaction of the Engineer and as per technical specification issued with tender, IS codes, technical specifications as applicable. In case of conflict, the decision of the Engineer I/c shall be final & binding.
10.1.2	The Engineer I/c will communicate or confirm his instructions to the Contractor in respect of the execution of the work in a "Work Site Order Book" maintained at his office and the Contractor shall visit this office daily and shall confirm receipt of such instructions by signing the relevant entries in this book or through e-mail. Such entries / e-mails will rank as order or notices in writing within the intent and meaning of these conditions.
10.1.3	Only BHEL approved make of electrodes will be used. All electrodes shall be heated 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 site will have valid manufacturing test certificate. The test certificate will have co-relation with the lot no. / batch no. given on electrode packets. No electrodes will be allowed to 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. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.
10.2	SETTING OUT
10.2.1	All the works shall be set out to the true lines, grades and elevation indicated on the drawing. The contractor shall be responsible to locate and set out the works. Only one grid reference line and bench mark all be made available for setting out the works under the contract. This reference lines shall be used as datum for the works under the contract and the contractor has to establish for his work area at available points horizontal and vertical control points. The contractor shall inform BHEL well in advance of the times & places at which he wishes to do work in the area allotted to him so that suitable datum points established by him are checked by BHEL / Customer to enable the contractor to proceed with the works. Any work done without being properly located may be removed and / or dismantled by BHEL / Customer at contractor's expense.
10.2.2	The contractor shall at his own expense take all proper and responsible precautions to preserve and maintain these datum marks to its true position. In the event of these marks being disturbed or obliterated by accident or due to any other cause whatsoever, the same may be deemed necessary placed by BHEL / Customer at contractor's expenses.
10.3	SITE DRAINAGE

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X: Other Important Conditions

10.3.1	All water including sub-soil water which may accumulate on the Site during the progress of the works or in trenches and excavations, including monsoon period shall be removed by the contractor from the Site to the satisfaction of the Engineer. It will also be responsibility of the contractor to de-water all the foundation pits, trenches with suitable de-watering methods like, pumping out, well point system etc. considering the depth of water table at plant site. All such expenditure on de-watering shall be deemed to be included in quoted rates.
10.4	INSPECTION AND STAGE APPROVAL OF THE WORK
10.4.1	The owner or his duly authorized representative shall have at all reasonable times access to the contractor's premises or works and shall have the power to inspect drawings or any portion of the work, examine the materials and workmanship and shall have the authority to reject any work. This would be implemented through joint inspection by the representative of the owner and BHEL and in the form of joint protocols without any extra claims and loss of time and amount.
10.4.2	All work embracing more than one process shall be subject to examination and approval at each stage thereof and the Contractor shall give due notice in writing to the Engineer when each stage is ready. In default of such notice being received, the Engineer shall be entitled to approve the quality and extent thereof at any time he may choose and in the event of any dispute, the decision of the Engineer thereon shall be final and conclusive.
10.5	UNCOVERING AND MAKING GOOD
10.5.1	The Contractor shall uncover any part of the Works and/or make openings in or through the same as the Engineer may from time to time direct for his verification and shall reinstate and make good such part to the satisfaction of the Engineer. If any such part has been covered up or put out of view after being approved by the Engineer and is subsequently found on uncovering to be executed in accordance with the Contract, the expenses of uncovering and / or making opening in or through, reinstating and making good the same shall be borne by BHEL. In any other case all such expenses shall be borne by the Contractor.
10.6	DISCREPANCIES AND ADJUSTMENT OF ERRORS
10.6.1	The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small-scale drawings and figures dimensions in preference to scale and special conditions in preference to general conditions.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X: Other Important Conditions

10.6.2	<p>In case of discrepancies between schedules of quantities, the specification and / or the drawings, the following order of preference shall be observed.</p> <p>(a) Description in schedule of quantities.</p> <p>(b) Technical Conditions of Contract.</p> <p>(c) Drawings.</p> <p>(d) Technical Specifications</p> <p>(e) Special Conditions of Contract</p> <p>(f) General conditions of contract</p>
10.6.3	<p>If there are varying or conflicting provisions made in any one document forming part of the contract, the Engineer shall be the deciding authority with regard to the document.</p>
10.6.4	<p>Any error in description, quantity in schedule of quantities or any omission there from shall not vitiate the contract or release the contractor from the execution of the whole or any part of the works comprised therein according to the drawings and specifications or from any of his obligations under the contract.</p>
10.7	MATERIAL OBTAINED FROM EXCAVATION
10.7.1	<p>Valuable Materials / Archeologically important materials of any kind obtained from excavation on the Site shall remain the property of BHEL / its client and shall be disposed of as the Engineer may direct, at no extra cost.</p>
10.8	SAFETY CODE
10.8.0	The contractor shall comply with following towards Safety and Social Accountability.
10.8.1	<p>Besides provision with regard to SAFETY under Clause 9.0 of SCC, the contractor will be responsible for Health, Safety & Environment management at site for the construction activities to be carried out by them. The contractor shall continuously take special care to ensure the safety and prevention of human and equipment accidents and maintain good sanitary conditions in and around the site. All the construction work and plant operation must be carried out in the safest possible manner. The Engineer reserves the right to stop any process which, in the Engineer's opinion, is being performed dangerously. In this case the contractor must immediately adhere the requisite safety precautions and any delays attributed to the work stoppage on this account shall not affect the agreed contractual finishing dates.</p>
10.8.2	<p>HSE plan for site operation by Sub Contractor (Doc No. HSEP 13 Rev 00 attached) shall be followed.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-X: Other Important Conditions

10.9	NUISANCE
10.9.1	The Contractor shall not at any time do, cause or permit any NUISANCE on Site or do anything which shall cause unnecessary disturbance or inconvenience to owners, tenants or occupiers of other properties near the Site and to the public generally.
10.10	TREASURE , TROVE , FOSSILS etc.
10.10.1	All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the site shall be the absolute property of BHEL / BHEL's client and the Contractor shall take reasonable precautions to prevent his workmen or any other person from removing or damaging any such article or thing, shall immediately upon discovery thereof and before removal acquaint the Engineer with such discovery and carryout the Engineer's directions as to the disposal of the same.
10.11	PROTECTION OF WORKS
10.11.1	Trees designated by the Engineer shall be protected from damage during the course of the Works and earth level within 1 meter of each such tree shall not be charged. Where necessary, such trees shall be protected by providing temporary fencing.
10.11.2	The contractor shall provide and maintain at his own expense all lights, guards, fencing and watching when and where necessary or required by the Engineer for the protection of the Works or for the safety and convenience of those employed on the Works or the public.
10.11.3	The contractor shall have total responsibility for protecting his works till it is finally taken over by the Engineer. No claim will be entertained by the Engineer for any damage or loss to the contractor's works and the contractor shall be responsible for the complete restoration of the damaged works to its original condition to comply with the specifications and drawings. Should any such damage to the contractor's works occur because of other party not under his supervision or control, the contractor shall make his claim directly with the party concerned. The contractor shall not cause any delay in the repair of such damaged works because of any delay in the resolution of such disputes. The contractor shall proceed to repair the work immediately and no cause thereof will be assigned pending resolution of such disputes.
10.12	RECORD FOR MATERIALS CONSUMED
10.12.1	The contractor shall maintain and furnish to the Engineer the RECORD OF MATERIALS consumed in the works for each activity. The statement showing the theoretical vis-à-vis actual consumption of specified materials, such as structural /reinforcement steel, cement, bitumen, lead, paint etc., shall be enclosed along with the running bills submitted by the contractor. Contractor has to also furnish the test results of the materials used in the work as per IS specifications.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-X: Other Important Conditions

10.13	PROTECTION OF EMBEDMENTS, BOLTS ETC.
10.13.1	The contractor shall ensure proper protection to the satisfaction of the Engineer, of all bolts, inserts, embedment etc. from weather etc./ by greasing, rapping them with gunny bags or canvas or by any other means as directed by Engineer. Cost of such protections shall be deemed to be included in the rates quoted for the item.
10.14	COMPLETION OF WORK AND COMMENCEMENT OF GURANNTTEE PERIOD
10.14.1	The works shall be completed to the entire satisfaction of the Engineer and in accordance with the completion schedule as specified in the Contract, and all unused stores and materials, tools, plant, equipment, temporary buildings, site office, labor hutments and other things shall be removed and the site and work cleared of rubbish and all waste materials and delivered up clean and tidy to the satisfaction of the Engineer at the Contractor's expenses.
10.14.2	BHEL shall have power to take over from the Contractor from time to time such sections of the work as have been completed to the satisfaction of the Engineer. Such work however shall not be treated as have been completed until the extra / pending works are executed to the satisfaction of Engineer.
10.14.3	The Engineer shall certify to the contractor the date on which the work is completed and the date thereof for commencement of Guarantee Period. Guarantee Period shall be as given in GCC.
10.15	CLEARANCE OF SITE AND REPAIRS.
10.15.1	Contractor has to clear the site / area where mechanical and electrical erection work is to be commenced / or in progress. The contractor shall remove construction materials and equipment lying in the vicinity and causing obstruction in the erection work within 24 hrs. notice. In case, he fails to clear the site, this will be done at his risk & cost by BHEL.
10.16	QUALITY ASSURANCE
10.16.1	The contractor has to establish / arrange at site the field testing facilities for testing of civil construction materials and concrete cubes for ensuring the proper quality, grade and strength of the materials used in the construction in line with approved field quality check list of BHEL/ its client. Contractor has to submit detailed report for testing of all material used etc. All testing shall be done as per IS code specifications/ BHEL's quality plan. If further test is required by the engineer to be carried from outside laboratory, the cost of the same shall be borne by the contractor.
10.17	NA
10.18	METHOD OF MEASUREMENT
10.18.1	Method of measurements shall be as per standard specifications included in the tender. For other items measurements shall be as per relevant IS Codes.

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10.19	DEVIATION
10.19.1	The Contractor shall not make any alteration in, addition to or omission from the work as described in the tender documents except in pursuance of the written instructions of the Engineer. No such deviation from the work described in the tender documents shall be valid unless the same has been specifically confirmed and accepted by the Engineer in writing and incorporated in the Contract.
10.19.2	The Engineer may deviate, either by way of addition or deduction, from the work so described, provided that the Contract sum be not thereby varied on the whole by more than the percentage set out in the tender documents. The value of all additions and deductions shall be added to or deducted from the Contract sum. (Whenever the Engineer intends to exercise such a right his intentions shall specify the deviations which are to be made, the lump-sum assessment or the proposed basis of payment, the extra time allowed, if any, and the date for completion of the entire contract). Any objection by the contractor to any matter concerning the order shall be notified by him in writing to the Engineer within seven days from the date of such order, but under no circumstances shall the work be stopped (unless so ordered by the Engineer) owing to differences or controversy that may arise from such an objection. In the absence of such a notification of objection by the Contractor, he will be deemed to have accepted the order and the conditions stated therein.
10.19.3	Valuation of Deviations shall be as per Clause 2.15 & 2.16 of GCC.
10.20	COMPLIANCE TO REGULATIONS AND BYELAWS
10.20.1	The Contractor shall conform to the provisions of any statute relating to the work and regulations and bylaws of any local authority and of any water and lighting Companies or Undertaking with whose system the work is proposed to be connected. He shall, before making any variation from the drawings or the specifications that may be necessitated for such connections give the Engineer, notice specifying the variation proposed to be made and the reasons therefore and shall not carry out any such variation until he has received instructions from the Engineer in respect thereof. The Contractor shall be bound to give all notices required by statute, regulations or by-laws as aforesaid and to pay all fees and taxes payable to any authority in respect thereof.
10.20.2	<p>In order to give phillip to Pradhan Mantri Kaushal Vikas Yojna:</p> <p>"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</p>

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	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.
10.21	PROGRESS REPORTING :
10.21.1	Contractor is required to draw mutually agreed monthly programme in consultation with BHEL well in advance. Contractor shall ensure achievement of agreed programme and shall also timely arrange additional resources considered necessary at no extra cost to BHEL.
10.21.2	Weekly progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled programme shall be discussed for actions to be taken for achieving targets. The programme for subsequent week shall also be presented by contractor for discussions. The contractor shall constantly update / revise his work programme to meet the overall requirement. All quality problems shall 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 non-conformities.
10.21.3	The contractor shall submit weekly and monthly progress reports, materials reports, consumables (gases / electrodes) report and other reports as per proforma considered necessary by the Engineer.
10.21.4	The progress report shall indicate the progress achieved against planned , with reasons indicating delays , if any, and shall give the remedial actions which the contractor intends to take to make good the slippage or lost time , so that further works again proceed as per the original programme and the slippages do not accumulate and effect the overall programme.
10.21.5	The daily manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.
10.22	DRAWING AND DOCUMENTS
10.22.1	The detailed drawings, specifications available with BHEL engineers will form part of this tender specification. These documents will be made available to the contractor

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	during execution of work at site. The contractor will also ensure availability of all drawings / documents at work place.
10.22.2	Necessary drawings / documents by BHEL to carry out the construction work will be furnished to the contractor by BHEL (except those proposed to be prepared by contractor, as mentioned in this contract) on loan which shall be returned to BHEL Engineer at site after completion of work. Contractor shall ensure safe storage and quick retrieval of these documents.
10.22.3	The contractor shall maintain a record of all drawings and documents available with him in a register as per format given by BHEL Engineer. Contractor shall ensure use of pertinent drawings / data / documents and removal of obsolete ones from work place and return to BHEL.
10.22.4	The data furnished in various annexures enclosed with this tender specification are only approximate and for guidance. However, the change in the design and in the quantity may occur as is usual in any such large scale of work.
10.22.5	Should any error or ambiguity be discovered in the specification or information the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on the contractor.
10.22.6	Deviation from design dimensions should not exceed permissible limit. The contractor shall not correct or alter any dimension / details, without specific approval of BHEL.
10.23	<p>MODIFICATION/ DELETION OF GCC & SCC CLAUSES:</p> <p>A. GCC Clauses:</p> <p style="padding-left: 20px;">i. Clause No. 2.12 of GCC (ORC) shall not be applicable</p> <p>B. SCC Clauses:</p> <p style="padding-left: 20px;">i. Clause No. 4.1.2, 4.1.4, 4.1.9 & 4.1.10 of SCC (Consumables & Other Items) shall not be applicable.</p> <p style="padding-left: 20px;">ii. Clause No. 8.3.2, 8.3.3 and 8.3.4 of SCC (Statutory Inspection of Work) shall not be applicable.</p>

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter-XI: Annexures

Annexure - I : PRICE SCHEDULE for the Work of “**CONSTRUCTION AND DEVELOPMENT OF 150 M TALL TWIN FLUE, RCC CHIMNEY INCLUDING SUPPLYING AND INSTALLATION OF ELECTRICAL ITEMS AND INSTALLATION OF BOROSILICATE GLASS LINING FOR DADRI FGD AT 2X490 MW NCTPP DADRI, GAUTAM BUDH NAGAR, U.P.**”

PRICE SCHEDULE		
TENDER NO. BHEL/ NR/SCT/DADRI FGD /CHIMNEY/1099		
Job-: "Construction and Development of 150 mtrs tall Twin Flue, RCC Chimney including Supplying and Installation of Electrical items and Installation of Borosilicate Glass Lining for DADRI FGD at 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P."		
Sl. No.	DESCRIPTION OF WORK	TOTAL PRICE ("A") IN RUPEES (IN FIGURES AND WORDS)
1.0	TOTAL PRICE ("A") FOR THE TOTAL WORK AS PER TENDER SPECIFICATION FOR "Construction and Development of 150 mtrs tall Twin Flue, RCC Chimney including Supplying and Installation of Electrical items and Installation of Borosilicate Glass Lining for DADRI FGD at 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P."	/
Notes:-		
1. Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.		
2. The rate of individual item for the entire scope of work shall be arrived as per calculation defined in BOQ CUM RATE SCHEDULE as per Annexure - "AA" .		
3. The derived item rate will remain firm through out the contract period.		

PROJECT: FLUE GAS DESULPHURIZATION (FGD) SYSTEM PACKAGE AT 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P.

ANNEXURE - 'AA'

BOQ CUM RATE SCHEDULE

PROJECT: NCTPP,DADRI STG-II (2X490 MW-FGD Package)

NAME OF WORK: CONSTRUCTION AND DEVELOPMENT OF 150 Mtrs TALL TWIN FLUE, RCC CHIMNEY INCLUDING SUPPLYING AND INSTALLATION OF ELECTRICAL ITEMS AND INSTALLATION OF BOROSILICATE GLASS LINING FOR DADRI FGD AT 2X490 MW NCTPP DADRI, GAUTAM BUDH NAGAR, U.P.

Sl. No.	Item Code No.	Description of Item	Unit	Quantity	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after deimal)	AMOUNT (Rs.) = RATE * QUANTITY
Civil Works							
1	C1	Earth work in <u>excavation in all types of soil</u> including moorum, ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge					
2	a	Depth from ground level but not exceeding 2 m	cum	4549	0.0325	-	-
3	b	Depth exceeding 2 m but not exceeding 4 m	cum	3898	0.0403	-	-
4	c	Depth exceeding 4 m but not exceeding 6 m	cum	2368	0.0506	-	-
5	C7	<u>Back filling</u> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials <u>from compulsorily excavated soil</u> available within a lead upto 1 km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.			-	-	-
6	b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	5350	0.0267	-	-
7	C8	<u>Back filling</u> upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness <u>using/with selected materials directly from excavation</u> and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.			-	-	-
8	b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	500	0.0108	-	-
9	C9	Extra over item No. 1 and 3 to 7 for <u>carriage of excavated earth/selected materials</u> for every 500 m or part thereof beyond an initial lead of 1 km.	cum	5465	0.0028	-	-
10	C11	<u>Supplying and filling sand</u> upto any depth below grade slab, around foundations, etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.	cum	650	0.6011	-	-
11	C12	<u>Supplying and laying</u> (inside chimney in the space below the grade level slab) <u>crushed rock</u> range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	cum	250	0.8609	-	-
12	C13	Providing and laying <u>Nominal Mix plain cement concrete (M 7.5)</u> with graded aggregate (with maximum size of coarse aggregate not exceeding 40 mm) at all levels for all kinds of <u>work like mass concrete, lean concrete, mudmat, filling</u> etc. including labour, materials, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. (CEMENT WILL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	cum	194	1.6510	-	-

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Sl. No.	Item Code No.	Description of Item	Unit	Quantity	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after deimal)	AMOUNT (Rs.) = RATE * QUANTITY
13	C14	Providing and laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel: (CEMENT WILL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)				-	-
14	i	For all works below ground level (except chimney shell)				-	-
15	a	Grade M-25 (foundations, etc)	cum	5465	1.8953	-	-
16	ii	Extra over St. No. 14(i) for controlling of temperature of fresh concrete for raft/pilecap to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	cum	4099	0.1507	-	-
17	iii	For all other works				-	-
18	a	Grade M-25 grade level slab, pit, trenches, drain etc.	cum	80	1.8953	-	-
19	b	Grade M-30 for chimney shell, corbels and external platforms and other shell attachments.	cum	6963	2.6068	-	-
20	d	Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc.	cum	60	1.8637	-	-
21	C15	Providing and applying three coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS 6241 in foundation, shell, pedestal etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	Sqm	1670	0.0586	-	-
22	C16	Providing and placing steel reinforcements of TMT steel of grade Fe-500 /Fe 500D conforming to IS:1786 and having minimum elongation 14.5% , for reinforced concrete work at all levels, for all kinds of work, including transportation, cleaning, derusting, straightening, cutting, bending, binding in position with annealed wire and/or welding, providing concrete cover blocks, pins, separators, chairs, supports for reinforcement, etc. with all materials, labour, equipment, handling, testing, transportation to & from stores etc., preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer. (REINFORCEMENT STEEL WILL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)				-	-
23	i	For all works below ground level (except chimney shell)				-	-
24	a	High strength deformed bars	Mt	601	3.5134	-	-
25	ii	For all other works				-	-
26	a	Mild steel reinforcement bars	Mt	10	4.1350	-	-
27	b	High strength deformed bars	Mt	766	4.1350	-	-
28	C17	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section (including curved surfaces and chimney shell) for all elevations, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tying, nailing, caulking, bolting etc. and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer.				-	-
29	i	For all works below ground level (except chimney shell)	Sqm	1653	0.1996	-	-
30	ii	For all other works				-	-
31	a	Inner and outer faces of wind shield with slip form shuttering	Sqm	21960	0.4838	-	-
32	b	All other components of the superstructure including slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell attachments, chases/recesses in shell etc.	Sqm	725	0.5313	-	-
33	C18	Providing and fixing formwork in shell openings and pockets (above 0.1 sq.m surface area) including cutting, formation of shapes and all other operations required for making the required shape and size, removal of formwork, all complete as per specifications, drawings and instructions of the Engineer.	Sqm	124	0.5313	-	-
34	C19	Providing and placing in position at all levels, building paper (kraft paper) , as per IS:1397, between concrete surfaces including the cost of labour, material, etc. complete as per drawings and instruction of the Engineer.	Sqm	90	0.0211	-	-
35	C20	Providing and installing, at all levels, bitumen impregnated fibre boards , 12 mm thick, conforming to IS:1838, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Sqm	33	0.2216	-	-

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Sl. No.	Item Code No.	Description of Item	Unit	Quantity	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after deimal)	AMOUNT (Rs.) = RATE * QUANTITY
36	C21	Providing and filling, at all levels, bitumen sealing compound (hot applied type) conforming to IS:1834, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Kg	506	0.0647	-	-
37	C22	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting and installing miscellaneous steel parts to be embedded/cast in concrete (like staircase embeddings, corbel face plates, etc) at all positions and levels including the cost of all labour, materials and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per drawings and specification. (MATERIAL SUPPLY INCLUDING STR. STEEL PARTS IS IN THE SCOPE OF CONTRACTOR)	Mt	3	38.2015	-	-
38	C23-A	Fabrication and erection of high strength structural steel (E350) in built up section at shop conforming to IS:2062, in columns, beams, struts, monorails, stays, safety chains, ladders, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates, gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer, providing and applying intermediate, final and final finish coat of paint (blast cleaning, primer and paint shall be paid separately as per item no C23, D23 & E23), connection design & preparation of fabrication drgs, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 20 Deg C for welding over 20 mm and upto 40 mm & 66 Deg C for welding over 40 mm and upto 63 mm & 110 Deg C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, 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), etc all complete. (STRUCTURAL STEEL SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	Mt	75	17.5252	-	-
39	C23-B	Fabrication and erection of structural steel of grade E 250 in rolled/ built up section at shop conforming to IS:2062, mild steel rounds in columns, beams, struts, monorails, stays, safety chains, ladders, MS gratings, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates, gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, decking and seal plates, galleries etc. including blast cleaning, providing & applying primer, providing and applying intermediate, final and final finish coat of paint (blast cleaning, primer and paint shall be paid separately as per item no C23, D23 & E23), connection design & preparation of fabrication drgs, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts and nuts not payable), assembly, edge preparation, preheating / post heating if required, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, 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), etc all complete. (STRUCTURAL STEEL SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	Mt	225	17.5251	-	-

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Sl. No.	Item Code No.	Description of Item	Unit	Quantity	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after deimal)	AMOUNT (Rs.) = RATE * QUANTITY
40	C23-C	Extra over ST NO. A23 & B23 for blast cleaning of steel structures to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	Mt (of steel)	300	2.0336	-	-
41	C23-D	Extra over ST NO. A23 & B23 for providing and applying (by airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	Mt (of steel)	300	1.7543	-	-
42	C23-E	Extra over ST NO. A23 & B23 for providing and applying Finish coat of two-pack aliphatic isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	Mt (of steel)	300	1.7543	-	-
43	C24-A	Fabrication, erection and alignment of factory made chequered plate with mild steel conforming to IS:2062 in platforms, 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. (STRUCTURAL STEEL SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	Mt	66	12.4329	-	-
44	C25	Providing (supplying) 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.	Quintal	100	9.2228	-	-
45	C26	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and erecting, at all levels, structural steel flues (liners) complete with all bends, flanges, stiffeners, all other flue attachments, support system, collars, access manholes and gas sampling ports alongwith gaskets and other accessories, staying system, including the cost of all labour, material and equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. complete as per drawings and specifications. (STRUCTURAL STEEL SHALL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	Mt	600	16.0622	-	-
46	C26 (i)	Supply & application including blast cleaning of outer surface of steel flue liner to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	SqM	5628	0.0847	-	-

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47	C26 (ii)	Providing and applying (by airless spray technique) on outer surface of steel flue liner, an intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% $\pm 2\%$) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	SqM	5628	0.0731	-	-
48	C26 (iii)	Providing and applying on outer surface of steel flue liner, Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% $\pm 2\%$) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	SqM	5628	0.0731	-	-
49	C26-A	Application of suitable epoxy primer including grit/shot blasting of inner flue surface(Sa 2 ½ finish) , to fully cover the substrate material over all heights of chimney including cost of labour, material, tools & tackles etc. all complete as per drawings, specification, manufacturer's recommendation and engineer in charge. (EPOXY PRIMER WILL BE SUPPLIED BY BHEL AS FREE OF COST (FOC) ITEM)	SqM	5628	0.0755	-	-
50	C26-B	Installing borosilicate glass block lining over all heights of chimney by attaching it to inside surface of cleaned MS flue can, external exposed surface and internal surface of minishell, using suitable adhesive/membrane material under controlled temperature and humidity conditions mentioned in specification, including cost of skilled labour, material, tools & tackles, equipment required to create controlled temperature & humidity conditions inside chimney during installation under the expert supervision by borosilicate glass manufacturer during installation, mixing of two components adhesive membrane by automated mixing machines etc. all complete. Nominal adhesive/ membrane thickness shall be minimum 3 mm behind & between each block. A 1.5 mm thick layer should be troweled onto the liner as well as to the sides and back of each block before installation. Double buttering technique shall be used to ensure full bond of each block to the liner and to each other. Cost of application of adhesive/membrane is included in this item and shall not be paid separately. Installation of blocks shall be carried out as per specification, drawings, direction of engineer in charge and accepted by the customer. The surface properties of the installed lining system allow, without any significant re-entrainment of flue gas condensate, a flue velocity of atleast 18.3 m/s, contractor shall get the required surface properties of the lining system approved from customer. Contractor shall get installation procedure approved by BHEL/NTPC before installation including verification of installation procedure & workmanship standards of the lining system. (Borosilicate Glass Blocks, Adhesive and onsite supervision of borosilicate glass block lining supplier shall be provided by BHEL Free of Cost.)	SqM	5628	2.2446	-	-
51	C26-F	Providing (supplying) of C276 gutters/vanes/pipes, bends & its fittings and TIG or other specialised welding , etc complete/any other apprtenance required for withdrawal of acid from inside of flue liner to outside as per approved drawing over mild steel flue cans. This item includes surface preparation including weldables/consumables, equipment, material, surface finishing, sealing, testing for quality complete at all elevation as per specification. Measurement for payment shall be done for net weight of C-276 gutters/vanes/ pipes etc (weld thickness not to be considered) which is welded over liner surface.	Kg	1900	1.0552	-	-
52	C27	Providing, fabricating and installing at various locations and elevations of the chimney system the following miscellaneous mild steel items complete with the cost of all labour, material and equipment, transporting, lifting, setting in place, cutting, grinding, drilling, welding, bolts and bolting, anchor fasteners and anchoring, priming, painting, grouting etc. complete as per drawings and specifications: (MATERIAL SUPPLY INCLUDING STR. STEEL IS IN THE SCOPE OF CONTRACTOR)			-	-	-
53	a	Mild steel ladders with cage, hood access hatch, louvers, bird screens, hood drain basin covers and other miscellaneous mild steel items not specifically mentioned.	Mt	9	43.1382	-	-
54	b	32/40 mm nominal bore medium class tubular hand railing for stair case and internal and external platforms.	Mt	13	45.0556	-	-
55	c	Providing minimum 275 gsm Hot dipped galvanisation on mild steel parts as per specification.	Mt	11	17.3914	-	-

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56	d	Providing minimum 610 gsm Hot dipped galvanisation on mild steel parts as per specification.	Mt	11	29.5654	-	-
57	C29-A	Fabricating and installing in the liners, gas sampling and gas opacity measurement ports made from C276 pipe including the cost of all labour, materials, bolts and bolting, asbestos gaskets, cover plates & all other accessories, painting etc., complete as per drawings and specifications. Supply of C276 pipes, cover plate and accessories is excluded from the scope of this item. Measurement for payment shall be done for net weight of C276 pipe including flange plate/cover plate only (weld thickness not to be considered) which is welded over liner surface.	kg	100	0.3166	-	-
58	C30-A	Preparing detailed fabrication drawings, providing (supplying), fabricating and erecting above roof level, 2 mm thick titanium (Grade 2 as per ASME B265) sheet wrapped over chimney liner (as described in item no. 26A and insulation over it) external surface, including weldables/consumables, equipment, material, surface finishing, sealing, testing for quality complete at all elevation as per drawings and specification. Measurement for payment shall be done for net weight of Titanium strip only (weld thickness not to be considered) which is welded over liner surface. (MATERIALS SUPPLY INCLUDING TITANIUM IS IN THE SCOPE OF CONTRACTOR)	Mt	4	690.3593	-	-
59	C31	Preparing detailed fabrication drawings and after approval by the Engineer, providing , fabricating and installing at all levels, stainless plates (including stainless steel screws and fasteners) of grade AISI 316L and lead sheets beams and over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. including the cost of all labour material & equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drilling, welding of stainless steel using compatible & approved stainless steel electrodes, testing & machining flat and polishing the contact surfaces of stainless steel, coating the polished surfaces with silicone grease, etc., complete as per drawings and specifications. (ALL MATERIALS EXCEPT SS PLATE TO BE SUPPLIED BY CONTRACTOR. STAINLESS STEEL PLATE SHALL BE SUPPLIED BY BHEL FREE OF COST)				-	-
60	a	Stainless steel components.	kg	120	0.0623	-	-
61	b	Lead Sheets.	Kg	40	0.1657	-	-
62	C32	Preparing detailed fabrication drawings and after approval by the Engineer and as per actual site condition to withstand the wet flue gas, providing (supplying), fabricating and installing expansion compensator joints including bolster in the flue liner including all labour, material and equipment transporting, hoisting, fixing in position, drilling, cutting, bolts and bolting, etc. along with the user handbooks (giving details of installation, dismantling and maintainance procedures for the expansion joints), testing, approval form BHEL/NTPC etc complete as per drawings and specifications.	Sqm	72	12.6528	-	-
63	C33	Supplying ,Fabricated Ready to Install, spare expansion compensators alongwith bolster including the cost of all labour, material and equipment, accessories, transporting, proper packaging (for several years of storage), and delivery to site store complete in all respects as per drawings and specification.	Sqm	48	10.9845	-	-
64	C37	Supplying, and placing in position (at the beam supports bearings) Neoperne pads between concrete surface and mild steel including the cost of all labour materials, cutting to shape, grinding, drilling etc., complete as per drawings and specifications.	Cum	0.5	291.2304	-	-
65	C42	Supplying and installing ready mix castable refractory concrete at opening of chimney shell baffle wall and at other locations including all necessary arrangement for keeping them in position as per drawings and approval of Engineer.	Cum	5	8.5824	-	-
66	C43	Providing, laying and packing, at all levels, asbestos ropes at expansion joints including the cost of all labour material, etc. complete as per drawing and specifications.				-	-
67	b	12 mm (diameter) at expansion joints between linig segments.	Rm	573	0.0675	-	-
68	C47	Providing and installing, at all levels, resin bonded rock wool insulation slabs of density not less than 100 kg/cu.m with an installed thickness of not less than 100 mm, on the outside surface of steel flue liners, on the outside surface of brick liner, on the inside surface of concrete windshield, inside surface of concrete minishells, under the cast iron caps and wherever as directed by the Engineer, in two layers (each 50 mm thick) including the cost of all labour, material and equipment, transporting, lifting to all heights, etc., inclusive of plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc. welding of pins/studs to steel surfaces or embedding of pins/studs/anchors in concrete surfaces, fixing, cutting, cutting, lapping, binding, testing, etc. complete as per drawings and specifications.	Sqm	500	0.6048	-	-

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69	C49	Providing and packing, at all levels, loose rock wool insulation to a density not less than 100 kg/cu.m between the insulated minishells and brick liners at expanjoints between the lining segments and wherever as directed by the Engineer including the cost of all labour, material and equipment, filling, ramming, testing, etc. complete as per drawings and specifications.	Cum	10	4.6230	-	-
70	C50	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with acid and heat resisting black bituminous paint (conforming to type I(i) of IS:158) in as many number of coats (not less than four coats in any case) as required to give a paint DFT of not less than 150 microns including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	Sqm	500	0.1042	-	-
71	C51	Providing and painting, at all levels, inside surface of chimney shell, inside and outside surfaces of minishells, underside of roof slab and other concrete components/surfaces of the chimney as indicated in the drawings and wherever as directed by the Engineer, with epoxy phenolic coating system having total 220 microns DFT including the cost of all labour, materials, equipment, surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specifications.	Sqm	500	0.1042	-	-
72	C55	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with aliphatic acrylate system having total 170 microns DFT including the cost of all labours, material and & equipment, surface preparation, primer and finish painting, and consisting of : i) Two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 100 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. ii) finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 24 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer, protecting, cleaning etc. complete as per drawings and specification.	Sqm	9000	0.1454	-	-
73	C56	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with acid and heat resistant polyurethane paint in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification.	Sqm	20	0.1867	-	-
74	C57	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with epoxy phenolic coating having total 220 microns DFT in alternate bands of 'signal red' and 'bright white' colours including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification. Concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	Sqm	2600	0.1454	-	-

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75	C58	Providing and painting, at all levels, the inside surface of chimney shell above roof, horizontal surface of shell at top, underside of concrete roof slab, external surface of minishell above roof and wherever as directed by the Engineer, with epoxy phenolic coating having total 220 microns DFT including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Employer.	Sqm	400	0.1042	-	-
76	C59	Providing and laying over the chimney roof, a composite acid and heat protection treatment including providing of slopes for roof drainage including the cost of all labour, material and equipment, etc., complete as required for preparing the roof concrete, laying under bed of plain cement concrete screed to slopes, preparation of screed surface for painting, painting the screed surface with black bituminous paint, applying bitumenmastic in layers, laying acid resisting(A/R) mortar bed and laying 75 mm thick acid resisting(A/R) bricks with A/R mortar, curing, pointing(with phenolic based A/R cement), protection and cleaning, finishing, etc., complete as per drawing and specifications.	Sqm	330	1.5496	-	-
77	C60	Providing, fitting& fixing, outlet and overflow, cast iron roof drain heads (with gratings) in chimney roof including sockets, adapters, brackets, hangers, supports, etc., casting-in and jointing to 150 mm nominal bore rainwater pipes, grouting, etc. including the cost of all labour material and equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications.	Each	8	4.9120	-	-
78	C61	Providing, fitting and fixing rainwater pipes at all levels internally from the chimney roof to ground level upto the hood drain basin including shoes, bends, junctions, flanges,hoppers, sockets, adaptors, brackets, hangers, supports, anchor fasteners, spacers, pipe sleeve through shell, silicon or vulcanised butyl seaant, foam backing material, jointing, socketing, grouting, caulking, primer and finish painting etc. complete including the cost of all labour, material and equipment, complete as per drawing and specifications:					
79	a	150 mm nominal bore cast iron pipes.	Rm	32	1.0227	-	-
80	b	150 mm nominal bore medium class galvanised mild steel pipes.	Rm	300	1.1237	-	-
81	C62	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick mettalic concrete hardener topping over 38 mm thick under bed of concrete) over the grade level slab inside the chimney, including the cost of all labour, material and equipment, etc. complete as required for preparation of base, laying underbed and topping, finishing, rounding of edges, corners and junctions, curing, testing, etc. complete as per drawing and specifications. (CEMENT WILL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	Sqm	531	0.1945	-	-
82	C63	Providing and installing an electrically operated grill type steel roll-up door (with the bottom one third of the curtain in solid type) at chimney base, in opening of approx size of 65 square m, with all hardware and mechanisms, fittings and fixtures, locking arrangements, frames, fasteners, gear handle arrangement for standby manual operation, all electrical accessories such as motors, control systems, cables, etc. including the cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications.	Each	1	118.7966	-	-
83	C64	Providing (Supplying) and installing at any level and location, mild steel, double plate, personnel access doors , in shell openings of size 1.1m by 2.15m, complete with all fittings and fixtures, locking arrangements, frames, fasteners including the cost all labour, material and equipment, lifting to all heights, setting in place, grouting primer and finish painting, etc., complete as per drawing and specifications.	Each	1	8.9967	-	-

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84	C65	Supply, fabricating and fixing of <u>cleanout door</u> of size 650X825 mm. The door should be solid steel construction with inner plate 8mm and outer plate 6mm with suitable infill of stiffeners, & filled with insulation mateterial and all other fittings, fixtures, fasteners including the cost of painting etc complete as per drawings and specification. The door should be hinged type and providing with locking device in addition to swivel studs with wing nuts on remaining 3 edges. The should be openable both from inside & outside and removable insulation to be provided around door opening. The door shall be provided with a minimum two coats of acid & alkali resistant paint confirming to IS158 type-I to give a DFT of 75microns. The outside surface shall be provided with minimum 2 coats of Zinc redoxide primer and two coats of synthetic enamil paint.	Each	1	5.8522	-	-
85	C67	Supplying, fabricating and installing <u>mild steel hatches</u> at various locations in the chimney system complete with locking arrangements, frames, insulation, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including all labour, painting etc. complete as per drawings and specifications.				-	-
86	a	Hood Access Hatch	Each	1	13.9855	-	-
87	C68	Conducting <u>load testing on girders</u> for 1.25 times the full load, on ground , including provision of test bed and jacks, dial gauges and other supplies complete as per specification and drawings and approval of engineer in-charge.	Pair	1	96.4518	-	-
88	C69	Designing, supplying, fabricating and installing after approval by the Engineer, <u>non-metalic expansion joints</u> to seal gaps between chimney components and to meet the service requirements of wet stack and as given in the specifications alongwith the cost of all components of the expansion joint, insulation, galvanised bolts, nuts, washers, anchor fasteners and retaining bars, packing materials and reinforcements at the connecting ends and flanges, lapping etc. including cost of all labour and equipment, user hand books (giving details of installation, dismantling and maintenance procedures for the expansion joints) etc. complete as per drawings and specifications for:				-	-
89	a	Expansion joint <u>between ducts and liners</u> .	Sqm	50	7.9107	-	-
90	b	Expansion joint <u>between duct and chimney shell</u> .	Sqm	50	7.9107	-	-
91	C70	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	Cum	1	21.8233	-	-
92	C71	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). (CEMENT WILL BE ISSUED BY BHEL AS FREE OF COST (FOC) ITEM)	CUM	1	7.2154	-	-
93	C73	Supplying and erecting after approval by Engineer an <u>Elevator</u> from ground upto top of chimney with landing at various platform level complete as per spec. and drawings.	Lumpsum	1	2,678.1975	-	-
94	C75	Providing (supplying), fabricating and erecting, at all levels, FRP PIPES outside chimney flue liner within the subject scope of works, based on the approved design as per gas-flow-model study, complete with all bends, flanges, stiffeners, all other flue attachments, including support system, collars, connection with titanium pipes and other accessories, cost of all labour, material, equipment, surface finishing, sealing, testing for quality, transporting, lifting to all heights, setting in place, cutting, grinding, bending, curing, lamination, moulding, testing, guarantee/warranty etc. complete as per drawings, specifications, manufacturer's recommendations, relevant codes.	Kg	800	0.1729	-	-
95	ELECTRICAL BOQ FOR TWIN FLUE CHIMNEY					-	-
96	ELECTRICAL WORKS (Design, Engineering, Supply, Installation, testing & commissioning of					-	-
97	E1	415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects	Nos.	1	250.5417	-	-
98	E2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A SFU (TPN) outgoing complete in all respects. In case load requirement of chimney can not be met by 50 kVA lighting transformer after considering loading, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser..	Nos.	1	317.3435	-	-
99	E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 20 outgoing (16A SP MCBs)	Nos.	2	45.6061	-	-

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100	E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) incomer and 12 outgoing (16A, SP MCBs)	Nos.	2	39.5892	-	-
101	E5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control aviation lighting system.	Nos.	1	55.9628	-	-
102	E6	Aviation obstruction lights (mounted on door panel openable from interior) :			-	-	-
103	(i)	Medium intensity flashing light Type-A (LED type)as per ICAO standard having intensity of 20,000 candles depending upon background illuminance & flashing frequency 20-60/min with all accessories, photocell, timer etc.	Nos.	12	74.9701	-	-
104	(ii)	Temporary obstruction light located at diametrically opposite points at the top of chimney during period of construction with four fixture each .	Nos.	4	19.4023	-	-
105	E7	Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	Nos.	1	21.1476	-	-
106	E8	Flood light type 120W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	Nos.	6	13.4167	-	-
107	E9	Well glass type 30W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	Nos.	64	3.5637	-	-
108	E10	Well glass type 70W(approx) LED luminaire with fitting (integrated /retrofitted LED lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	Nos.	20	0.5589	-	-
109	E11	63Amp welding switch socket with plug & other Mounting accessories	Nos.	6	6.2333	-	-
110	E12	3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc.	Nos.	6	2.0695	-	-
111	E13	Al conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.			-	-	-
112	a	3 ϕ C x95mm ² Al for connection between ACDB/ELDB/ welding sockets	Mtrs.	1500	0.3449	-	-
113	b	3 ϕ Cx35mm ² Al for Lighting panel incoming supply	Mtrs.	1000	0.1768	-	-
114	c	4C x16mm ² Al for connection between ALP/ADB/Aviation Lights	Mtrs.	250	0.2249	-	-
115	b	4C x 2.5mm ² Cu Control cable for Aviation lighting system	Mtrs.	500	0.0682	-	-
116	E14	Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I.			-	-	-
117	a	2.5 mm ²	Mtrs.	2000	0.0285	-	-
118	b	4.0 mm ²	Mtrs.	5000	0.0367	-	-
119	E15	GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects.	Mtrs.	2000	0.1736	-	-
120	E16	PVC coated Flexible steel conduit 25mm dia with accessories	Mtrs.	100	0.0307	-	-

PROJECT: FLUE GAS DESULPHURIZATION (FGD) SYSTEM PACKAGE AT 2X490 MW NCTPP, DADRI, GAUTAM BUDH NAGAR, U.P.

Sl. No.	Item Code No.	Description of Item	Unit	Quantity	Factor (F)	RATE (Rs.) = FACTOR (F) * A / 100000 (Rounded off to two place after deimal)	AMOUNT (Rs.) = RATE * QUANTITY
121	E17	Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long.	Nos.	6	7.5030	-	-
122	E18	50x6 Lead Coated GI Strip for coronal band on flue and top platform	Mtrs.	100	0.1912	-	-
123	E19	Electrical equipment earthing materials including down conductors 50x6 GI Strip	Mtrs.	700	0.1687	-	-
124	E20	Electrical equipment earthing materials including down conductors 25x3 GI Strip	Mtrs.	700	0.0562	-	-
125	E21	14 SWG GI wire for equipment earthing	Mtrs.	2000	0.0169	-	-
126	E22	Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16SWG sheet steel.	Nos.	6	3.7485	-	-
127	E23	40mm dia MS rod for earthing of down conductor (BHEL will provide Earthing Rod free of cost)	Mtrs.	200	0.3749	-	-
128	E24	Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect.	Nos.	6	5.7322	-	-
129	E25	Telephone socket with junction box etc. complete	Nos.	6	1.9230	-	-
130	E26	Telephone handsets complete	Nos.	6	1.8566	-	-
131	E25	Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, conforming to relevant ITD (Indian Telephones department) specification			-	-	-
132		a) 24 pairs	Mtrs.	300	0.1331	-	-
133		b) 2 pairs	Mtrs.	100	0.0319	-	-
134	E26	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc.			-	-	-
135	a	150 mm wide	Mtrs.	400	1.0247	-	-
		TOTAL AMOUNT					'A'

NOTES:

1	Bidder's quoted price above shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.
2	Contractor shall fully understand description and Specifications of items mentioned in BOQ CUM RATE SCHEDULE as per ANNEXURE - 'AA'.
3	Conditional price bids with any deviation / clarification etc. are liable to be rejected. No cutting / erasing / over writing shall be done.
4	Quantities mentioned in BOQ cum Rate Schedule (ANNEXURE - 'AA') are approximate only and liable for variation on either side depending upon site / design requirement. The tentative contract value (CV) of entire scope of work shall be calculated as per finally quoted / accepted rates & the Quantities indicated in BOQ cum Rate Schedule as per ANNEXURE - 'AA'.
5	Contractor's total quoted price as per BOQ cum Rate Schedule (ANNEXURE - 'AA') will be taken as tentative only. The contractor undertakes to execute actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out on the basis of quantities actually executed at site and payments will also be regulated for the same.
6	In case of any mis-match in rate and amount on price discrepancy, the same will be dealt as per clause no. 1.4 of GCC.
7	Taxes (GST) shall be payable extra as per relevant clauses in Technical Conditions of Contract.