

E-TENDER SPECIFICATION

No. BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030

Scope of Work:

PART-A: PACKAGE-B1: BALANCE MAIN CIVIL PACKAGE INCLUDING FGD AND LHP AND GHP SYSTEM EXCLUDING RMC SUPPLY, SHOP FABRICATION AND ERECTION

AND

PART-B: INSTALLATION OF BATCHING PLANT, PRODUCTION OF REQUIRED GRADE OF CONCRETE, CONVEYING AND PLACEMENT/POURING OF CONCRETE IN FOUNDATION INCLUDING CEMENT, AGGREGATE, SAND ADMIXTURE ETC. COMPLETE.

AT

2X250 MW NSPCL BHILAI FGD PROJECT

VOLUME I – TECHNICAL BID

THIS TENDER SPECIFICATION CONSISTS OF:

Notice Inviting Tender	
Volume-IA	Technical Conditions of Contract
Volume-IB	Special conditions of Contract
Volume-IC	General conditions of Contract
Volume-ID	Forms & Procedures
Volume-IE	Technical Specifications
Volume II	Price Bid



CONTENTS		
Volume No	Description	Hosted in website bhel.com (Briefly) and detailed in BHEL e-Procurement Portal as files titled
NIL	Tender Specification Issue Details	(Part of <u>Vol-IA-3030</u>)
NIL	Notice Inviting Tender	(Part of <u>Vol-IA-3030</u>)
I-A	Technical Conditions of Contract	Vol-I-A-3030
I-B	Special Conditions of Contract	Vol-IB-SCC-3030
I-C	General Conditions of Contract	(Vol-I-CD-3030)
I-D	Forms & Procedures	(Vol-I-CD-3030)
II	Price Bid Specification as specified in E-Procurement Portal	Volume-II-3030

Bharat Heavy Electricals Limited

(A Government of India Undertaking)

Power Sector - Western Region

345-Kingsway, Nagpur-440001

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

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AT
2X250 MW NSPCL BHILAI FGD PROJECT

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

LAST DATE FOR Refer Notice Inviting Tender
TENDER SUBMISSION .

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

M/s.

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PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

GM (Purchase)

Place: Nagpur
Date:

3030

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



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Date: 23-09-2024

NOTICE INVITING TENDER (NIT)
NOTE: BIDDER MAY DOWNLOAD FROM WEB SITES

To,

Dear Sir/Madam,

Sub : **NOTICE INVITING E-TENDER**

Sealed offers in two part bid system (National competitive bidding (NCB) or International Competitive Bidding (ICB) are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-1) through E-Procurement Portal <https://eprocurebhel.co.in> only, for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

1.0 Salient Features of NIT

S No.	ISSUE	DESCRIPTION
i	TENDER NUMBER	
ii	Broad Scope of job	PART-A: PACKAGE-B1: BALANCE MAIN CIVIL PACKAGE INCLUDING FGD AND LHP AND GHP SYSTEM EXCLUDING RMC SUPPLY, SHOP FABRICATION AND ERECTION AND PART-B: INSTALLATION OF BATCHING PLANT, PRODUCTION OF REQUIRED GRADE OF CONCRETE, CONVEYING AND PLACEMENT/POURING OF CONCRETE IN FOUNDATION INCLUDING CEMENT, AGGREGATE, SAND ADMIXTURE ETC. COMPLETE. AT 2X250 MW NSPCL BHILAI FGD PROJECT
iii	DETAILS OF TENDER DOCUMENT	
A	Volume-IA	Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc.
B	Volume-IB	Special Conditions of Contract (SCC)
C	Volume-IC	General Conditions of Contract (GCC)
D	Volume-ID	Forms and Procedures
E	Volume-IE	Additional Annexure
F	Volume-II	Price Schedule (Absolute value).
iv	Issue of Tender Documents	Tender documents will be available for downloading from BHEL website (www.bhel.com) or e-procurement portal (https://eprocurebhel.co.in) as per schedule below: Start: 23/09/2024, Time :18:00 Hrs Closes: 30/09/2024, Time: 13:00 Hrs Brief information of the tenders shall also be available at

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S No.	ISSUE	DESCRIPTION	
		central public procurement portal. (https://eprocure.gov.in/epublish/app)	
v	DUE DATE & TIME OF OFFER SUBMISSION	<p>Date: 30/09/2024, Time :13:00 Hrs</p> <p>The bidder should submit their offer online only in e-Procurement portal at https://eprocurebhel.co.in</p> <p><u>Bidders are requested to upload their offer well in advance in order to avoid last minute congestion at this website.</u></p> <p>Hard copy bid or bids through E-mail / fax shall not be accepted.</p>	Applicable
vi	OPENING OF TENDER (Techno-Commercial Bid)	<p>Date: 30/09/2024, Time: 17:00 Hrs</p> <p>Notes:</p> <p>(1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day.</p> <p>(2) Bidder may depute representative to witness the opening of tender. For e-Tender, Bidder may witness the opening of tender through e-Procurement portal only.</p>	Applicable
vii	EMD AMOUNT	<p>Rs. 5,00,000/- (Rupees Five Lakh Only)</p> <p>Important Note: Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC..</p>	Applicable
viii	COST OF TENDER	NIL	Not Applicable
ix	LAST DATE FOR SEEKING CLARIFICATION	<p>One day before due date of offer submission. Along with soft version also, addressing to undersigned & to others as per contact address given below:</p> <p>1) Name: Biraj Roy Designation: Sr.Manager Deptt: Purchase Address: Floor no. 5 & 6,Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-9587886706 Email :biraj@bhel.in</p> <p>2) Name: Viveka nand Jha Designation: Sr.Manager Deptt: Purchase Address: Floor no. 5 & 6,Shree Mohini Complex, 345 Kingsway, Nagpur-440001</p>	Applicable

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S No.	ISSUE	DESCRIPTION	
		Mobile-9429198214 Email : vivekjha@bhel.in 3) Mr. P K Biswas Designation: GM Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Email: pkbiswas@bhel.in	
x	SCHEDULE OF Pre Bid Discussion (PBD)	---	Not Applicable
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	1) Shri Otem Dai, IAS (Retd.) 2) Shri Bishwamitra Pandey, IRAS (Retd.) 3) Shri Mukesh Mittal, IRS (Retd.)	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 Corrigendum), & on e-tender portal https://eprocurebhel.co.in and not in the newspapers. Bidders to keep themselves updated with all such information.	

2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed digitally using Class III DSC & uploaded in E-Procurement Portal, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**

3.0 Not Used

4.0 Unless specifically stated otherwise, bidder shall deposit EMD as per clause 1.9 of General Conditions of Contract.

For Electronic Fund Transfer the details are as below:-

NAME OF THE BENEFICIARY	BHARAT HEAVY ELECTRICALS LTD
ADDRESS OF THE COMPANY	5th Floor, SHREE MOHINI COMPLEX 345, KINGSWAY, NAGPUR
NAME OF BANK	STATE BANK OF INDIA
NAME OF BANK BRANCH AND BRANCH CODE	SBI, NAGPUR MAIN BRANCH , CODE-00432
CITY	NAGPUR
ACCOUNT NUMBER	40227423158
ACCOUNT TYPE	MC-C C Clean (C&I)
IFSC CODE OF THE BENEFICIARY BANK BRANCH	SBIN0000432
MICR CODE OF THE BANK BRANCH	440002002

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

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5.0 Procedure for Submission of Tenders:

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

Documents Comprising the e-Tender

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

a. Technical Tender (UN priced Tender)

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

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

b. Price Bid:

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.

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

DO NOT'S

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

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Digital Signing of e-Tender

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

The Requirement:

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

BHEL has finalized the e-procurement service Provider:-

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

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

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

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

1. Peter Raj, NIC, Ph: 9942069052

Email Support: support-eproc@nic.in

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

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

The contact details of the DSC certifying authority:-

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

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

Procedure for Submission of Tenders (To be used in case of Paper bid only): The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:

- ~~PART-I consisting of 'PART-I A (Techno Commercial Bid)' & 'PART-I B (EMD)' in two separate sealed and superscribed envelopes (ENVELOPE I & ENVELOPE II)~~
- ~~PART II (Price Bid) in sealed and superscribed envelope (ENVELOPE III)~~

One set of tender documents shall be retained by the bidder for their reference

6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below. (All pages to be signed and stamped) (To be used in case of Paper bid only):

Sl. no.	Description	Remarks
	Part-I A	
	ENVELOPE – I superscribed as: PART I (TECHNO COMMERCIAL BID)	

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	TENDER NO:- NAME OF WORK:- PROJECT:- DUE DATE OF SUBMISSION:- CONTAINING THE FOLLOWING:-	
i. —	Covering letter/Offer forwarding letter of Tenderer.	
ii. —	Duly filled in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above. Note: a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained. b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender	
iii. —	Supporting documents/ annexure/ schedules/ drawing etc. as required in line with Pre-Qualification criteria. It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph. no, FAX no, etc.	
iv. —	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc. pertinent to this NIT.	
v. —	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi. —	Duly filled in annexures, formats etc. as required under this Tender Specification/NIT	
vii. —	Notice inviting Tender (NIT)	
viii. —	Volume I A : Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc.	
ix. —	Volume I B : Special Conditions of Contract (SCC)	
x. —	Volume I C : General Conditions of Contract (GCC)	
xi. —	Volume I D : Forms & Procedures	
xii. —	Volume II (UNPRICED without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii. —	Any other details preferred by bidder with proper indexing.	

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

PART-II	
	PRICE BID consisting of the following shall be enclosed

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

	OUTER COVER	
	ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO-COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:	
i	○ Envelopes I ○ Envelopes II ○ Envelopes III	

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

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

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

9.0 PERFORMANCE OF BIDDERS:

- ‘Monthly Performance’ of the bidder for all the package covered under the tendered scope–shall be captured for the packages Under execution’. (refer Table-1)
- The monthly performance rating, shall be calculated as per Online Systems i.e. Contractor Performance Evaluation System (CPES) and Safety Performance Evaluation System (HSEPES). The scores assigned in HSEPES shall be scaled down to 10 and assigned in CPES against the category “HSE” (mentioned in Form F-15).
- **Explanatory note:**
 - Identified Packages (Unit wise) **Table-1**

Civil	Electrical and C&I	Mechanical
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i). Enabling works ii). Pile and Pile Caps iii). Civil Works including foundations iv). Structural Steel Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil)	i). Electrical ii). C&I iii). Others (Elect. and C&I) iv). Electrical Enabling Works	i). Boiler & Aux (All types including CW Piping if applicable) ii). Power Cycle Piping/Critical Piping iii). ESP iv). LP Piping v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) ix). Material Management x). FGD xi). ACC xii). Others (Mechanical)
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- 'Under execution' shall mean works in progress as per the following:
 - (a) Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
 - (b) Up to Steam Blowing in case of Boiler/ESP/Piping Packages
 - (c) Up to Synchronization in all Balance Packages

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

- 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.
- 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 27th of Evaluation Month or 5 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.
- Project on Hold due to reasons not attributable to bidder -
 - **Short hold:** Evaluation shall not be applicable for this period.
 - **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation shall not be considered for this period.

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- Performance evaluation as specified above in this clause is applicable to Prime bidder and Consortium partner (or Technical tie up partner) for their respective scope of work.

10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc. before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.

11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail and/or through e-procurement portal <https://eprocurebhel.co.in>, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.

12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.

13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc. or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.

14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.

15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), **if applicable**, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**

"Integrity Pact (IP)"

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

Sl. No.	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in
3.	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in

- (b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered

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into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

- (c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note:

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

Details of contact person(s):

Name:	Sh P K Biswas	Viveka Nand Jha/ Sr.Manager (Purchase)
Dept:	Purchase Department	
Address:	Floor No. 5 & 6, Shreemohini Complex, 345 Kingsway, Nagpur-440001	
Email:	pkbiswas@bhel.in	Vivekjha@bhel.in
Phone:	8617711054	9429198214

16.0 The Bidder has to satisfy the Pre-Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre-Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.

17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorized representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.

18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.

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

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

Note:-

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

20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.

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21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.

22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.

23.0 Void

24.0 The bidder shall submit/upload documents in support of possession of 'Qualifying Requirements' duly self-certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.

25.0 The bidder may have to produce original document for verification if so decided by BHEL.

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

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

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

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

28.1.1 Commitment by BHEL:

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

28.1.2 Commitment by Bidder/ Supplier/ Contractor:

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

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/

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supplier/ contractor as per extent guidelines of the company available on www.bhel.com and / or under applicable legal provisions.

29.0 Micro and Small Enterprises (MSE)

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

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

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

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

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

31.0 PREFERENCE TO MAKE IN INDIA:

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

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

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

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- III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means: -
- a. An entity incorporated established or registered in such a country; or
 - b. A subsidiary of an entity incorporated established or registered in such a country; or
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - d. An entity whose beneficial owner is situated in such a country; or
 - e. An Indian (or other) agent of such an entity; or
 - f. A natural person who is a citizen of such a country; or
 - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (III) above will be as under:

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation

- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.
 - b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.
 3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.
 4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

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

Note:

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

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

All overwriting/cutting, etc., will be numbered by bid opening officials and announced during bid opening.

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

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

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

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

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

35.0 Order of Precedence:

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

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

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

For BHARAT HEAVY ELECTRICALS LTD

(General Manager - Purchase)

Enclosure:

- 1.0 Annexure-1: Pre Qualifying Requirements.
- 2.0 Annexure-2: Check List.
- 3.0 ~~Annexure-3: Certificate by Chartered Accountant~~
- 4.0 Annexure-4: Reverse Auction Process Compliance Form
- 5.0 Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process
- 6.0 Annexure-6: RA Price Confirmation and Breakup
- 7.0 Annexure-7: Integrity Pact
- 8.0 Annexure-8: Undertaking as per PQR C4 of Annexure-1 i.e. PQR
- 9.0 Annexure-9: Declaration reg. Related Firms & their areas of Activities
- 10.0 Annexure-10: Declaration regarding minimum local content
- 11.0 Annexure-11: Declaration regarding compliance to restrictions under rule 144 (xi) of GFR 2017
- 12.0 Annexure 12: Important information.

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ANNEXURE-1

PRE QUALIFYING CRITERIA

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JOB	<p>Scope of Work:</p> <p>PART-A: PACKAGE-B1: BALANCE MAIN CIVIL PACKAGE INCLUDING FGD AND LHP AND GHP SYSTEM EXCLUDING RMC SUPPLY, SHOP FABRICATION AND ERECTION</p> <p style="text-align: center;">AND</p> <p>PART-B: INSTALLATION OF BATCHING PLANT, PRODUCTION OF REQUIRED GRADE OF CONCRETE, CONVEYING AND PLACEMENT/POURING OF CONCRETE IN FOUNDATION INCLUDING CEMENT, AGGREGATE, SAND ADMIXTURE ETC. COMPLETE.</p> <p style="text-align: center;">AT 2X250 MW NSPCL BHILAI FGD PROJECT</p>

S No	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Applicability	
A	<p>Submission of Integrity Pact duly signed (if applicable)</p> <p>(Note: To be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)</p>	Applicable	
B	<p>Technical QR</p> <p>Bidder shall essentially meet the Qualifying Requirements i.e. B.1(B.1.1 or B.1.2 or B.1.3) & (B.2.1 or B.2.2) as under, in the last seven years as on latest date of bid submission:</p> <p>B.1: Bidder should have Executed "Piling or Civil or Structure or 'Civil and Structural Works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these works" for any one of the following in the last seven years from latest date of bid submission:</p> <p>B.1.1) Executed One work of value not less than Rs. 380 Lakhs against single work order. OR B.1.2) Executed Two works each of value not less than Rs. 237 Lakhs against maximum two work orders. OR B.1.3) Executed Three works each of value not less than Rs. 190 Lakhs against maximum three work orders. And B.2.1: Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 2623 Cum in cumulative of maximum two running/completed contracts within a common period of</p>	Applicable	

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	"twelve consecutive months. OR B.2.2: Bidder should have executed Reinforced Cement Concrete (RCC) quantities of at least 1749 Cum in One running/completed contracts within a common period of "twelve consecutive months		
C-1	FINANCIAL TURNOVER Bidders must have achieved an average annual financial turnover (audited) of ₹ 315 Lakhs or more over last three Financial Years (FY) i.e. "2020-21, 2021-22 & 2022-23" or "2021-22 2022-23 & 2023-24"	Applicable	
C-2	NETWORTH (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive.	Applicable	
C-3	PROFIT Bidder must have earned profit in any one of the Five Financial Years as applicable in the last Five Financial Years (" 2018-2019, 2019-2020,2020-21, 2021-22 & 2022-23" or "2019-2020,2020-21, 2021-22, 2022-23 & 2023-24" as on date)". Bidders to submit audited Balance sheet and Profit & Loss statement for the years as supporting documents.	Applicable	
C-4	Bidder must not be under Insolvency Resolution Process or Liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/authorities, which will render him ineligible for participation in this tender, and shall submit undertaking (Annexure-8) to this effect	Applicable	
D	Assessment of Capacity of Bidder to execute the work	Not Applicable	
E	Approval of Customer (if applicable)	Applicable	
F	Price Bid Opening Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E		BY BHEL
G	Consortium tie-ups	Not Applicable	
<u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u>			
<u>Explanatory Notes for PQR B.1 (Technical)</u>			
<ol style="list-style-type: none"> 1. The evaluation currency for this tender shall be INR. 2. For the criteria (B.1), actual executed value shall be considered. 3. 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 			

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month of latest due date of bid submission as per following formula-

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

Where

P = Updated value of work

R = Value of executed work

X_N = All India Avg. Consumer Price index for industrial workers for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

X₀ = All India Avg. Consumer Price index for industrial workers for last month of work execution

Y_N = Monthly Whole Sale Price Index for All Commodities for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

Y₀ = Monthly Whole Sale Price Index for All Commodities for last month of work execution

Explanatory Notes for Technical Criteria (B2):

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

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considered for evaluation.

Explanatory Notes for PQR -C (Financial):

C-1:

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

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

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

Net worth = Paid up share capital + Reserves

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

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

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

Common Explanatory Notes:

1. For evaluation of PQR, in case Bidder alone does not meet the pre-qualifying technical criteria B1 above, bidder may utilize the experience of its Parent/ Subsidiary Company along with its own experience, subject to following:
 - a. The parent company shall have a controlling stake of $\geq 50\%$ in the subsidiary company (as per Format-1).
 - b. The Parent Company/ Subsidiary Company of which experience is being utilized for bidding shall submit Security Deposit(SD) equivalent to 1% of the total contract value
 - c. The parent/ subsidiary company and bidder shall provide an undertaking that they are jointly or severally responsible for successful performance of the contract (as per Format-2).
 - d. In case Bidder is submitting bid as a Consortium Partner, option of utilizing experience of parent/subsidiary Company can be availed by Prime Bidder only.
 - e. Parent Company/ Subsidiary Company of which experience is being used for bidding, cannot participate as a 'Standalone Bidder' or as a 'Consortium bidder'.

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2. Completion date for achievement of the technical criteria specified in the 'B' above should be in the last 7 years ending on the 'latest date of Bid Submission' of Tender irrespective of date of the start of work. Completion date shall be reckoned from the "Financial Year quarter of bid submission". (for e.g. -Work completed on 01.01.2014 shall be considered even if latest date of bid submission is 20.03.2021).
 3. "Executed" means the bidder should have achieved the technical criteria specified in the Common QR even if the Contract has not been completed or closed.
 4. In case the Experience/PO/WO certificate enclosed by bidders do not have separate break up of prices for the E&C portion for Electrical and C&I works (i.e. the certificates enclosed are for composite order for supply and erection of Electrical and C&I and other works if any), then value of Erection & Commissioning for the Electrical and C&I portion shall be considered as 15% of the price for supply & erection of Electrical and C&I.
 5. Following shall be complied with in case of consortium:
 - a. The Prime Bidder and Consortium Partner(s) are required to enter in to a consortium agreement and certify to BHEL regarding existence and validity of their consortium agreement in line with validity period mentioned in NIT.
 - b. Prime Bidder and Consortium partners shall be approved by Customer for being considered for the tender (applicable if customer approval is required).
 - c. Number of partners including prime Bidder shall be NOT more than 3 (three).
 - d. Prime Bidder alone shall necessarily comply with "B1Technical Criteria" except for mechanical package where B1 criteria is not applicable.
 - e. Prime Bidder and Consortium Partner shall together comply with the 'Pre-Qualification Requirements' specified for the respective category of technical requirement as per "B2 technical criteria".
 - f. Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified.
 - g. All other conditions shall be read in conjunction with clause no 23.0 of NIT.
 - h. Prime Bidder shall be the Bidder who has a major share of work.
 - i. Prime Bidder shall be responsible for the overall execution of the Contract.
 - j. Performance shall be evaluated for Prime Bidder and the Consortium partner for their respective scope of work.
 - k. In case the Consortium partner backs out, another consortium partner meeting the QRs, has to be engaged by Prime Bidder and if not, the respective work will be withdrawn and executed on risk and cost basis of the prime bidder.
 - l. In case Prime Bidder withdraws or insolvency / liquidation / winding up proceedings have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHEL
 - m. After successful execution of one work with a consortium partner under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.
 - n. The Consortium partner shall submit SD equivalent to 1% of the total contract value in

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addition to the SD to be submitted by the Prime Bidder for the total contract value.

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

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

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Format-1

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

To,

.....

.....

Dear Sir,

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

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

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

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

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Format-2

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

From,
Name:
Full Address:

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

To,

Dear Sir,

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

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

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

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

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

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

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

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

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ANNEXURE-2

CHECK LIST

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

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

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Website: www.bhel.com

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14	Declaration confirming knowledge about Site Conditions	Applicable/ Not Applicable	YES/NO
15	Declaration for relation in BHEL	Applicable/ Not Applicable	YES/NO
16	Non-Disclosure Certificate	Applicable/ Not Applicable	YES/NO
17	Bank Account Details for E-Payment	Applicable/ Not Applicable	YES/NO
18	Capacity Evaluation of Bidder for current Tender	Applicable/ Not Applicable	YES/NO
19	Tie Ups/Consortium Agreement are submitted as per format	Applicable/ Not Applicable	YES/ NO
20	Power of Attorney for Submission of Tender/Signing Contract Agreement Power of Attorney of Consortium Partner.	Applicable/ Not Applicable	YES/NO
21	Analysis of Unit rates	Applicable/ Not Applicable	YES/NO
22	Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process	Applicable/ Not Applicable	YES/NO
23	Annexure-6: RA Price Confirmation and Breakup	Applicable/ Not Applicable	YES/NO
24	Annexure-8: Undertaking as per PQR C4 of Annexure-1 i.e. PQR	Applicable/ Not Applicable	YES/NO
25	Annexure-9: Declaration reg. Related Firms & their areas of Activities (x) Other Tender documents as per this NIT.	Applicable/ Not Applicable	YES/NO
26	Annexure-10 Declaration regarding minimum local content	Applicable/ Not Applicable	YES/NO
27	Annexure-11: Declaration regarding compliance to restrictions under rule 144 (xi) of GFR 2017	Applicable/ Not Applicable	YES/NO

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

DATE :

AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

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ANNEXURE-3

Certificate by Chartered Accountant on letter head

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

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

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

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

3 (Strike off whichever is not applicable)

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

7 0x

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

9 0x

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

11 Date:

(Signature)

Name:

Membership Number:

Seal of the Chartered Accountant

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

ANNEXURE-4

Reverse Auction Process Compliance Form

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

To

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

Sub: Agreement to the Process related Terms and Conditions

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no. { BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030} dt. {.....}
This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per Annexure - 6 within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

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

With regards

Signature with company seal

Name:

Company / Organization:

Designation within Company / Organization:

Address of Company / Organization:

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

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ANNEXURE-5

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

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

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

ANNEXURE-6

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

To

- M/s. Service provider
- Postal address

CC: M/s BHEL
BHEL-PSWR, 345, KINGSWAY, NAGPUR-440001

Sub: Final price quoted during Reverse Auction and price breakup

Dear Sir,

We confirm that we have quoted.

Rs.{__in value & in words__} for item(s) covered under tender enquiry No. { BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030} dt.{...}

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

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

The price break-up is as given below.

Total =====
- Rs. in value & in words
=====

Yours sincerely,

For _____

Name:
Company:
Date:
Seal:

ANNEXURE-7

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi -110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context 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 **E-Tender Spec No: (BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030) Scope of Work: PART-A: PACKAGE-B1: BALANCE MAIN CIVIL PACKAGE INCLUDING FGD AND LHP AND GHP SYSTEM EXCLUDING RMC SUPPLY, SHOP FABRICATION AND ERECTION**

AND

PART-B: INSTALLATION OF BATCHING PLANT, PRODUCTION OF REQUIRED GRADE OF CONCRETE, CONVEYING AND PLACEMENT/POURING OF CONCRETE IN FOUNDATION INCLUDING CEMENT, AGGREGATE, SAND ADMIXTURE ETC. COMPLETE

AT 2X250 MW NSPCL BHILAI FGD PROJECT

(hereinafter referred to as "Contract"). 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 panel of Independent External Monitor(s) (IEMs), 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.

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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. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during 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 Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. 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.

2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

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 , terminate the contract, if already awarded, exclude from future business dealings and/ 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 (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above , the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee , whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

Section 5 -Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) 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 or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 6 -Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor(s) and ensure that all Sub-contractors also sign the Integrity Pact.
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

Section 7 -Criminal Charges against violating Bidders/ Contractors /Subcontractors

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 panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact.
- 8.2 The IEMs are 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 IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as Secret/Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs 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 IEMs the option to participate in such meetings.
- 8.5 The advisory role of IEMs is envisaged as that of a friend, philosopher and guide. The advice of IEMs would not be legally binding and it is restricted to resolving issues raised by a Bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some Bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.
- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process or during execution of Contract, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to the CMD, BHEL at the earliest. They may also send their report directly to the CVO, in case of suspicion of serious irregularities requiring legal/ administrative action. Only in case of very serious issue having a specific, verifiable Vigilance angle, the matter should be reported directly to the Commission. IEMs will tender their advice on the complaints within 30 days.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity; they are not expected to concern themselves with

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fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.

- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code / Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs. Issues like warranty/guarantee etc. shall be outside the purview of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

Section 9 -Pact Duration

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties till the final completion of contract for successful Bidder, and for all other Bidders 6 months after the Contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 -Other Provisions

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.
- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact 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 Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact

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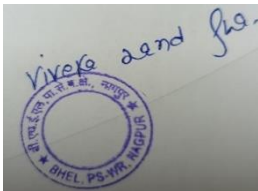
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.....
would be a preliminary qualification.

- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract. The fees/expenses on dispute resolution through mediation shall be shared by both the parties. Further, the mediation proceedings shall be confidential in nature and the parties shall keep confidential all matters relating to the mediation proceedings including any settlement agreement arrived at between the parties as outcome of mediation. Any views expressed, suggestions, admissions or proposals etc. made by either party in the course of mediation shall not be relied upon or introduced as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the dispute that is the subject of mediation proceedings. Neither of the parties shall present IEMs as witness in any Alternative Dispute Resolution or judicial proceedings in respect of the dispute that was subject of mediation.



For & On behalf of the Principal

(Office Seal)

Place-----

Date-----

Witness:_____

(Name & Address) _____

For & On behalf of the Bidder/ Contractor

(Office Seal)

Witness:_____

(Name & Address) _____

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ANNEXURE-8

UNDERTAKING

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

To,
GM-PURCHASE
BHEL-PSWR, 345, KINGSWAY, NAGPUR-440001

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: NIT/Tender Specification No: BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030

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

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

Place:
Date:

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

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ANNEXURE-9

DECLARATION

Date: _____

To,
GM-PURCHASE
BHEL-PSWR, 345, KINGSWAY, NAGPUR-440001

Sub: Details of related firms and their area of activities

Dear Sir/ Madam,

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

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

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

Regards,
(_____)

From: M/s _____
Supplier Code: _____
Address: _____

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

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Annexure-10

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

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

To,
GM-PURCHASE
BHEL-PSWR, 345, KINGSWAY, NAGPUR-440001

Dear Sir,

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

Ref: 1) NIT/Tender Spec No: BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030

2) All other pertinent issues till date

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

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

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

...

...

...

Thanking you,
Yours faithfully,

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

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

Note:

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

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ANNEXURE-11

DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017

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

To,
GM-PURCHASE
BHEL-PSWR, 345, KINGSWAY, NAGPUR-440001

Dear Sir,

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

Ref: 1) NIT/Tender Spec No: BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030,

2) All other pertinent issues till date

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

- a. is not from such a country
- b. has been registered with the Competent Authority *(attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT));*

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

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

Thanking you,
Yours faithfully,

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

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

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ANNEXURE-12

IMPORTANT INFORMATION

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

Postal Address:

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

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

Sr.Manager /Purchase, email: vivekjh@bhel.in,

Sr.Manager Purchase, Email: biraj@bhel.in

GM Purchase, Email: pkbiswas@bhel.in. Ph: +91 – 712 – 2858 – 633

- 1. Refer the abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' which is available at www.bhel.com on "supplier registration page" at the following link: https://www.bhel.com/sites/default/files/suspension_guidelines_abridged.pdf**
- 2. "Pradhan Mantri Kaushal Vikas Yojna:** The contractor shall, at all stages of work deploy skilled/semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute/Industrial Training Institute/ National Institute of Construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed/ certified by State/ Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled/semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs.100 per such tradesman per day. Decision of Engineer-in-Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding".
- 3. All Statutory Requirements as applicable for this project shall be complied with.**
- 4. BHEL Fraud Prevention Policy: "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."**

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5. Void

6. Following clause shall form part of the HSE documents issued under Chapter IX of Volume IB 'Special Conditions of Contract'

"In case of any financial deduction made by Customer for lapses of safety other than what is provided elsewhere in the contract, the same shall be charged on back-to-back basis on the defaulting contractor without prejudice to any other right spelt anywhere in the tender /contract".

7. BHEL Fraud Prevention Policy: "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."

8. The clause 2.7.9.1 below is added under the heading "Rights of BHEL" of General Conditions of Contract Volume-IC GCC:

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

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

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

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9. Acceptance of Bank Guarantee (BG)

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

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

“Bank Guarantee issued by:

a. Any of the BHEL consortium bank listed below:

State Bank of India
ABN Amro Bank N.V.
Bank of Baroda
Canara Bank
Citi Bank N.A.
Corporation Bank
Deutsche Bank
HDFC Bank Ltd.
The Hongkong and Shanghai Banking Corporation Ltd
ICICI Bank Ltd.
IDBI Ltd.
Punjab National Bank
Standard Chartered Bank
State Bank of Travancore
State Bank of Hyderabad
Syndicate Bank

b. Any public sector Bank (other than consortium banks) with a clause in the text of Bank Guarantee that **“It is enforceable at Nagpur, Maharashtra”**.

c. Any private sector banks, with a clause in the text of Bank Guarantee that **“It is enforceable by being presented at any branch of the bank”**.

Note: “Bank Guarantees issued by Co-operative Banks are not acceptable”.

10. Broad Terms & Conditions of Reverse Auction:

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

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

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

Note:-

1. No benefits to MSE bidders w.r.t Reverse Auction Guidelines as available on www.bhel.com against works contract.

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2. In case of enquiry through e-procurement the sealed electronic price bid (e-bid) is to be treated as sealed envelope price bid.
3. Reverse Auction will be conducted if two or more bidders are techno-commercially qualified. In case of two or three qualified bidders, there shall be no elimination of H1 bidder (whose quote is highest in sealed envelope price bid). **In case of four qualified bidders, the H1 bidder shall be eliminated whereas in case of five qualified bidders, H1 & H2 bidders shall be eliminated. However, in case of six or more qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest.** Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of qualified bidders is odd (e.g. if 7 bids are qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of qualified bidders who are MSE or qualifying under PPP-MII, Order 2017, *provided their bids are within their respective margin of purchase preference {presently 15% for MSEs and 20% for PPP-MII, or as amended from time to time}.*

In case of multiple H1 bidders, all H1 bidders (except MSEs and bidders qualifying under PPP-MII, Order 2017, who are within the margin of purchase preference) shall be removed provided minimum two bidders remain in fray, else no H1 removal

11. Bidder to strictly follow all the necessary guidelines issued by Customer, District Magistrate, State Government and Central government to control Pandemic/Epidemic outbreak. The related towards quarantine Centre/Medical expenses etc., if any, shall be in the bidder's scope
12. **-Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC**
13. **Clause no. 2.24 of GCC PERFORMANCE GUARANTEE FOR WORKMANSHIP:** The guarantee period shall commence from the date of Completion of contract as certified by BHEL Engineer.

14. Overrun Compensation (Clause no. 2.12 of GCC) shall not be applicable

15. PRICE VARIATION COMPENSATION (Clause 2.17 of GCC) shall not be applicable

16. Conflict of Interest among Bidders/ Agents:

"A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. **The bidder found to have a conflict of interest shall be disqualified.** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

a) they have controlling partner (s) in common;

or

b) they receive or have received any direct or indirect subsidy/ financial stake from any of them;

or

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.....
c) they have the same legal representative/agent for purposes of this bid; **or**

d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder;
or

e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; **or**

f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following:

1. The principal manufacturer directly or through one Indian agent on his behalf; **and**
2. Indian/foreign agent on behalf of only one principal;

or

g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; **or**

h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.

17. Clause for Existing Contractor:

Existing Contractor to whom the subject work has been awarded earlier by BHEL shall not be eligible to quote against this tender.

- 18. Subject work (For PART-A) was under execution by other agency. The scope of works under this tender specification also include works left over by the earlier agency on “as is where is” basis as detailed in the TCC (For PART-A). Apart from above information, the bidder should go through all the conditions of the tender prior to bidding**

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED

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**PART-A -PACKAGE-B1: BALANCE MAIN CIVIL PACKAGE INCLUDING FGD AND
LHP AND GHP SYSTEM EXCLUDING RMC SUPPLY, SHOP FABRICATION AND
ERECTIONAT 2X250 MW NSPCL BHILAI FGD PROJECT**

Sl. No	DESCRIPTION	Chapter
Volume-IA	Part-I: Contract specific details	
1	Project Information	Chapter-I
2	Scope of Works and Technical Specifications	Chapter-II
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V
6	Time Schedule	Chapter-VI
7	Terms of Payment	Chapter-VII
8	Taxes and other Duties	Chapter-VIII
9	SPECIFICATIONS AND DRAWINGS	Chapter-IX
10	APPENDIX	Chapter-X
11	FIELD QUALITY LAB EQUIPMENTS	Annexure 1
12	Bill of Quantities and % Weightage of Individual Items	Chapter-XI

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-I: Project Information

1.0	Project Information:
1.1	<p><u>INTRODUCTION:</u></p> <p>The proposed site is located at Bhilai (East) in Durg district of Chhattisgarh.</p> <p>Latitudes : 21.21° N Longitudes : 81.38° E Place : Bhilai (East) District : Durg Nearest Railway Station : Bhilai (4KM) Nearest Airport : Raipur (35KM) Nearest Town/City : Bhilai (10KM)</p>

Above information furnished are for general guidance of Contractor. However, Contractor has advised to visit the site and appraise himself about the conditions of site and infrastructure available in the area for fulfilling their commitments under the contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II: Scope of Work

2.0 **SCOPE OF WORK**

PACKAGE-B1: Balance Civil & Architectural works of Lime Stone Storage Silo, Crusher House, Lime Conveyers, LTP-1, Truck Tippler, LHP & GHP Pump Houses, LHP MCC, Gypsum Shed, Cable Rack, DG Foundation, Day Silo, Paving, Roads & drains, Misc. buildings/foundations etc.

GENERAL SCOPE OF WORK

This tender specification is for Civil, & Architectural work including supply of raw materials, consumables, & bought out items, storage, handling/transportation of raw materials for construction activities at site for all facilities of 2x250MW NSPCL Bhilai FGD Project and handing over the facilities/structures to BHEL/employer for further equipment installation and commissioning as per the scope of the tender documents including structures of GHP & LHP System mentioned in Customer specification. The detailed scope of work and the technical requirements for the work to be executed under this specification shall be as per the approved drawings, technical specifications enclosed in Section-C and Section-D of the tender documents.

Any other building/facility/structure that would be required as per system design requirements but not covered in Section-A of the tender documents is also in the scope of the bidder.

Section-A, Section-B, Section-C and Section-D are enclosed as VOL-IE and form part of the tender/scope of work.

2.1 **CIVIL, ARCHITECTURAL & STRUCTURAL WORKS**

This tender specification for civil, & architectural work covers construction of all the civil, architectural related to buildings, foundations, equipment foundations, etc., which includes earth work, foundation works, plain & reinforced cement concrete, reinforcement, scaffolding, form work, shoring & strutting, masonry work, floor finishes including dado & skirting, plastering, painting, roof finishes, doors, windows, fire proof doors, grouting, ventilators, rolling shutters, internal & external plumbing, earthing mat/grid with earth pits, water supply, water proofing, drainage & sewerage, fencing, gates, roads, MS embedment and foundation bolt / anchor bolts etc. including supply of all materials, consumables, labor, tools & plants, transportation and storage, quality control, sample testing etc. all complete as per specifications and approved drawings for proper and successful execution of the job of all required facilities of 2x250MW NSPCL Bhilai FGD Project.

2.2 **ALSO INCLUDED IN THE SCOPE**

Unless otherwise specified, the work to be provided by the contractor for the items shall include but not be limited to the following:

1. Furnishing all labour, materials, supervision, construction plans, equipment, supplies, transport to & from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II: Scope of Work

necessary for the proper completion, maintenance and handing over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provided by the engineer during the course of works.

2. Dismantling of existing pavements/facilities for construction of FGD works and restoration of the same as per requirement.
3. Enabling works for establishing of its own infrastructures including approach road to its storage open/close facilities etc. without any extra cost to BHEL.
4. The work shall be carried out both below and above ground level and shall include basements, equipment foundations, grouting, slabs, beams, columns, footings, rafts, walls, brick walls, stairs, trenches, pits, access roads, culverts, buildings, finishes, complete architectural aspects, drainage, sanitation, water supply etc.
5. Access roads to all buildings/facilities including construction and maintenance of temporary access roads for approach to the building/facilities for construction/erection activities.
6. 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.
7. Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
8. Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
9. Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
10. Carrying out required survey and establish levels and coordinates at suitable intervals from existing grid levels and coordinates furnished by the owner established bench marks, setting out the locations and levels of proposed structures, constructions and marking of reference pillars and other identifications works etc as required. The contractor shall provide the owner / BHEL such an assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing any work and the quality, weight or quantity of any material used.
11. Providing all incidental items not shown or specified but reasonably implied or necessary for the successful completion of the work in accordance with contract. Quality of work to customer's satisfaction and system requirements is the essence of these certifications. The contractor in all respects will organize his work, systems, environment, process control documentation, tools, plant, inspection, measuring and testing equipments etc. as per instructions of BHEL engineer. The contractor shall also comply with applicable legislation and regulations with regard to health, safety and environmental aspects for minimizing risk arising from occupational health, safety hazards, controlling pollution and wastages.
12. The customer M/s NSPCL and / or their consultant 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 implications to BHEL.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II: Scope of Work

13. The scope of work also includes attending meetings at BHEL office at site / BHEL Nagpur office, BHEL engineering centers/Units, Owner's place in Site or at places decided by Owner as and when necessary for review, discussions, coordination, etc.
14. Contractor shall set up suitable storage facilities for Cement, sand, deck plate, bolts, aggregate, reinforcement steel, structural steel, handrail, grating, foundation bolts, shuttering item, inserts, water proofing material, admixture other BOI's etc and all are stored properly as per IS recommendation/technical specifications/manufacturer recommendation. Wastage due to lapse of storing will be because of contractor.
15. All item to be supplied as per customer/ NSPCL specification with prior approval from NTPC/NSPCL/BHEL.
16. Contractor shall maintain proper records of test reports, bar bending schedule and to be produced to concerned Engineer whenever required.
17. Contractor shall be responsible for coordinating with the erection agency as well as BHEL for maintaining proper line, elevation, coordinate as per drawing. Any mismatches/ fouling with existing structure to be highlighted to BHEL. Dismantling of structure due to lack of coordination/Survey will be on contractor's account.
18. Preparation and obtaining approval from BHEL/NTPC/NSPCL for construction methodologies/ procedures.
19. Excavation of earth and backfilling including dewatering of excavations for foundations, trenches, pits, etc. till the construction of the same is completed and disposal of surplus earth.
20. Preparation of detailed working drawings and bar bending schedule for all reinforced concrete work and getting them approved before start of work by the BHEL Engineer.
21. Taking delivery of materials (BHEL Scope) from BHEL stores/ storage yards for utilization in construction work under this package.
22. Fabrication and fixing of templates/frames, inserts, fixing of anchor bolts, sleeves, and embedments etc. in concrete.
23. Supply of all instruments and personnel for conducting necessary tests at site as specified/as directed by the Engineer.
24. Arranging for joint checking (with BHEL/BHEL's Customer/ Consultant) of all site construction activities Preparation of joint protocols for each & every activity and maintaining quality records for audit/inspection as per approved FQP by BHEL.
25. 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 imply and necessary for completion of the job as a whole all as desired and as directed by the engineer.
26. In case of any discrepancy between item description, relevant drawing and/or specification Clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.
27. Installation of necessary amenities- temporary infrastructure for construction activities at Project site locations- following are the minimum amenities to be provided by the bidder without any extra cost and removal/disposal of the same in environment friendly manner after its intended use/completion of complete scope of work:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II: Scope of Work

- a. Labour rest sheds near work spot.
- b. Canteen facility creation.
- c. Drinking water facility.
- d. Labour toilets near work spot in sufficient nos. with regular cleaning & maintenance arrangement
- e. Labour colony should have all hygienic condition, dining hall, toilets, proper sewerage system, good drinking water arrangements.

28. Work will be awarded on as and when basis at R & C of the existing agency. Quotated rates shall be inclusive of the following and no separate payment shall be done for the same

- a. **Dewatering of all excavated pits, foundations, structure etc.**
- b. **Finishing of casted structure at all height and depth, cleaning bolts, pockets and embedments etc. required for erection purpose.**
- c. **Bidder will provide the necessary assistance to BHEL for carried out the joint measurement of left out job.**
- d. **Payment for TMT that already placed in position will not be measured for the payment.**

NOTE: In case of non-compliance of above points, BHEL will make penal recoveries at the rate decided at site mutually by BHEL and contractor or as imposed by NTPC/NSPCL.

29. Setting Up of Laboratory Works: The contractor shall set up his own laboratory in the very close vicinity of the work site as per indicative field QA&QC laboratory set up (enclosed with this tender document as Annexure 1) and as the directions of engineer-in-charge. The laboratory shall be equipped with latest testing equipment in sufficient number to carry out all the tests as required under a contract. The contractor should ensure that the equipment is available well in advance of starting of the work to avoid stoppage of work on this account. All the tests shall be carried out by the contractor in the presence of the Engineer's representative and a joint record of all observations and results thereof shall be maintained, and available with the Engineer. **Bidder can tie up with approved third party Lab for testing.**

30. BHEL at its discretion may include other area works, limited to 15% of awarded contract value, although not be specially mentioned in above scope of works. All such incidental works not specified but reasonably implied and necessary for completion of the project as a whole, contractor shall execute the works as desired and as directed by BHEL engineer which is binding on the contractor. The item rates & contract conditions shall remain unchanged for such works.

31. Implementation of Site Data Digitalization (SDD) for raising of invoices, uploading of Form-14 and Integrated Project Management System (IPMS).

2.3 WORKS BY OTHER Agencies

- 1) RMC (Ready mix Concrete) Supply as specifically mentioned in Item Rate Description. BHEL will supply free RMC (Ready mix Concrete) in those item only where it is mentioned free in item description.
- 2) Supply of Shop fabrication and erection of structure.
- 3) M.S Cladding & Deck sheet Supply and fixing.
- 4) Chimney Civil work.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-II: Scope of Work

2.4 SITE VISIT

The tenderer is 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 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.

2.5 HANDLING OF MATERIALS ISSUED BY BHEL:

- 2.5.1 Materials shall be issued by BHEL based on the weight basis/ linear measurements & sectional weight. However, on specific request of the contractor **“as a special case to expedite the job”** the consignment received at BHEL stores can directly be diverted to the work site following issuance procedure of BHEL. Such direct issues shall be as per the Challan/dispatch document/LR received with the consignment. In such cases, Contractor shall do unloading of materials from trucks/lorry at their own cost.
- 2.5.2 All materials shall be stacked, stored above ground level **by use of concrete or wooden sleepers. No materials shall remain on ground at any time.** All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipments like winches, D-Shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. Required for such handling of steel from BHEL stores/storage yard etc. Shall be arranged by contractor within quoted/accepted rates.
- 2.5.3 The contractor shall take delivery of the materials from the designated place within the project premises at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc. wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & No extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel's to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent works. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering. Excessive rusting of steel in custody of agency/contractor must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occur rendering the same unusable, then such quantity of steel shall be replenished by the contractor without any cost & time implication to BHEL.

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2.5.4 In case of theft/damaged of BHEL issued material, contractor shall arrange the material without any cost & time implication.

2.6 **ISSUE OF STEEL:**

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

- i. Structural Steel: Weight basis (Unit – MT)
- ii. Reinforcement Steel and Earthing Rod, foundation bolts: Weight basis (Unit-MT)
- iii. GI Gratings: Weight Basis(Unit- MT/As Received from manufacturer)
- iv. MS Rails: Weight Basis (Unit-MT)

2.6.2 All the steel (structural, reinforcement, earthing rod/GI flats, GI gratings, foundation bolts, MS Rails) issued by BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs etc. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS/BS/EN specifications.

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

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

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- 2.6.3 The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores, no claims for extra payment because of issue of non-standard length will be entertained.
- 2.6.4 The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.
- 2.6.5 The contractor shall submit to BHEL, a statement indicating estimated quantity of **cement and steel** required during a quarter. In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.
- 2.6.6 Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

SL No.	ISSUE OF MATERIALS	MAX QUANTITY IN CONTRACTORS STORE
01	Reinforcement steel, earthing rod/GI flat, GI grating, Foundation bolts,	Consumable in ONE MONTH
02.	Cement	ONE MONTH

- 2.6.7 Bidders shall ensure that no lamination material is taken over by them from BHEL.
- 2.6.8 The contractor must note that cement and steel required for the contractor's enabling job like store/ site office/batching plant/temporary woks etc. shall be arranged by the contractor at his own cost.

2.7 RETURN OF MATERIALS

- 2.7.1 ~~Return of Cement: Sealed cement bags remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned promptly, (within 15 days from assessment) if BHEL/ engineer is satisfied of the physical condition of the cement. Return of such cement to the project stores / place as identified within the project area by engineer/ BHEL will not be entitled to handling and incidental charges. Surplus sealed and good conditioned cement bags will be taken back on weighment basis.~~
- 2.7.2 **Return of Reinforcement Steel and Structural Steel including Scrap:** All surplus steel and all wastage materials will be taken back on weighment basis. Surplus, unused and untampered steel shall be sorted section-wise and returned separately at a place directed by BHEL/Engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges. All wastage / scrap (including melting scrap, wastage, and unusable scrap) shall be promptly returned to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any transportation and incidental charge. Scrap for reinforcement steel and structural steel shall be returned separately.

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- 2.7.3 **Return of Ready Mix Concrete: Under no circumstances Ready Mix Concrete will be taken back. Bidder have to plan accordingly for proper use of Ready Mix Concrete.**

2.8 **Scrap and Serviceable Materials:**

- 2.8.1 All structural steel of length above 2 M except M.S Plate shall be considered as **serviceable materials** provided the materials is in good and acceptable condition. Structural steel in length less than 2 M Shall be treated as scrap.
- 2.8.2 Plates having both side greater than 1 Meter OR if any side is less than 1 M but greater than 0.5 M and the total area is equal or greater than 2 sq. Meter shall be considered as **serviceable material**.
- 2.8.3 All pipe measuring 2 M and above in length shall be treated serviceable materials provided they are in good and acceptable condition. Pipe in less than 2 M length shall be treated as Scrap.
- 2.8.4 All TMT measuring 3 M and above in length shall be treated as **serviceable material** provided they are in good acceptable condition. TMT in less than 3 M shall be treated as scrap.

2.9 **Cement, Steel Consumption and wastage for BHEL issued material:**

2.9.1 **Reinforcement Steel, MS earthing rod, GI gratings, Foundation bolts and MS Rails Consumption**

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

2.9.1.1 Actual consumption = Issue – Surplus.

2.9.1.2 Surplus = un-tampered, unused, uncut QTY of steel **including serviceable material returned** by the contractor to BHEL store along-with relevant documents.

2.9.1.3 Wastage = Actual consumption – Theoretical consumption.

2.9.2 **Reinforcement Steel, MS earthing rod, GI gratings, Foundation bolts and MS Rails Wastage**

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

Wastage and scrap shall be as per actual weight basis.		
Sl no.	Reinforcement steel & MS earthing rod	Basis of issue & penal recovery

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R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
R-2	Wastage limited to plus THREE percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.	Free
R-3	Wastage beyond THREE percent (+3%) of the theoretical consumption above (R-1).	Penal rate

2.9.3 Structural Steel (Rolled Sections and Plates etc.) Consumption

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

2.9.3.1 Actual consumption = Issue – Surplus.

2.9.3.2 Surplus = un-tempered, unused, uncut quantity of steel **including serviceable material** returned by the contractor to BHEL store.

2.9.3.3 Wastage = Actual consumption – Theoretical consumption.

2.9.4 Structural Steel Wastage

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

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

2.9.5 Ready Mix Concrete Consumption: - The theoretical consumption of various grade of based on approved construction drawing. Quantity shall be calculated considering the volume of concrete as per approved drawing. No extra cost shall be payable to you for any deviation in quantity of Ready Mix Concrete received from the Batching Plant and actual use at site.

2.9.5.1 Ready Mix Concrete Wastage Allowable wastage: +1.5% of the theoretical consumption shall be considered as allowable wastage.

2.10 Reconciliation of Materials:

BHEL-PSWR (VOL-I-A- TECHNICAL BID SPECIFICATION)

E-Tender Spec. No: BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030

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- 2.10.1 The contractor shall submit a reconciliation statement of cement and steel issued to the contractor with each RA Bill.
- 2.10.2 At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available in the contractor custody at site.
- 2.10.3 At the time of submission of bills, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then, BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.
- 2.10.4 The reference drawings for actual material consumption to be used for the purpose of reconciliation shall be drawings prepared by the BHEL and drawings approved by BHEL for fabrication works and such other drawings approved by BHEL. This shall also include the bar bending schedule prepared by the contractor and approved by BHEL.

2.11 Recovery of Materials (Penal Rates) against BHEL issued material:

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

Sl. No.	Items	Penal Rates (Rs.)
P-1	Reinforcement steel and MS earthing rod/GI flat	75,000 per MT
P-2	MS Flats, beams, channel, angels etc. (Rolled Sections)	75,000 per MT
P-3	Foundation bolts, inserts/embedment, if supplied by BHEL	1,00,000 per MT
P-4	Ready Mix Concrete M-7.5	4000 per Cum
P-5	Ready Mix Concrete M-10	4200 per Cum
P-6	Ready Mix Concrete M-15	4400 per Cum
P-7	Ready Mix Concrete M-20	4600 per Cum
P-8	Ready Mix Concrete M-25	5200 per Cum
P-9	Ready Mix Concrete M-30	5400 per Cum
P-10	Ready Mix Concrete M-35	5500 per Cum

Please note Penal Rate will be 1.3 Times the actual cost to BHEL or Rate mentioned in Table whichever is higher.

2.12 PROCUREMENT AND TESTING OF MATERIAL BY THE CONTRACTOR:

Material required for the entire job like cement, windows, doors, ventilators, rolling shutter, sanitary fixtures, painting & finishing material, electrical fittings and wiring material and all other material required for the completion of entire scope have to be arranged by the contractor as per technical specification from approved source/supplier of NTPC/NSPCL. BHEL reserves the right to reject any

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material not found satisfactory. Rates quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of BHEL/NTPC/ NSPCL representative.

2.13 RECORD FOR MATERIALS CONSUMED:

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-a-vis actual consumption of specified materials, such as cement, reinforcement steel, structural steel, grouting compound, 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.

2.14 SITE DRAINAGE

All water including sub-soil water which may accumulate on the site during the progress of the works, including monsoon period shall be removed by the contractor from the site to the satisfaction of the engineer. All such expenditure on de-watering shall be deemed to be included in quoted rates.

2.15 INSPECTION AND STAGE APPROVAL OF THE WORK:

The owner or his duly authorised 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 / third party appointed by BHEL and in the form of joint protocols without any extra claims and loss of time and amount. 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.

2.16 UNCOVERING AND MAKING GOOD:

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.

2.17 GATE PASS:

- THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS OF GATE PASS FOR HIS VEHICLE, T&P ETC. AS PRESCRIBED AND INSTRUCTED BY THE NSPCL /CISF AT HIS OWN COST, EACH GATE PASS HAS TO BE ENDORSED BY THE NSPCL / CISF BEFORE THE PASS BE USED. IN CASE OF TERMINATION OF THE SERVICE OF ANY OF T&P OR VEHICLE DURING THE CONTRACTUAL PERIOD, THE CONTRACTOR SHALL HAVE TO SURRENDER THE GATE PASS TO THE NSPCL/CISF

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AT THE END OF THE PROJECT ALL THE GATE PASSES ENDORSED BY THE NSPCL/ CISF FOR USE OF THE CONTRACTOR'S VEHICLE, T&P SHALL HAVE TO BE RETURNED.

- VALID RC BOOK, INSURANCE, FITNESS CERTIFICATE, ROAD TAX CERTIFICATE, PUC, DRIVING LICENSE, ETC. IS REQUIRED FOR GATE PASS FORMALITIES OF ALL VEHICLES. GOODS CARRYING CERTIFICATE IS ALSO REQUIRED FOR GOODS CATEGORY VEHICLES. GATE PASS FORMALITIES MAY TAKE TIME, SO CONTRACTOR HAS TO PLAN WELL IN ADVANCE ACCORDINGLY.
- THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS OF GATE PASS FOR HIS EMPLOYEES / WORKERS AS PRESCRIBED AND INSTRUCTED BY THE NSPCL /CISF AT HIS OWN COST, EACH GATE PASS HAS TO BE ENDORSED BY THE NSPCL / CISF BEFORE THE PASS BE USED. IN CASE OF TERMINATION OF THE SERVICE OF ANY OF HIS EMPLOYEE DURING THE CONTRACTUAL PERIOD, THE CONTRACTOR SHALL HAVE TO SURRENDER THE GATE PASS ISSUED TO THE EMPLOYEES TO THE NSPCL / CISF. AT THE END OF THE PROJECT ALL THE GATE PASSES ENDORSED BY THE NSPCL / CISF FOR USE OF THE CONTRACTOR'S EMPLOYEES SHALL HAVE TO BE RETURNED.
- POLICE VERIFICATION AND MEDICAL FITNESS CERTIFICATE OF ALL WORKERS / EMPLOYEES OF AGENCIES IS MUST FOR GATE PASS FORMALITIES. CONTRACTOR HAS TO ARRANGE THE SAME AT HIS OWN COST. GATE PASS FORMALITIES MAY TAKE TIME, SO CONTRACTOR HAS TO PLAN WELL IN ADVANCE ACCORDINGLY.

2.18 SAFETY

- BIDDER MUST VISIT SITE AND GET ACQUAINTED HIMSELF WITH WORKING CONDITION, SAFETY & OTHER FORMALITIES / PROCEDURE PREVAILING IN ONGC PREMISES. NO CLAIM SHALL BE ENTERTAINED ON ACCOUNT OF THIS.
- PPES IS MUST FOR ALL WORKERS AND STAFFS AT THE TIME OF INDUCTION ITSELF. CONTRACTOR HAS TO ARRANGE ALL THESE FOR THEIR WORKER AND STAFFS AT THEIR OWN COST.
- BIDDER TO NOTE THAT IN ADDITION TO BHEL REQUIREMENTS OF SAFETY, OCCUPATIONAL HEALTH AND ENVIRONMENTAL MANAGEMENT, CONTRACTOR SHALL STRICTLY FOLLOW & ABIDE THE SAFETY LAWS/RULES & REGULATION REQUIREMENTS OF NSPCL/NTPC AT SITE AND IN THE EVENT OF ANY DEVIATION/ DISPUTE, THE REQUIREMENTS OF NSPCL/NTPC IN THIS REGARD SHALL SUPERSEDE THE BHEL REQUIREMENTS. CONTRACTOR SHALL ARRANGE THE REQUIRED SAFETY FACILITIES AS MENTIONED IN THE BHEL HSE AND NSPCL/NTPC SPECIFICATION DOCUMENT.
- FOR NON-COMPLIANCES/VIOLATION OF SAFETY RULES AND FINE/PENALTY IMPOSED BY NSPCL AS THEIR RULES & REGULATIONS SHALL BE TO THE ACCOUNT OF CONTRACTOR & SAME SHALL BE PAID BY CONTRACTOR. IN EVEN OF ANY RECOVERY FROM BHEL BILLS BY CUSTOMER ON ACCOUNT OF CONTRACTOR AGAINST SUCH FINE/PENALTY, BHEL SHALL RECOVER SUCH AMOUNT/PAYMENT IN ADDITION TO DEPARTMENTAL OVERHEADS FROM ANY AVAILABLE BILLS/PAYMENTS OF CONTRACTOR WHICH IS DUE FOR PAYMENT FROM BHEL.

2.19 EXECUTION OF WORK

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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, CPWD specifications as applicable. In case of conflict, the decision of the engineer shall be final and binding. The engineer 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. Such entries will rank as order or notices in writing within the intent and meaning of these conditions. 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 certificates. 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 over 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 over in use. Periodical calibration for the same shall also be arranged by the contractor within the finally accepted rates.

2.20 PROTECTION OF WORK

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. 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.

2.21 PROTECTION OF EMBEDMENTS, BOLTS ETC

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. 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 and cost by BHEL.

2.22 COMPLETION OF WORK

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, labour 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. 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

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the engineer. Such work however shall not be treated as have been completed until the extra works are executed to the satisfaction of engineer. The guarantee period shall commence only after handing over of the entire works. The BHEL engineer shall certify to the contractor the date on which the work is completed.

2.23 HIERARCHY

In case of any conflict/deviations amongst various documents, the order of precedence shall be as follows

- 1) Statutory Regulations
- 2) NTPC Technical specification/Section C Technical specifications.
- 3) Scope of works as per Section A of the bid documents.
- 4) IS standards
- 5) BHEL's standard specification (Section D).

The above hierarchy shall be followed strictly for technical requirements only to carry out works under the scope of this contract.

Bidders are requested to specifically note the following:

*Bidders are requested to have **pre-bid visit/ inspection of site** to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site conditions. Bidders may fix up their site visit in consultation with below mentioned contact person:*

Sh. Chandan Behera Manager (Civil) BHEL Site Office: 2x250 MW NSPCL Bhilai Mob No.: 9425293179	Sh. KK Mishra, Engineer (PMX) PSWR Nagpur Mob No: 9561130762
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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
	PART I			
3.1	<i>Establishment</i>			
3.1.1	<i>For Construction Purpose:</i>			
A	Open space for office (as per availability, if provided it will be free of cost)	Yes		Location will be finalized after joint survey with owner
B	Open space for storage (as per availability, if provided it will be free of cost)	Yes		Location will be finalized after joint survey with owner
C	Construction of bidder's office, canteen and open /closed storage facilities including supply of materials and other services		Yes	
D	Bidder's all office equipments, office / store / canteen consumables		Yes	
E	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
F	Fire fighting equipments like buckets, extinguishers etc		Yes	
G	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	<i>For living purpose of the bidder</i>			
A	Open space for labour colony (as per availability)		Yes	Contractor has to make his own arrangements for shelter and transportation of labours as per requirement.
B	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	
3.2.0	<i>ELECTRICITY</i>			
3.2.1	<i>Electricity for construction purposes 3 Phase 415/440 V</i>			CHARGEABLE
A	Single point source	Yes		CHARGEABLE. At two locations. Further distribution and Metering is in scope of bidder.

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No.	Description	Scope		Remarks
		BHEL	Bidder	
	PART I			
B	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
C	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	<i>Electricity for office, stores, canteen etc of the bidder.</i>			
A	Single point source	yes		Chargeable. Contractor Has to make his own arrangements from point source
B	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
C	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	<i>Electricity for living accommodation of the bidder's staff, engineers, supervisors etc</i>			Contractor Has to make his own arrangements
A	Single point source		Yes	
B	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
C	Duties and deposits including statutory clearances if applicable		Yes	
3.3.0	<i>WATER SUPPLY</i>			
3.3.1	<i>For construction purposes: (to be specified whether chargeable or free)</i>			
A	Making the water available at single point		yes	Contractor has to make his own arrangement.
B	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.3.2	<i>Water supply for bidder's office, stores, canteen etc.</i>			
A	Making the water available at single point		yes	
B	Further distribution as per the requirement of work including supply of materials and execution		Yes	

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E-Tender Spec. No: BHE/PW/PUR/BHFGD-MAIN-CIVIL-FGD/PKG-B1/3030

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No.	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.3.3	Water supply for Living Purpose			Contractor has to make his own arrangement.
A	Making the water available at single point		Yes	
B	Further distribution as per the requirement of work including supply of materials and execution		Yes	
3.4.0	LIGHTING			
A	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	
B	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3 At the construction site /area		Yes	
C	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
D	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5.0	Communication facilities for site operations of the bidder			
A	Téléphone, fax, internet, intranet, e-mail etc		Yes	
3.6.0	Compressed air wherever required for the work		Yes	
3.7.0	Demobilization of all the above facilities		YES	
3.8.0	Transportation			
A	For site personnel of the bidder		Yes	
B	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

1. CONSTRUCTION POWER:

Construction power (three phase, 415 V/ 440 V) will be provided near the site at a distance of approx. 500M on chargeable basis (source of construction power shall be provided at two locations). Further distribution shall be arranged by the contractor at his own cost and services.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Contractor shall be responsible for fulfillment of all requirements including statutory requirements in this regard. Contractor shall deploy and install required energy meter, cables, fuses, LT distribution boards, switchboards, bus bars, earthing arrangements, protection devices i.e, required capacity ELCB/RCCB in outgoing feeders and any other installation as specified by statutory authority/act. Contractor shall also obtain approvals of appropriate authority and pay necessary fees, levies etc towards the clearance of such installations, prior to use. Sufficient power factor compensation equipments like capacitor shall be provided by contractor for reactive loads like welding machines etc. In case of any fine/penalty on account of low power factor, same shall be shared by contractor proportionately according to power consumption.

1. Contractor shall make necessary arrangements for onward distribution of construction power taking due care of surrounding construction activities like movement of cranes & vehicles, civil work, fabrication/construction/assembly/ erection etc and safety of personnel. It may become necessary to relocate some of the installations to facilitate work by other agencies or by him.
2. It shall be the responsibility of the Contractor to provide, maintain the complete installation on the load side of the supply with due regard to the safety requirements at site. All cabling and installations shall comply in all respects with the appropriate statutory requirements. The installation and maintenance of this shall be done by licensed and experienced electrician.
3. While reasonable efforts will be made to ensure continuous electric power supply, interruptions cannot be ruled out and no claim from the Contractor shall be entertained on this account such as idle labor, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.
4. Contractor shall be well equipped with back-up power supply arrangement like DG set and diesel operated welding machine etc to tackle situations arising due to failure of supplied power, so as to ensure continuity and completion of critical processes that are underway at the time of power failure or important activities planned in immediate future.
5. BHEL is not responsible for any loss or damage to the Contractor's equipment as a result of variations in voltage or frequency or interruptions in power supply.
6. Contractor is advised to maintain the calibrated energy measuring instruments and use their system as efficiently as possible to maintain the HT side input energy meter reading and LT side outgoing energy meter reading to sub-contractors as equal. In case there is any difference between the sum of the LT side meter readings of all sub-contractors and the HT side meter reading of M/s NSPCL, same shall be distributed proportionately among all sub-contractors working during the respective calendar month.
7. The bidder will have to Procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back-up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.
8. The charges only for the actual energy consumed by the contractor shall be recovered based on prevalent rate of DISCOM.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

GENERAL: - If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized / accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Indian Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.

2. **CONSTRUCTION WATER:**

Contractor shall make all arrangements himself for the supply of construction water as well as potable water for labour and other personnel at the work site/ colony. Any statutory clearance required shall be obtained by the contractor. Assistance, if required shall be provided by BHEL/NSPCL.

3. **LAND**

BHEL shall allot land to the contractor if customer NSPCL allots the same to BHEL for his office & stores. Contractor must maintain the areas allotted to him in a neat and clean condition as required by the Employer. The contractor shall provide adequate storage, testing and office facilities with approval from the engineer. The rate quoted by the contractor shall be deemed to include for these and no separate payment will be made towards these. On completion of work, the site shall be cleaned by the contractor of all materials, temporary sheds, debris, rubbish plants and equipments, belonging to the contractor at no extra cost. The site and surroundings shall be handed over in neat and clean conditions. Contractor shall do periodical housekeeping as per the instructions of BHEL and NSPCL at no extra cost. In case of any failure by the contractor, the employer will get set at risk and cost of the contractor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

4.1 Tools & Plants:

Nos of T&Ps to be deployed at site shall be decided w.r.t. monthly plan and review based on site requirement. Below given Nos are suggestive/tentative for planning purposes by the bidder.

A	For Civil works	
SI No.	Description of T&P	Quantity
1.	SLUDGE / SLURRY PUMP (DIESEL / ELEC)	As per requirement.
2.	Electrical Winch (of required capacity)	As per requirement
3.	Vibrators(electrical/diesel)	03 Nos
4.	Air Compressor/Air blower	01 No.
5.	Concrete breaker (HILTI/STANLEY or equivalent)	01 No.
6.	Welding Machine	As per requirement
7.	Self-priming Dewatering pump of various capacity (Diesel) From 2 HP, 7.5 HP	02 Nos. Each
8.	Curing / dewatering pump – 1.5 / 2 HP	As per requirement
9.	Hydraulic Excavator /Proclain	01 Nos
10.	JCB	01 Nos
11.	<ul style="list-style-type: none"> Ply Shuttering board with adequate supporting structure – (Old steel shuttering plates will not be allowed). Steel shuttering (fare face) 	Lot (As per requirement)
12.	Mobile crane/ Farana (12/14/18 MT Capacity)	As per requirement.
13.	Trailer (20MT Capacity)	As per requirement.
14.	Tractor mounted grader/ loader	As per requirement.
15.	Pipe Scaffolding, Clamps / Swivel Couplers (One/Two Way), Props, Jacks, Screw Heads, MS Pipes, Wooden Battens, Planks, Bullies, H Frames, Tie Rods with Nuts, Adjustable Achro Span (Considering Individual Areas)	As per requirement.
16.	Dumper	02 Nos
17.	Reinforcement bending machine	01 Nos
18.	Reinforcement cutting machine	01 Nos
19.	MS scaffolding pipe with matching Couplers	As per requirement
20.	Plate compactor	As per requirement
21.	Earth Compactor	As per requirement
22.	Vacuum Dewatering machine	As per requirement
23.	Total Station	01 No
24.	Auto level & staff	02 Nos
25.	Vibro roller of suitable capacity	To be mobilized as

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

		per site requirement
26.	Water Tanker	To be mobilized as per site requirement
27.	All equipments for area Lightning like Halogen bulbs and Portable light Towers etc.	As per requirement
28.	DG Set 125 KVA	As per requirement
29.	COMPUTER with printing/photocopy & CD writing facility	As per requirement

FIELD QUALITY LAB EQUIPMENTS AS PER LIST ENCLOSED as Annexure-II WITH THIS TENDER DOCUMENTS AS APPLICABLE FOR THE SCOPE OF WORK OF THIS TENDER

4.2 MEASURING AND MONITORING DEVICES (MMD):

AS PER REQUIREMENT TO BE FINALIZED AT SITE.

4.3 COMPUTER INFRASTRUCTURE

The successful bidder(s) will have to establish computerized project management system along with one no supervisor with sufficient computer knowledge (knowledge of MS office) and the following are the minimum requirements of the system:

- 4.1.1** The bidder will have to install 1 nos PC (multimedia PC work station Pentium-Duo,1 GHZ or above, 320 GB HDD, 2 GB RAM, 100 MBPS LAN card of HCL/ COMPAQ/ ZENITH or equivalent make with window 8 O/S with required accessories like mouse, keyboard, UPS and required software like MS Office 2010 Professional, AutoCAD 2011, ADOBE PDF CREATOR (ver 8.0) with one number laser jet printer compatible for A4 and A3 size printing (ink/ cartridge for which to be supplied as and when required, (the consumption may be assumed as 1 cartridge per month) with power backup at places, as per instruction of BHEL for exclusive use of BHEL.
- 4.1.2** These computers / printer along with technical supervisor (One number) shall remain contractor's property/ownership for all legal/technical purposes; however, contractor shall be allowed to take out/release the same after completion of the site works. **The computer/printer along with One nos technical supervisor shall remain/work at BHEL offices.**
- 4.1.3** The contractor's technical supervisor shall provide data / information etc in prescribed formats for periodical updating of the progress reports, Billing, daily progress report, updating of schedule pertaining to the contractor's scope of work etc.

This facility has to be provided **with in one month from date of start of work**, till completion of site works or as decided by BHEL. If contractor fails to provide computer/

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

printer as per requirement, for a continuous period of fifteen days or more, BHEL shall have the right to purchase it at risk and cost of bidder. / If Contractor fails to mobilize above computer infrastructure BHEL reserve the right to recover from Bidder at the rate of Rs 30000 per Month per Unit or BHEL may Depute the Manpower on behalf of bidder (all statutory compliance shall be in bidder's scope only, if BHEL depute the technical supervisor) and pay directly to technical supervisor after deduction from RA Bills.

- 4.1.4** In the event of the contract period getting extended beyond the stipulated time for reasons not attributable to the bidder, the bidder will be reimbursed at Rs 8000.00 per month for one computer with printer facility, if the services of computer and printer are being used by BHEL.

NOTE:

- All above T&Ps are to be deployed by contractor as and when required as per instruction of BHEL engineer. If works gets delayed due to non-availability of above T&Ps, BHEL reserves the right to deploy the same and recover the charges thereof from the contractor as per prevailing market rate/hiring rate/BHEL internal hiring rates, as the case may be, + Applicable overhead rates.**
- This above list is only indicative and neither exhaustive nor limiting. Quantities indicated above are only tentative. Contractor shall deploy all necessary T&P to meet the schedules & as prescribed by BHEL engineer and required for completion of work. In the event of non-mobilisation of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof.
- The contractor should also submit the fitness/calibration certificate for T&Ps regularly and renew as per applicable IS standards and statutory requirements. The tools & tackles shall not be removed from site without written permission of BHEL.
- All distribution boards, connecting cables/welding cables, wire ropes, hoses etc., including temporary air/water/electrical connectors etc. shall have to be arranged by the contractor at his own cost.
- The contractor shall engage trained and experienced operators for the operation of T&P's and machinery. BHEL engineer will check their skill and performance before they are allowed to operate the same. However, checking of skills by BHEL does not absolve the contractor of his responsibilities for proper and safe handling of equipment, consistent good performance of operators and regular performance evaluation of operators.
- The day to day and routine maintenance of T&Ps and machinery should be carried out by contractor and these shall be maintained in good working condition during the entire period of use T&Ps in defective/damaged condition shall be rectified promptly to the full satisfaction of BHEL engineer. Contractor shall maintain records for maintenance of major T&Ps which shall be made available for inspection whenever required. In case of any lapses on the part of the contractor, BHEL at its own discretion get the servicing/repair of equipment done at the risk and cost of the contractor with BHEL overheads as applicable time to time.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

7. The contractor shall arrange all spares needed for upkeep of all T&Ps and machinery. For cranes, contractor shall arrange spares for repair/replacement of filter, batteries, self, dynamo, gaskets, hoses, oil seals and rubber parts.
8. The contractor shall permanently deploy with them minimum number of mechanics and skilled workers for undertaking the regular maintenance of tools and plants and machinery and for increasing / shortening of the crane boom as required. The contractor shall also arrange required tools, supports, consumables, illumination etc. for the above purpose.
9. The contractor shall arrange for consolidation of ground and arrangement of sleepers/sand bag filling etc. for safe operation / movement of equipment including cranes/trailers etc. at his cost.
10. In the event of BHEL arranging T&P's and Machineries at the cost and risk of contractor, any loss / damage to any part of T&Ps and machineries provided by BHEL shall be to the contractor's account and any expenditure on these accounts by BHEL will be recovered from the contractor's bill in case the contractor fails to make good the loss.
11. Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL engineer for inspection as and when required. Identification for such T&Ps will be done as per BHEL Engineer's advice.
12. Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection Measuring and Test Equipment). The IMTEs shall have test/calibration certificates from authorized / Govt. approved / accredited agencies traceable to National/ International standards. Each IMTE shall have a label indicating calibration status i.e., date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL engineer for control.
13. Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e., repeat the readings taken by that instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's 'cost.
14. BHEL shall have lien on all T&P, IMTEs and other equipment of the contractor brought to the site for the purpose of erection, testing and commissioning. BHEL shall continue to hold the lien on all such items throughout the period of contract. No material brought to the site shall be removed from the site by the contractor and/or his subcontractors without the prior written approval of the engineer.
15. The contractor shall submit month wise T&P deployment plan. It is only to assess the capability as well as understanding of the contractor to execute the work. However it shall be the contractor's responsibility to deploy the required T&Ps, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

- 16.If the work related to T & Ps mentioned above is completed then, BHEL can release that T & P during contract period / extended period if any. However, written permission shall be taken by contractor from BHEL construction Manager for releasing the T&P.
- 17.In the eventuality of contractor not deploying cranes / abnormal down time of cranes in his scope during the period specified above, and BHEL arranges for the same [either BHEL's own cranes / hired cranes], prevailing BHEL Corporate Crane hire charges (may vary from time to time) shall be recovered from the contractor's running bills.
- 18.The contractor shall arrange crane operator, diesel, petrol and other consumables required for the tools and plants, equipments etc. Preventive and routine maintenance of T & P are also to be arranged by the contractor at his cost without any delay. Required number of experienced mechanics and helpers for routine maintenance of the above cranes shall be provided by the contractor within his quoted rate.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – V: T&Ps and MMEs to be Provided by BHEL

BHEL shall not provide any T&Ps for this scope of work.
All T&Ps required for handling of items / materials to be arranged by bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.0 Time Schedule and Mobilization:

6.1 Initial Mobilization and Time Schedule:

After issue of LOI (though Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of LOI and submit detailed mobilization plan to start work within 15 days from date of LOI; unless instructed by BHEL to differ start of work in writing.

The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period of **06 (Six) Months from the date of start of work** in a manner required by BHEL to match with the project schedule.

Start of work shall be considered as 15 days after date of LOI or as instructed by BHEL in writing.

6.2 Completion Period and Schedule of Important Milestone:

The entire balance work under the scope of this contract shall be carried out in such a manner that the following listed major milestones are achieved as per completion schedule given against each activity & released for erection by other agency.

Sl. No.	Completion Civil work of following Activity/facilities	Completion Period from DOS
1	Conveyers for Lime LBC 1A/1B and LTP-1	1 st Month
2	DG foundations	1 st Month
3	Lime Stone Storage Silo	2 nd Month
4	Cable rack	2 nd Month
5	Crusher House - release of front for equipment erection	3 rd Month
6	Gypsum Shed	4 th Month
7	Pump house for LHP & GHP	4 th Month
8	Truck Tippler	5 th Month
9	LHP MCC	6 th Month
10	Day Silo, Misc. Buildings, Road & Drain and Paving work	6 th Month

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.3

PROVISION OF PENALTY IN CASE OF SLIPPAGE OF INTERMEDIATE MILESTONES:

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

Milestones	Civil work of following Activity	Completion Period from DOS
M1	Gypsum Shed	4 th Month
M2	Truck Tippler	5 th Month

Note: Refer **Clause no.-8 of NIT “Annexure-12-Important Information”** regarding modalities against provision of penalty in case of slippage of Intermediate Milestones.

Notes:

- Common activities like Plant roads, drains, fencing, paving and other misc. works etc. shall be completed in Phase wise manner / Instruction of Engineer within the Contractual time.
- Contractor shall note that individual milestones as above shall be achieved as per schedule furnished above.
- Successful bidder, on award of work, shall prepare, submit and obtain approval of L2 & L3 schedule, detailed PERT network to meet schedule furnished above before start of work.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VII: TERMS OF PAYMENT

7.0 TERMS OF PAYMENT

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

7.1 Progressive Payment against Civil and structural Works,

100% of civil and structural works:

- a. Certification by the engineer in-charge for the quantum of work completed.
- b. Certification by the engineer in-charge/Owner's field quality surveillance representative for the successful completion of quality checkpoints involved in the quantum of work billed.

7.1.1 Documents required for payment are as under:

- The protocols for the work done in a month shall be submitted in triplicate duly agreed/signed by BHEL Engineer/customer.
- PVC calculation and copy of all applicable indices.
- All supporting documents including HR compliances, MRC (Material Receipt Certificate) for supplies, Quality documents, signed protocols for quantum of work completed & billed are to be submitted along with each running bills.
- Consumption report of reinforcement steel & cement shall be submitted along with each running bill.
- Contractor shall submit any additional documents as desired by the customer.

7.2 Note:

Payment for running bills shall be released **normally** within 30 days of submission of running bill complete in all respects with all supporting documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile. Few points of consideration are as below:

- The RA bill payments are interim payments.
- Recoveries because of electricity, statutory deductions etc. shall be made as per terms of contract.
- BHEL will release payment through Electronic Fund Transfer (EFT)/RTGS.
- Final bill shall be submitted after completion of all works covered under this contract.
- Supplier invoices pertaining to all material procurement and material test certificate shall be submitted to BHEL for verification purpose.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VII: TERMS OF PAYMENT

- All statutory/ regulatory obligations including EXIM policies shall be complied by the successful bidder and supporting documents towards the same shall be submitted to BHEL by the successful bidder.

7.3 Break-up of Payment for Civil works of steel framed structure and foundation works:

- a) 85% payment shall be released for BOQ Items of Excavation, PCC, Reinforcement Fixing for Raft, Formwork for Raft, RCC Raft, Reinforcement Fixing for Pedestal, Formwork for Pedestal, RCC Pedestal and Backfilling on certification of measurement.
- b) Balance 15% payment as per Sl. No. (a), shall be released on handing over of the pedestals for structure/mechanical/electrical/etc. erection where RCC floor/roof slab is not available. In case, RCC floor/roof slab is available then 7.5% shall be withheld and it shall be released as per Sl. No. (c).
- c) Balance 7.5% payment as per Sl. No. (b), shall be released progressively on casting of RCC floor/roof slab.

7.4 Break-up of Payment for Civil works of RCC framed structure:

- a) 85% payment shall be released for BOQ Items of Excavation, PCC, Reinforcement Fixing for Raft/Footing, Formwork for Raft/Footing, RCC Raft/Footing, Reinforcement Fixing for Column, Formwork for Column, RCC Column, Reinforcement Fixing for Intermediate Beams/Floor Beams/Roof Beams, Formwork for Intermediate Beams/Floor Beams/Roof Beams, RCC for Intermediate Beams/Floor Beams/Roof Beams, Formwork for Floor Slab/Roof Slab, Reinforcement Fixing for Floor Slab/Roof Slab, Parapet Wall and Backfilling on certification of measurement.
- b) Balance 7.5% payment as per Sl. No. (a), shall be released progressively on casting of Column, Intermediate Beams and Floor Beams.
- c) Balance 7.5% payment as per Sl. No. (a) & (b), shall be released progressively on casting of Floor Slab and Roof Slab along with Parapet Wall.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII : Taxes and Duties

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

1. All taxes excluding GST, GST Cess & BOCW Cess but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by you and shall not be payable extra.
2. Any increase of the taxes excluding GST, GST Cess & BOCW Cess, at any stage during execution including extension of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements. Please note that since GST on output will be paid by BHEL separately as enumerated below, your quoted rates/ price should be after considering the Input Credit under GST law at your end.
3. **GST :**
The successful bidder shall furnish proof of GST registration .GST along with Cess (as applicable) legally leviable & payable by the successful bidder as per GST Law, shall be paid by BHEL. Hence Bidder shall not include GST along with Cess (as applicable) in their quoted price.
4. GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return
5. E-invoicing under GST has been implemented with effect from 1st October 2020 for all the taxable persons having turnover more than the threshold limit in any preceding financial year from 2017-18 onwards. Therefore, for all the taxable persons falling under the purview of E-invoice, it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from E-Invoicing portal of the Government for the purpose of issuing a valid Tax Invoice. Only an E-invoice issued in the manner prescribed under rule 48(4) of CGST Rules shall be treated as valid invoice for reimbursement of GST amount.
If the successful Bidder is not falling under the purview of E-Invoicing then he has to submit a declaration in that respect along with relevant financial statements.
6. Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:
BHEL GSTN – As per **Annexure -1**
NAME -- Bharat Heavy Electricals Limited
ADDRESS -- Site address
7. Bidder to immediately intimate on the day of removal of Goods (in case of any supply of goods) to BHEL along with all relevant details and a scanned copy of Tax Invoice to below email ids to enable BHEL to meet its GST related compliances :-
Email id ---- to be intimated later on.
In case of delay in submission of the abovementioned documents on the date of dispatch, BHEL may incur penalty /interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from the successful bidder, if such delay is not attributable to BHEL.
8. In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with Rule 53.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII : Taxes and Duties

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

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

12. **New taxes and duties:-**Any New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period including extension, if the same is not attributable to you, shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties. Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.
In case any new tax/levy/duty etc. becomes applicable after the date of bidder's offer but before opening of the price bid, the bidder must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of the price bids. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.
13. For transportation work, bidder shall declare in his quotation whether he is registered under GST, if yes, whether he intends to claim GST on forward charge basis. In absence of this declaration, BHEL will proceed further with the assumption that bidder intends not to claim GST on forward charge basis. However, in case of GST registered transporter, the amount to the extent of goods and service tax will be retained till BHEL avails the credit of GST. Further, transporter shall issue tax invoice which inter alia includes gross weight of the consignment, name of the consigner and the consignee, registration number of vehicle in which the goods are transported, details of goods transported, details of place of origin and destination, GSTIN of the person liable for paying tax whether as consigner, consignee or goods transport agency, and also containing other information as mentioned under rule 46.
14. TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills unless exemption certificate from the appropriate authority/ authorities is furnished.
15. TDS under GST shall be deducted at prevailing rates on applicable value from the running bills.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII : Taxes and Duties

16. TCS under Income Tax 1961 has been implemented with effect from 1st October 2020 for every seller having turnover more than threshold limit during financial year immediately preceding financial year in which the sale of goods is carried out, who receives any amount as consideration for sale of any goods of the value or aggregate of such value exceeding threshold limit other than export of goods or who is already covered under other provision of section 206C, collect from the buyer, TCS as per applicable rates of the sale consideration exceeding threshold limit subject to following conditions

- i. Buyer shall be as per clause (a) of section 206C- (1H)
- ii. Seller shall be as per clause (b) of section 206C- (1H)
- iii. No TCS is to be collected, if the seller is liable to collect TCS under other provision of section 206C or the buyer is liable to deduct TDS under any provision of the Act and has deducted such amount.

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

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

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

ANNEXURE-1

State wise GSTIN no.s of BHEL

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII : Taxes and Duties

ANNEXURE-2

BOCW Act & Cess Act

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

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

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Chapter-VIII : Taxes and Duties

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

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CHAPTER-IX: SPECIFICATIONS & DRAWINGS

9.0 Following technical Specifications and Drawings shall be integral part of this tender:

SL. NO.	Document
1.	Section A - SCOPE OF WORK
2.	Section B - PROJECT INFORMATION
3.	Section C - TECHNICAL REQUIREMENTS SPECIFIC TO THE CONTRACT
4.	Section D - TECHNICAL SPECIFICATIONS

NOTE- ALL THE ABOVE MENTIONED DOCUMENTS ARE UPLOADED ON E-PROCUREMENT PORTAL AS VOL-I-E-3030.

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Chapter-X: APPENDIX

10.0 **TENTATIVE MANPOWER REQUIREMENTS:**

- (a) **Project manager – 01** with adequate experience of minimum 10Years in Industrial Foundation, Building & Structural Works, Power Plant Civil & architectural Works.
- (b) Experienced Civil Engineers – 02 heads
- (c) Experienced Foreman / Supervisors – 03 heads
- (d) Planning & Billing Engineer – 01 heads (**Min 1 head including documentation**)
- (e) Stores, Gate Pass – 01 heads
- (f) Accounts & Administration- 01 head
- (g) Quality Control Engineer/Chemist – 01 head (**min 1 head**)
- (h) Safety Engineer (officer) – 01 head (**min 1 head**)
- (i) Surveyor – 01 heads capable to handle total station
- (j) Operator, Licensed Electrician, Mechanic - As per requirement
- (k) Experienced Carpenters & Helpers – Lot for similar nature of work and as per requirement.
- (l) Experienced Bar Benders & Helpers – Lot for similar nature of work and as per requirement.
- (m) Security Guards (Round The Clock) – As per requirement

10.1 Deputation of man-power shall be jointly decided at site in line with construction schedule.

10.2 Engineer/ supervisor for other functions like store & purchase, material management, planning, finance, administration & liaison etc are to be provided as per site requirement and not considered above.

10.3 BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.

10.4 In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.

10.5 The month-wise manpower deployment plan to be submitted to BHEL and is only to assess the capability as well as understanding of the contractor to execute the work. It shall be the contractor's responsibility to deploy the required manpower, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.

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ANNEXURE-1

Annexure 1: FIELD QUALITY LAB EQUIPMENTS

- a.** Slump cone with tamping rod – 02no
- b.** Core cutter test apparatus – 05sets
- c.** Oven (capacity 120ltr, range – 250c) – 1no
- d.** Moisture container(steel/aluminum) – 06nos
- e.** Rapid moisture meter – 02nos
- f.** Physical balance – 02no.
- g.** Jars – 4 nos.

Note: This list is indicative only. The equipment required to comply with necessary quality norms shall be arranged by bidder without any additional cost to BHEL .

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Chapter-XI SCHEDULE OF RATES & QUANTITIES FOR PART-A

This Chapter consists of Part A & Part B of Volume II “Price bid”:

CONTENTS	
Description	Remarks
PART A: Instructions to the Bidders	Instructions
PART B: BOQ and % weightage for amount of individual items of Schedule of quantity	BOQ and % weightage for amount of individual items of Schedule of quantity
PART C: Total Lump Sum Price for entire scope of Work	This part is available in the E-Procurement portal entitled as “ Part-C of Vol-II Price Bid ”.

Part A: Instructions to the Bidders

1. Bidders shall quote **Total Lump-sum Price for the entire scope of work only in Rupees in the excel sheet provided in the E-Procurement Portal titled as “Part-C of Vol-II Price Bid”**. Price mentioned elsewhere in the offer of the bidder shall be treated as Null and Void.
2. BHEL has fixed the % weightages as in “Part-B” for the amount of individual items of Schedule of Quantity w.r.t. the total price of Price Bid Vol-II for Package.
3. Based on the pre-fixed % weightages, amount of individual items shall be derived by BHEL for Package. This amount shall not be rounded off.
4. Based on the quantities of individual item and the amount arrived in Sl. No.-3 above, item rate of individual items shall be derived by BHEL for Package. This item rate shall be rounded off up to two decimal places and shall be used to calculate the total amount of an item.
5. For the convenience of bidders, BHEL has issued an excel sheet (file titled as **Excel Sheet for Calculation Purpose only-3030**) with all requisite formulae as detailed above for Package. **However, this excel sheet shall not form part of contract document. Further, this sheet should not be uploaded at the e-Portal.**
6. Bidders to note that this is an ‘**Item rate contract**’. Payment shall be made for the actual quantities of work executed at the Unit rate arrived at as per serial no 4 above.

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total price (as quoted by the bidder in “Part C of Vol-II-Price Bid”)

Note: This Chapter-XI is uploaded separately as file titled ‘**Chapter XI-BOQ and Percentage Weightage-3030 for PART-A**’

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CONTENTS

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PART-B - INSTALLATION OF BATCHING PLANT, PRODUCTION OF REQUIRED GRADE OF CONCRETE, CONVEYING AND PLACEMENT/POURING OF CONCRETE IN FOUNDATION INCLUDING CEMENT, AGGREGATE, SAND ADMIXTURE ETC. COMPLETE AT 2X250 MW NSPCL BHILAI FGD PROJECT

Sl No	DESCRIPTION	Chapter
Volume-IA	Part-I: Contract specific details	
1	Project Information	Chapter-I
2	Scope of Works and Technical Specifications	Chapter-II
3	Facilities in the scope of Contractor/BHEL (Scope Matrix)	Chapter-III
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V
6	Time Schedule	Chapter-VI
7	Terms of Payment	Chapter-VII
8	Taxes and other Duties	Chapter-VIII
9	Drawings	Chapter-IX
10	Appendix	Chapter-X
11	WEIGHTAGES & FACTORS PERTAINING TO SCHEDULE OF QUANTITIES	Chapter XI

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-I: Project Information

1.0	Project Information:
1.1	<p><u>INTRODUCTION:</u></p> <p>The proposed site is located at Bhilai (East) in Durg district of Chhattisgarh.</p> <p>Latitudes : 21.21° N Longitudes : 81.38° E Place : Bhilai (East) District : Durg Nearest Railway Station : Bhilai (4KM) Nearest Airport : Raipur (35KM) Nearest Town/City : Bhilai (10KM)</p>

Above information furnished are for general guidance of Contractor. However, Contractor has advised to visit the site and appraise himself about the conditions of site and infrastructure available in the area for fulfilling their commitments under the contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: Scope of Work and Technical Specifications

2.0 SCOPE OF WORK:

Supply of Ready Mix Concrete including Installation of Batching Plant or Supply from Existing Established Batching plant(s), Production of Required Grade of Concrete, including Cement, Aggregate, Sand, Admixture, with transport and pour of concrete with Transit Mixer and Concrete Pump/Boom Placer with quality lab set up and testing complete as per Scope of Work.

This specification covers all the requirements, described hereinafter for general use of Plain and Reinforced Cement Concrete work in Structures and locations, cast-in-situ or precast, and shall include all incidental items of work not shown or specified but reasonably implied or necessary for the completion of the work.

IS: 4926 and IS: 456 shall form a part of this specification and shall be complied with unless permitted otherwise. For any particular aspect not covered by this Code, appropriate IS Code, specifications and/or replacement by any International Code of practice as may be specified by the Engineer shall be followed. All codes and Standards shall conform to its latest revisions. A list of IS codes and Standards is enclosed hereinafter for reference. However, should the list be not exhaustive and does not cover any aspect of the work, then relevant Indian and, in its absence, relevant International code shall apply.

2.1 The scope of work includes the followings:

1. Supply, storage of approved quality aggregates, Cement, admixtures etc. for ready mix concrete of various grades as per details given in BOQ or elsewhere in the contract document.
2. Establishment of Design mix of various grades as per IS-456 and IS-10262 or equivalent Standard.
3. Production of ready mix concrete in computerized automatic batching plant of required capacity as per quality norms and as per Field Quality Plan (FQP) approved by Customer. Production of cement slurry required if any shall be in the scope of vendor and the cost shall be considered included in respective BOQ Item Rates.
4. Conducting various tests in established ready mix concrete testing Laboratory at site as per FQP.
5. Concrete testing Cube shall be taken at Pouring and/or Batching Point by the agency as per frequency mentioned in IS 456 and FQP as per BHEL Engineer.
6. Transport of concrete from batching plant to pour point vide transit mixers with approved safety clearances.
7. Pour of concrete in foundations/beams/columns/slabs/other structures vide concrete pump or boom placer. No extra charge shall be paid to the agency for arranging the T&Ps including fuel and manpower complete.

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Chapter – II: Scope of Work and Technical Specifications

8. Supervision of concrete laying by Quality engineer of Agency.
9. Responsibility of Concrete Quality and soundness lies with Agency.
10. Mix design (M 20, M 25, M 30, M 35 or as required grade) for all concreting shall be carried out from a reputed & approved laboratory of BHEL / NSPCL.
11. Batching plant area along with 6m wide approach road shall have to be properly hard surfaced with interlocking pavers or brick bats etc. with adequate drainage system. There should be separate area for parking of bulker and transit miller.
12. Minimum Two-month stock of raw material including admixture are to be maintained all time at batching plant considering on an average concrete of 1500-2000 cum. Minimum monthly requirement would be 500 cum of concrete. Separate shed for storage of cement and admixture is to be made.
13. The Contractor shall furnish and maintain sanitary facilities for the use of all personnel engaged in the Work under this Contract. These facilities shall be subject to the approval by the Employer.
14. The scope shall also include testing of material & ready mix concrete in laboratory with necessary equipment for conducting relevant tests as required. Instruments used in Lab shall have valid calibration certificate from authorized agency.
15. All quality standards & other technical requirements shall be strictly adhered to. The Bidder shall fully apprise himself regarding prevailing conditions at the site, climatic conditions including monsoon pattern, soil conditions, local conditions and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may not have been specifically mentioned in the specifications.
16. Requirement of RMC shall be frozen on Monthly, Weekly and Daily basis before-hand with BHEL Engineer-in-Charge / User and production of concrete shall be planned accordingly.

2.2 General Scope:

1. Furnishing all labour, materials, supervision, equipment, supplies, transport to and from the site, fuel, electricity, compressed air, water, transit and storage insurance and all other incidental items and temporary works not shown on specified but reasonably implied or necessary for the proper completion, maintenance and handling over the works, except in accordance with the stipulations laid down in the contract documents and additional stipulations as may be provide by the engineer during the course of works.
2. Services including facilities as may be required under statutory labour regulations, materials, forms, templates, supports, scaffolds, approaches, aids, tools and plants, etc. required for the work.

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3. Submit for approval detailed schemes of all operations required for executing the work, e.g. Material handling, Concrete mixing, etc.
4. Concrete Design Mix to be conducted at an engineering institute/ NABL accredited lab approved by customer NSPCL. The samples shall be jointly sampled along with BHEL/ NSPCL and sealed in presence of BHEL and NSPCL and sent to approve lab for carrying out the mix design and submit for approval concrete mix designs required to be adopted on the job.
5. Furnish samples and submit for approval results of tests of various properties of the following:
 - a) The various ingredients of concrete like cement, sand, aggregate.
 - b) Concrete
6. Furnishing test reports for the products used or intended to be used, if called for the specifications or if so desired by the engineer.
7. Provide all incidental items not shown or specified in particular but reasonably implied or necessary for successful completion of the work in accordance with the specifications.
8. For supply of certain materials normally manufactured by specialist firms, the Contractor may have to produce, if directed by the Engineer, a guarantee in approved pro-forma for satisfactory performance for a reasonable period as may be specified, binding both the manufacturers and the Contractor, jointly and severally.
9. Giving all notices, paying all fees, taxes etc., in accordance with the general conditions of contract, that is required for all works including temporary works.
10. Arranging manufacturer's supervision for items of work done as per manufacturer's specifications when so specified.
11. Contractor shall set up suitable storage facilities for Cement, sand, aggregate, etc. and all are stored properly as per IS recommendation/technical specifications/ manufacturer recommendation. Wastage due to lapse of storing will be because of contractor.
12. **Setting Up of Laboratory Works:** The contractor shall set up laboratory in the very close vicinity of the work site as required field QA & QC laboratory set up and as the directions of engineer-in-charge. The laboratory shall be equipped with latest testing equipment in sufficient number to carry out all the tests as required under a contract. The contractor should ensure that the equipment is available well in advance of starting of the work to avoid stoppage of work on this account. All the tests shall be carried out by the contractor in the presence of the Engineer's representative and a joint record of all observations and results thereof shall be maintained, and available with the Engineer.
13. In certain cases, Crushed Stone Sand/M-Sand may be added to Natural sand in order to achieve the required grading with prior approval of the Customer/Consultant and

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subsequent design mix report from reputed institute like IITs/NITs/Any Other Government Institutes. Crushed Stone Sand/M-sand alone may be used only with the prior approval of the BHEL Engineer/Customer/Consultant for filling and Concreting works.

14. In case ambient temperature is greater than 32 Degree Celsius, Placement temperature should be controlled with necessary temperature correction of concrete.
15. Royalty challan and statutory documents shall be submitted along with RA Bills for processing of Bills.

2.3 Preamble for the schedule of quantities/BOQ:

1. Details of the items in this Schedule shall be read in conjunction with the Corresponding Consultants/ NSPCL specifications, drawings and other documents and shall have precedence over any contrary statement mentioned anywhere in this document.
2. Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
3. Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant , temporary works, labour materials, levies, taxes , transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
4. Engineer decision shall be final and binding on the contractors regarding clarification of items in this schedule with respect to the other section of the contract.
5. In case of any discrepancy between item description, relevant drawing and/or specification, clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

2.4 Hierarchy:

In case of any conflict/deviations amongst various documents, the order of precedence shall be as follows:

- (1) Statutory Regulations
- (2) BOQ Items in Schedule of quantities
- (3) Technical specification (NSPCL-Bhilai)/ Technical specifications (Section-C)
- (4) IS standards
- (5) BHEL's standard specification (Section D)

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Chapter – II: Scope of Work and Technical Specifications

2.5 Information to be submitted by the Tenderer

1. With Tender:

The following technical information are required with the tender:

- a) Source and arrangement of processing of aggregates proposed to be adopted.
- b) Type of plant and equipment proposed to be used.

2. After Award:

The contractor shall be provided following information and data including samples where necessary, progressively during the execution of the contract.

a) Program for Installation & Commissioning of the RMC plant:

Within 15 days of the award of contract, the contractor shall submit a Master Program for Installation & Commissioning of the RMC plant. In case the contractor tie-up with existing batching plant inside plant or near vicinity of the plant, he/they should submit for approval of the same with the documents as per BHEL and NSPCL.

b) Samples:

Samples of the following materials and any other materials proposed to be used shall be submitted as directed by the Engineer, in sufficient quantities for approval. Approved samples will be preserved by the Engineer for future reference. The approval of the Engineer shall not, in any way, relieve the Contractor of his responsibility of supplying materials of specified qualities:

- i) Coarse and fine aggregates
- ii) Admixtures
- iii) Bottom Ash and Fly Ash

c) Design Mix Concrete:

Design mix concrete for this specification giving proportions of the ingredients, sources of aggregates, sand, bottom ash and fly ash along with accompanying test results of trial mixes as per relevant I.S., is to be submitted to the Engineer for his approval before it can be used on the works.

d) Test Reports for admixtures.

e) Inspection Reports

Inspection Reports in respect of any item of work as may be desired by the Engineer in accordance with Relevant Clause of this specification.

f) Test Reports:

Reports of tests of various materials and concrete as required under Clause 2.16: SAMPLING & TESTING of this specification.

g) Any other data which may be required as per this specification.

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2.6 Conformity with Concrete Mix Design:

One of the mix designs developed by the Contractor as per the I.S. Specifications and established to the satisfaction of the Engineer by trial mixes shall be permitted to be used by the Engineer, the choice being dictated by the requirements of designs and workability. The methods of mixing, conveyance as per requirement, making test samples, curing, protection and testing of concrete will be as approved or directed by the Engineer.

NOTE:

1. Admixtures with AURAMIX-500 (High grade PCE)
2. Workability requirement of the structural concrete is 150 mm to 200 mm.
3. Workability requirement of lean concrete is 150 mm to 175 mm.
4. The coarse and fine aggregate shall be tested for ASR by petrographic analysis & also required 14-days accelerated mortar bar test as per ASTM C1260.

2.7 Materials to be used:

All materials whether to be incorporated in the work or used temporarily for the construction shall conform to the relevant IS Specifications unless stated otherwise and be of best approved quality.

1. Aggregates:

a) Coarse Aggregate:

Coarse aggregate for concrete shall be crushed stones chemically inert, hard, strong, durable against weathering of limited porosity and free from deleterious materials. It shall be properly graded. It shall meet the requirements of IS: 383.

b) Fine Aggregate:

Fine aggregate shall be hard, durable, clean and free from adherent coatings of organic matter and clay balls or pellets. Fine aggregate in concrete shall conform to IS: 383. For plaster, it shall conform to IS: 1542 and for masonry work to IS: 2116.

- c)** Petrographic examination of aggregate shall be carried out by the contractor at National Council for Cement and Building Materials (NCB), Ballabgarh or any other approved laboratory to ascertain the structure and rock type including presence of strained quartz and other reactive minerals. In case, the coarse aggregate sample is of composite nature, the proportions (by weight) of different rock types in the composite sample and petrographic evaluation of each rock should also be ascertained. While determining the rock type, special emphasis should be given on identification of known reactive rocks like chalcedony, opal etc. The procedure laid down in IS 2430 for sampling of aggregates may be followed.
- d)** The laboratory shall determine potential reactivity of the aggregate, which may lead to reaction of silica in aggregate with the alkalis of cement and / or potential of some aggregates like limestone to cause residual expansion due to repeated temperature cycle. If the same is established, the contractor shall further carry out alkali aggregates reactivity test as per IS 2386 (Pt.VII) and / or repeated temperature cycle test to

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establish the suitability of the aggregates for the concrete work. The test results, with the final recommendations of the laboratory, as to a suitability of the aggregate, for use in the concrete work for various structures and suggested measures, in case of results are not satisfactory, shall be submitted to the Engineer for his review, in a report form. In case in the report, it is established, that the aggregates contain reactive silica, which would react with alkalis of the cement, the contractor shall change the source of supply of the aggregate or use low alkali cement as per recommendation or take measures as recommended in the report as instructed by Engineer. In case aggregates indicate residual expansion, under repeated temperature cycle test (from 10 Degree Celsius to 65 Degree Celsius and for 60 temperature cycles) the material shall not be used for concreting of Lime stone crusher decks, Mills, Fans and other equipment foundations which are likely to be subjected to repeated temperature cycle. The contractor shall use aggregates free from residual expansion under repeated temperatures cycle test.

2. **Water:**

Water for use in Concrete shall be clear and free from injurious oils, acids, alkalis, organic matter, soluble silts or other deleterious substances which may cause corrosion, discoloration, efflorescence etc. Normally potable water is found to be suitable. Generally, IS: 3550 will be followed for routine tests. Acceptance test for water shall be as per IS: 3025, and Table-1 of IS: 456. In case of doubt regarding development of strength, the suitability of water for making concrete shall be ascertained by compressive strength and initial setting time tests as per method of tests in accordance with the requirements of IS-516 & IS- 4031 respectively. The pH value of water shall generally be not less than 6.

3. **Cement:**

Fly ash based Portland pozzolana cement conforming to IS:1489 (Part-1) shall be used for all areas other than for the critical structures identified below. Other properties shall be as per IS code.

Ordinary Portland Cement (OPC) shall necessarily be used for the following structures.

- a) Spring supported decks of limestone crusher
- b) RCC for Chimney shell.

The grade of cement shall be Grade 43 for OPC conforming to IS:269. **For the works balance at site OPC requirement is very less as compared to PPC requirement.**

4. **Admixture:**

- i) The design mix of structural concrete M-20 and above should be design with high performance PCE-based water reducing admixture having minimum water reduction capability of 30%.
- ii) The type of Super-plasticizer should be of Type-G category as per ASTM C-494.
- iii) The performance compliance of the Super-plasticizer should be ensured based on the following test.
 - Marsh cone test for optimum dosage of admixture with specific brand of cement.

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- Slump retention test of concrete.
- Water reduction capability test by doing trial mix.
- Rheological properties of fresh concrete on trial mix.

2.8 Storage of Materials:

All materials shall be as stored as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality and fitness for the work. Any material, which has deteriorated or has been damaged or is otherwise considered defective by the Engineer, shall not be used for concrete and shall be removed from site immediately, failing which, the Engineer shall be at liberty to get the materials removed and Storage of materials shall conform to IS: 4082.

1. **Cement:**

Sufficient space for storage, with open passages between stacks, shall be arranged by the Contractor to the satisfaction of the Engineer.

Cement shall be stored above the ground in perfectly dry, leak proof (watertight), well-ventilated ware-houses at the works in such a manner as to prevent deterioration due to moisture or intrusion of foreign matter.

Cement shall be stored in easily countable stacks with consignment identification marks. The bags shall be stacked in a manner so as to facilitate removal or first in first out basis. Sub-standard or partly set cement shall not be used and shall be removed from the site, with the knowledge of the Engineer, as soon as it is detected.

Different types of cement shall be clearly marked with the Type and different types of cement shall not be intermixed.

2. **Aggregates:**

Aggregates shall be stored on brick soling or an equivalent platform so that they do not come in contact with dirt, clay, grass or any other injurious substances at any stage. Each size shall be kept separated with wooden or steel or concrete or masonry bulk-heads or in separate stacks and sufficient care shall be taken to prevent the material at the edges of the stock piles from getting intermixed. Stacks of fine and coarse aggregates shall be kept sufficiently apart with proper arrangement of drainage. The aggregates shall be stored in easily measurable stacks of suitable depths as may be directed by the Engineer.

3. **Admixtures:**

Admixtures shall be stored in strong moisture proof packing / as per recommendations of manufacturer.

2.9 Quality Control:

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Contractor shall establish and maintain quality control for different items of work and materials as may be directed by the Engineer to assure compliance with contract requirements and maintain and submit to the Engineer records of the same.

The quality control operation shall include but not be limited to the following items of work:

1. **Admixture:** Type, quantity, physical and chemical properties that affects strength, workability and durability of concrete. For air entraining admixtures, dosage to be adjusted to maintain air contents within desirable limits.
2. **Aggregate:** Physical, chemical and mineralogical qualities. Grading, moisture content and impurities.
3. **Water:** Impurities tests.
4. **Cement:** Tests to satisfy relevant IS Specifications (only association with Owner's tests, if the supply is made by Owner).
5. **Grades of Concrete:** Usage and mix design, testing of all properties.
6. **Batching & Mixing:** Types and capacity of plant, concrete mixers and transportation equipment.

2.10 Installation:

All installation requirements shall be in accordance with IS 4926 & IS:456 and as supplemented or modified herein or by other best possible standards where the specific requirements mentioned in this section of the specification do not cover all the aspects to the full satisfaction of the Engineer.

2.11 Washing and Screening of Aggregates

Washing and Screening of coarse aggregate shall be carried out to remove fines, dirt or other deleterious materials. Washing of fine aggregate shall not be allowed, Fine aggregates shall be screened only to remove dirt or other deleterious materials. However, all washing & screening of aggregates shall be carried out by approved means to ensure compliance with the aggregate specification.

2.12 Mixing of Concrete:

Concrete shall always be mixed in mechanical mixer unless specifically approved by the Engineer for concrete to be used in unimportant out of the way locations in small quantities. Water shall not normally be charged into the drum of the mixer until all the cement and aggregates constituting the batch are already in the drum and mixed for at least one minute. Mixing of each batch shall be continued until there is a uniform distribution of the materials and the mass is uniform in colour and consistency, but in no case shall mixing be done for less than 2 (two) minutes and at least 40 (forty) revolutions after all the materials and water are in the drum. When absorbent aggregates are used or when the mix is very dry, the mixing time shall be

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extended as may be directed by the Engineer. Mixers shall not be loaded above their rated capacity as this prevents thorough mixing.

The entire contents of the drum shall be discharged before the ingredients for the next batch are fed into the drum. No partly set or remixed or excessively wet concrete shall be used. Such concrete shall be immediately removed from site. Each time the work stops, the mixer shall be thoroughly cleaned & when the next mixing commences, the first batch shall have 10% additional cement to allow for loss in the drum.

Regular checks on mixer efficiency shall be carried out as directed by the Engineer as per IS: 4634 on all mixers employed at site. Only those mixers whose efficiencies are within the tolerances specified in IS: 1791 will be allowed to be employed.

Ingredients for design mix concrete shall be measured by weight. For small jobs portable swing weigh Batching conforming to IS: 2722 may be used.

Batching plant conforming to IS: 4925 shall be used for large jobs. The batching equipment shall be fitted with an accurate mechanism for weighing separately the cement, fine aggregate and coarse aggregate. Water may be measured by volume or by weight. All measuring equipment should be maintained in a clean serviceable condition, and their accuracy shall be checked periodically.

Mechanical / electrical control shall be provided on the mixing equipment to ensure the batch cannot be discharged until approved mixing time has elapsed and the entire batch shall be discharged before the mixer is recharged.

Where admixtures are employed, separate containers & measuring devices shall be used.

For minor concreting works, batching by volume according to specific weight may be permitted by the Engineer. In that case the whole bags of cement shall be used and gauge boxes used for measuring aggregates.

When hand mixing is permitted by the Engineer, it shall be carried out on a water-tight platform and care shall be taken to ensure that mixing is continued until the mass is uniform in colour and consistency. In case of hand-mixing, 10% extra cement shall be added to each batch.

2.13 Sampling and Testing of Materials:

1. General:

- 1.1. The method of sampling for testing of construction materials and work / job samples shall be as per the relevant IS / standards / codes and in line with the requirements of the technical specifications / quality plans. All samples shall be jointly drawn, signed and sealed wherever required, by the Contractor and the engineer or his authorized representative.
- 1.2. The Contractor shall carry out testing in accordance with the relevant IS / standards/codes and in line with the requirements of the technical

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specifications/quality plans. Where no specific testing procedure is mentioned, the tests shall be carried out as per the best prevalent engineering practices and to the directions of the Engineer. All testing shall be done in the presence of the engineer or his authorized representative.

- 1.3. Before execution of any civil work the Contractor shall conduct full scale suitability tests on various construction and building material such as fine and coarse aggregates, cement, admixtures, supplementary cementations materials and construction water to ascertain their suitability for use and the concrete mix designs conducted from all IITs, NCB, CSMRS, reputed government / autonomous laboratories / organizations, NITs and other reputed testing laboratories. On approval of NSPCL. The test samples for such full scale testing shall be jointly sampled and sealed by the engineer and Contractor, thereafter these shall be sent to the concerned laboratory through the covering letter signed by field quality assurance (FQA) representative of the engineer.
- 1.4. The Contractor shall timely initiate the action with regard to the evaluation of aggregates and other building material including concrete mix design, so as to ensure completion of these tests before start of civil works at site, thereby not affecting any project work. The test reports and recommendations for suitability of the materials including concrete mix design shall be promptly submitted by the Contractor to the engineer.

2. Aggregates

Evaluation of aggregate for potential alkali-aggregate reactivity shall be carried out as per following scope of work.

A. Evaluation of Aggregates for Mechanical / Physical Properties:

- a) To carry out different tests on coarse aggregate sample i.e. specific gravity, water absorption, sieve analysis, deleterious material; soundness, crushing value, impact value, abrasion value, elongation index and flakiness index, as per IS: 2386.
- b) To carry out different tests on fine aggregate sample i.e. specific gravity, water absorption, sieve analysis, deleterious material, soundness, silt content, clay content and organic impurities as per IS: 2386.
- c) To prepare evaluation report based on test results of a) and b) above and to advise regarding suitability of fine and coarse aggregates.

B. Evaluation of Aggregates for Potential Alkali-Aggregate Reactivity:

- a) To carry out petrographic analysis and accelerated Mortar bar Test on aggregate samples (1N NaOH at 80 deg. Centigrade for 14 days as per ASTM 1260, or the method established/ developed by CSMRS for 22days test).

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b) To prepare a report based on test results of a) above and to advise regarding suitability of aggregates to be used and further testing required if any.

3. Cement

Representative samples will be taken from each consignment of cement received from the manufacturer/supplier for carrying out the tests for fineness (by hand sieving), setting time and compressive strengths. Soundness Tests may also be required to be carried out if required by the Engineer.

The tests shall be carried out free of charge by Contractor as per the terms and conditions of the Contract the tests shall be carried out by him.

4. Water

Sampling and Testing of water being used for concrete works as per IS: 3550 will be carried out by the Contractor at regular intervals and whenever directed by the Engineer. The final acceptance criteria in case of doubt will be as per IS: 3025 & IS: 456.

5. Admixture

A. Air Entraining Agents (A.E.A)

Initially, before starting to use A.E.A., relationship between the percentage of air entrained and the cube crushing strength vis-à-vis quantity of A.E.A. used for all types of concrete will be established by the Contractor by carrying out sufficiently large number of tests. After then, at regular intervals and whenever directed by the Engineer, the Contractor will check up the actual percentages of air entrained and corresponding crushing strengths to correlate with the earlier test results.

B. Other Admixtures

Tests for establishing the various properties of any other admixtures which may be required to be added shall be carried out by the Contractor.

6. Concrete

The sampling of concrete, making the test specimens, curing and testing procedure etc. shall be in accordance with IS:516 and IS:1199 the size of specimen being 15 cm cubes. Normally, only compression tests shall be performed but under special circumstances the Engineer may require other tests to be performed in accordance with IS: 516.

Sampling procedure, frequency of sampling and test specimen shall conform to Clause 14 of IS: 456.

To control the consistency of concrete from every mixing plant, slump tests and/or compacting factor tests in accordance with IS: 1199 and as mentioned in Clause 3.6 of this Specification shall be carried out by the Contractor every two hours or as

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directed by the Engineer. Slumps corresponding to the test specimens shall be recorded for reference.

The acceptance criteria of concrete shall be in accordance with Clause 15 of IS: 456.

Concrete work found unsuitable for acceptance shall have to be dismantled and replacement is to be done as per specification by the Contractor. No payment for the dismantled concrete, the relevant formwork and reinforcement, embedded fixtures, etc. wasted in the dismantled portion shall be made. In the course of dismantling, if any damage is done to the embedded items or adjacent structures, the same shall be made good to the satisfaction of the Engineer.

2.14 Acceptance Criteria:

1. Standard Deviation

Standard deviation shall be based on test results and determination of Standard deviation shall conform to clause 16 of IS: 456.

2. Acceptance Criteria

The strength requirements and acceptance criteria shall conform to Clause 16 of IS: 456.

3. Inspection and Core Tests

Inspection of concrete work immediately after stripping the formwork and core test of structures shall conform to Clause 17 of IS: 456.

2.15 Laboratory and Field Testing:

1. The field laboratory for QA and QC activities shall be constructed and setup by the Contractor in line with the indicative field QA&QC laboratory set-up enclosed at Annexure-I. The Laboratory building shall be constructed and installed with the adequate facilities to meet the requirement of envisaged test setup. Temperature and humidity controls shall be available wherever necessary during testing of samples. The quality plan shall identify the testing equipment / instrument, which the Contractor shall deploy and equip the field quality laboratory for meeting the field quality plan requirements. The Contractor shall furnish a comprehensive list of testing equipment / instrument required to meet the planned/scheduled tests for the execution of works for OWNER acceptance/ approval. The Contractor shall mobilize the requisite laboratory equipment and QA&QC manpower at least 15 days prior to the planned test activity as per the schedule of tests.
2. All equipment and instruments in the field shall be calibrated before the commencement of tests and then at regular intervals, as per the manufacturer's recommendation and as directed by the OWNER. The calibration certificates shall specify the fitness of the equipment and instruments within the limit of tolerance for use. Contractor shall arrange for calibration of equipment and instruments by an NABL / NPL accredited agency and the calibration report shall be submitted to OWNER.
3. The tests which cannot be carried out in the field laboratory shall be done at a laboratory of repute. This includes all IITs, NCB, CSMRS, reputed government / autonomous laboratories / organizations, NITs and other reputed testing laboratories. The test samples

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for such test shall be jointly selected and sealed by the engineer and thereafter these shall be sent to the concerned laboratory through the covering letter signed by OWNER engineer.

The test report along with the recommendations shall be obtained from the laboratories without delay and submitted to OWNER.

4. Based on the schedule of work agreed with the engineer-in-charge and the approved FQP, the Contractor shall prepare a schedule of tests and submit them to the engineer-in-charge and organize to carry out the tests as scheduled /agreed.

Annexure-I

LIST OF RMC FIELD QUALITY ASSURANCE LABORATORY APPARATUS

SL NO	DESCRIPTION	QUANTITY
1	Cube moulds - 150 mm (ISI marked)	50
2	Cube moulds - 70.6 mm	9
3	Cube testing machine with two dial gauge and brick plate attachment	1 sets of 2000 kN capacity each
4	Digital thermometer - 200°C	3
5	Electrical oven	1
6	IS sieve set along with sieve shaker – 75 µ, 150 µ, 300 µ, 600 µ, 1.18 mm, 2.36 mm, 4.75 mm, 6.3 mm, 10 mm, 12.5 mm, 16 mm, 20 mm, 22.4 mm, 25 mm, 31.5 mm, 40 mm, 50 mm, 53 mm, 63 mm, 80 mm, 90 mm, 120 mm, 125 mm, pan	1 Set for Sand & 1 set for coarse aggregate
7	Measuring cylinder (glass) 50 ml, 200 ml, 500 ml	2 each
8	Physical balance Digital 10 kg capacity L.C. – 1 gm	1
9	Platform balance – Digital: 200 kg capacity	1
10	Pycnometer	2
11	Slump cone with tamping rod	4
12	Specific gravity bottle – 50 ml	2
13	Air entrainment meter capacity – 0.005 cum	2

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14	English type trowel	4
15	Impact testing machine	1
16	Le-Chatelier apparatus with water bath	2
17	Measuring cylinder (plastic) 50 ml, 100 ml, 200 ml, 500 ml	1
18	pH meter	1
19	Screw gauge	2
20	Spatula	4
21	Standard sand grade 1, 2, 3 500 kg	each
22	Stop watch - Digital	1
23	Thermometer ordinary 50°C	5
24	Vernier calipers - Digital	1
25	Vicat apparatus	2
26	Weigh Boxes	4
27	Cylindrical measures: - capacity 0.01 cum, Dia (I) – 250 mm, Height – 280 mm, (I) with tamping rod as per IS 1199.	1
28	Rapid Curing Water Tank (IS: 1199)	1
29	Flow Table for self compacting Concrete	1

Annexure-II

INDICATIVE LIST OF BOUGHT OUT ITEMS FOR READY MIX CONCRETE WORKS

Sl. No	Bought out Item	Proposed Make	Proposed list of Manufacturers
1	Cement		
2	Construction Chemicals admixtures, waterproofing, accelerators,		
3	Any other specific high value and critical bought out Item required, meeting the specification requirements		

Note: The Bidders are required to indicate the list of proposed manufacturers/ sub vendors for each of the BOI in their Bid proposal, which shall be discussed for finalization at post bid stage.

2.16 List of IS Codes and Standards for Reference:

BHEL-PSWR (VOL-I-A- TECHNICAL BID SPECIFICATION)

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2.17 All work under this specification shall, unless specified otherwise, conform to the latest revisions and/or replacements of the following or any other Indian Standard Specifications and Codes of Practice. In case any particular aspect of work is not specifically covered by Indian Standard Specifications, any other standard practice, as may be specified by the Engineer, shall be followed: -

- IS: 269 - Indian Standard Specification for Ordinary Portland Cement
- IS: 383 - Indian Standard Specification for Coarse and Fine Aggregates from Natural Sources for Concrete
- IS: 455 - Indian Standard Specification for Portland Slag Cement
- IS: 456 - Indian Standard Code of Practice for Plain and Reinforced Concrete
- IS: 516 - Indian Standard Specification for Methods of Test for Strength of Concrete
- IS: 1200 - Indian Standard Specification for Method of (Part-II) Measurement Cement Concrete Works.
- IS: 1489 - Indian Standard Specification for Portland - Pozzolona Cement - Part 1 & 2
- IS: 1791 - Indian Standard Specification for Batch Type Concrete Mixers
- IS: 2386 - Indian Standard Specification for Methods of Test for Aggregates for Concrete - Part-I to VIII
- IS: 2430 - Indian standard specification for method of sampling of Aggregate for concrete.
- IS: 2514 - Indian Standard Specification for Concrete Vibrating Tables
- IS: 2645 - Integral Cement water proofing compound
- IS: 2722 - Indian Standard Specification for Portable Swing Weigh Batchers for Concrete (Single and Double Bucket type)
- IS: 2770 - Indian Standard Specification for Method of Testing Bond in Reinforced Concrete. Part - 1: Pull out Test
- IS: 3025 - Indian Standard Specification for Methods of Sampling and Test (Physical and Chemical) for Water & waste water - Part - 1 to 37
- IS: 3550 - Indian Standard Specification for Method of Test for Routine Control for Water used in Industry
- IS: 3812 - Indian Standard Specification for Fly Ash for Use as Pozzolana & Admixture

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- IS: 4031 - Indian Standard Specification for Method of Tests for Hydraulic Cement - Part - 1 to 14
- IS: 4082 - Indian Standard Specification for Recommendation on Stacking and Storage of Construction Materials at site
- IS: 4634 - Indian Standard Specification for Method of Testing Performance of Batch-type Concrete Mixers
- IS: 4925 - Indian Standard Specification for Concrete Batching and Mixing Plant
- IS: 4926 - Indian Standard Specification for Ready Mixed Concrete
- IS: 5512 - Indian Standard Specification for Flow Table for use in Tests of Hydraulic Cement and Pozzolan Materials
- IS: 5513 - Indian Standard Specification for Vicat Apparatus
- IS: 5515 - Indian Standard Specification for Compaction Factor Apparatus
- IS: 5816 - Indian Standard Specification for Method of Test for Splitting Tensile Strength of Concrete Cylinders
- IS: 5891 - Indian Standard Specification for Hand Operated Concrete Mixers
- IS: 6452 - Indian Standard Specification for High Alumina Cement for Structural Use
- IS: 6909 - Indian Standard Specification for Super sulphated Cement
- IS: 6925 - Indian Standard Specification for Method of Test for Determination of Water Soluble Chloride in Concrete Admixtures
- IS: 7320 - Indian Standard Specification for Concrete Slump Test Apparatus
- IS: 7861 - Indian Standard Specification for (Part-I Recommended Practice for hot and cold & II) Weather Concreting
- IS: 7969 - Safety Code for Storage and Handling of Building Materials
- IS: 8041 - Indian Standard Specification for Rapid Hardening Portland cement
- IS: 8112 - Indian Standard Specification for 43 grade Ordinary Portland Cement
- IS: 8142 - Indian Standard Specification for Determining Setting time of Concrete by Penetration Resistance
- IS: 9103 - Indian Standard Specification for Admixtures for Concrete.
- IS: 10262 - Recommended Guideline for concrete Mix Design

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IS: 12330 - Indian standard specification for sulphate resting Portland cement

IS: 12600 - Indian standard specification for low heat Portland cement.

2.18 Construction Power:

Construction power (three phase, 415 V/ 440 V) will be provided near the site at a distance of approx. 500M on chargeable basis (source of construction power shall be provided at two locations).

However, During Construction Power interruption, vendor has to keep their DG back-up to maintain steady production of Ready mix concrete till end of contract.

The bidder will have to procure & install adequate area illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with sufficient DG back-up for area lighting at different working areas for execution of the work & safety of workmen within the quoted rate.

The illumination should be such that minimum illumination requirement as specified in specification or any-where for general illumination is maintained.

1. Contractor to note that till construction power is made available by BHEL at the earliest but till then the contractor shall make his own arrangement like DG set etc. The contractor shall also take the approval/ permission of statutory authorities for his DG set installation. The Contractor has to make his own arrangement for the same as required to carry out the job under the scope of work within the quoted rate. Nothing extra shall be paid on this account of DG set up and running for construction and office maintenance etc.
2. Contractor shall be well equipped with back-up power supply arrangement like DG set etc. to tackle situations arising due to failure of supplied power, so as to ensure continuity in Operation of Batching Plant etc. that are underway at the time of power failure or important activities planned in immediate future.
3. BHEL is not responsible for any loss or damage to the Contractor's equipment as a result of variations in voltage or frequency or interruptions in power supply.
4. Contractor is advised to maintain the calibrated energy measuring instruments and use their system as efficiently as possible to maintain the HT side input energy meter reading and LT side outgoing energy meter reading to sub-contractors as equal.
5. The bidder will have to Procure & install General mobile illumination system during construction right from start of his work. This system will include temporary pole lighting, portable lighting towers with DG back-up, within the quoted price. The illumination should be such that minimum illumination requirement as specified by Indian standards for general illumination is maintained.

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6. Contractor to arrange energy meter for office.

GENERAL: -

If any other voltage level (other than normally available) is required, the same shall be arranged by the contractor from power supply as above. Contractor will have to provide at his own cost necessary calibrated energy meters (tamper proof, suitably housed in a weather proof box with lock & key arrangement) at point of power supply along with calibration certificate from authorized / accredited agency for working out the power consumption. In case of recalibration required for any reason the necessary charges including replacement by calibrated meters is to be borne by the contractor. Supply of electricity shall be governed by Electricity Act and Installation Rules and other Rules and Regulation as applicable. The contractor shall ensure usage of electricity in an efficient manner and the same may be audited by BHEL time to time. In case of any major deviation from normally accepted norms is observed, BHEL will reserve the right to impose penalty as deemed fit for such cases.

The charges only for the actual energy consumed by the contractor shall be recovered based on prevalent rate of DISCOM.

2.19 Construction water:

Contractor shall make all arrangements himself for the supply of construction water as well as potable water for labour and other personnel at the work site/ colony. Any statutory clearance required shall be obtained by the contractor. Assistance, if required shall be provided by BHEL/NSPCL

2.20 Cement:

Contractor shall supply the cement and store in silos at the batching plant. Cement Make shall be approved by BHEL/NSPCL. The storage of cement bags (if required) shall be as per clause 2.8

2.21 General Notes:

1. BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
2. The contractor shall in no case be entitled for any compensation on account of any delay in supply or non-supply thereof for all or any such materials. However, in case of non-availability of any specific section(s) which delays the completion of work, such cases shall be recorded separately in monthly planning format (F14) and shall be considered for time extension of contract.
3. Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.

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4. The contractor shall maintain proper store account for all the BHEL issued materials and shall give Three (03) copies of monthly-computerized reconciliation statement of such account showing total receipt, consumption and balance at site to the BHEL. BHEL Engineer's certification for the reconciliation of steel shall be final. The detailed reconciliation (diameter/section wise or as required) shall be done at least once in three months (03) or before submission of final bill which comes earlier.
5. Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day-to-day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same in time.
6. The contractor shall solely be responsible for the safety & security of material after it is handed over and issued to contractor by the BHEL.
7. BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL for outside job.
8. In case of non-finalization of delay analysis, BHEL at its discretion may provide provisional time extension with withholding 10% of running bills.

2.22 Procurement and Testing of Materials by Contractor:

Material required for the entire job (other than issued by BHEL as explained above) like sand, aggregates, windows, doors, ventilators, rolling shutter, sanitary fixtures, painting & finishing material, electrical fittings and wiring material and all other material required for the completion of entire scope, have to be arranged by the contractor, except those specifically indicated as BHEL scope of supply. BHEL reserves the right to reject any material not found satisfactory. Rate quoted shall be inclusive of all such contingencies and no additional payment shall be made on this account. For this purpose, sample shall be collected at site in presence of BHEL/NSPCL representative.

2.23 Bidders are requested to specifically note the following:

Bidders are requested to have pre-bid visit/ inspection of site to make them fully acquainted with the site situation & nature of job. No claim shall be entertained at later date on account of non-familiarization of site conditions. Bidders may fix up their site visit in consultation with below mentioned contact person:

Sh Pravin Anirudh M BHEL Site Office: 2x660 MW Talcher TPS Email: mpravin@bhel.in Ph. No: +91-9921247608	Sh Mohd Shoaib Mansoori PSWR Nagpur Email: msmciv@bhel.in Ph. No: +91-9099073910
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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.1	Establishment:			
3.1.1	For Construction Purpose:			
a	Open space for office (as per availability inside plant premises)	Yes		Location will be finalized after joint survey with owner. If bidder establishes the office outside the premises BHEL shall not provide for the space outside.
b	Open space for storage (as per availability inside plant premises)	Yes		Location will be finalized after joint survey with owner. If bidder establishes the office outside the premises BHEL shall not provide for the space outside.
c	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
d	Bidder's all office equipments, office / store / canteen consumables		Yes	
e	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
f	Fire fighting equipments like buckets, extinguishers etc		Yes	

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
g	Fencing of storage area, office, canteen etc of the bidder		Yes	
3.1.2	For living purpose of the bidder:			
a	Open space for labour colony (as per availability)		Yes	Contractor has to make his own arrangements shelter and transportation of labours as per their requirement.
b	Labour Colony with internal roads, sanitation, complying with statutory requirements		Yes	Construction Plan shall be approved by BHEL
3.2	Electricity:			
3.2.1	Electricity for construction purposes 3 Phase 415/440 V			
a	Single point source	Yes		Chargeable at one point near the site at a distance of approx. 500 meter. Further distribution and Metering is in scope of bidder.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.2	Electricity for office, stores, canteen etc. of the bidder.(Chargeable)			

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
a	Single point source	Yes		Chargeable -Single point as above for construction purpose, no separate point shall be given.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc. (Chargeable)			
a	Single point source		Yes	Single point as above for construction purpose, no separate point shall be given.
b	Further distribution including all materials, Energy Meter, Protection devices and its service		Yes	
c	Duties and deposits including statutory clearances if applicable		Yes	
3.3	Water Supply:			
3.3.1	For construction purposes: (free)			
a	Making the water available at single point		Yes	
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
3.3.2	Water supply for bidder's office, stores, canteen etc. (Chargeable)			
a	Making the water available at single point		Yes	Single point as above for construction purpose, no separate point shall be given
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	Contractor has to make his own arrangements for distribution.
3.3.3	Water supply for Living Purpose(Chargeable)			
a	Making the water available at single point		Yes	Single point as above for construction purpose, no separate point shall be given
b	Further distribution as per the requirement of work including supply of materials and execution		Yes	Contractor has to make his own arrangements for distribution.
3.4	Lighting			
a	For construction work (supply of all the necessary materials) 1. At office/storage area 2. At the preassembly area 3. At the construction site /area		Yes	

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART I	Scope		Remarks
		BHEL	Bidder	
b	For construction work (execution of the lighting work/ arrangements) 1. At office/storage area 2. At the preassembly area 3 At the construction site /area		Yes	
c	Providing the necessary consumables like bulbs, switches, etc during the course of project work		Yes	
d	Lighting for the living purposes of the bidder at the colony / quarters		Yes	
3.5	Communication facilities for site operations of the bidder			
a	Téléphone, fax, internet, intranet, e-mail etc		Yes	
3.6	Compressed air wherever required for the work		Yes	
3.7	Demobilization of all the above facilities		Yes	
3.8	Transportation			
a	For site personnel of the bidder		Yes	
b	For bidder's equipments and consumables (T&P, Consumables etc)		Yes	

Sl. No	Description PART II	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9	Erection Facilities			
3.9.1	Engineering works for construction:			
a	Providing the erection/constructions drawings for all the equipments covered under this scope	Yes		

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Chapter – III: Facilities in the scope of Contractor/BHEL (Scope Matrix)

Sl. No	Description PART II	Scope / to be taken care by		Remarks
		BHEL	Bidder	
3.9	Erection Facilities			
b	Drawings for construction methods		Yes	In consultation with BHEL
c	As-built drawings where ever deviations observed and executed and also based on the decisions taken at site		Yes	Changes are to be marked in drawing & handover to BHEL on completion of work.
d	Shipping lists etc for reference and planning the activities			Not Applicable
e	Preparation of site erection schedules and other input requirements	Yes	Yes	In consultation with BHEL
f	Review of performance and revision of site erection schedules in order to achieve the end dates and other commitments	Yes	Yes	In consultation with BHEL
g	Weekly erection schedules based on Sl No. e		Yes	In consultation with BHEL
h	Daily erection / work plan based on Sl No. g		Yes	In consultation with BHEL
i	Periodic visit of the senior official of the bidder to site to review the progress so that works is completed as per schedule. It is suggested this review by the senior official of the bidder should be done once in every two months.		Yes	
j	Preparation of preassembly bay		Yes	
k	Laying of racks for gantry crane if provided by BHEL or brought by the contractor /bidder himself		Yes	

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

4.0 Tools and Plants:

All the tools and plants required for execution of the above work are in contractor's scope.

Nos. of T&Ps to be deployed at site shall be decided w.r.t. monthly plan and review format (F-14) based on site requirement. Below given Nos are tentative for planning purposes by the bidder.

Sl. No.	Description of T&P	Quantity
1	Automatic Batching Plant of capacity 30 Cum/Hr. with minimum One (01) silos of 100 MT capacity additional silo for PPC (if required)	01 No.
2	Chiller Plant connected with Batching Plant	As per requirement
3	Transit Mixers	As per requirement
3	Concrete Pumps of suitable capacity	01 Nos.
4	Concrete Boom -Placer	As per requirement
5	Loader of suitable capacity	As per requirement
6	DG Set of 125 KVA Capacity	As per requirement
7	Ready mix concrete Testing Lab AC Lab 4.50 m x 4.50 m and Non-AC Lab 4.50 m x 6.00 m with required Equipment & Instrument as per Annexure - A	01 No.
8	Mould for Concrete compressive strength testing	50 Nos.
9	Drinking water tank – 500 lit.	01 No.
10	Self-priming water pump 5HP (diesel / electric)	02 Nos.
11	Dumper	02 Nos.
12	Welding rectifier	As per requirement
13	Water Tanker with sprinkler attachment	01 No.
14	All equipment for area Lightning like LED/Halogen bulbs and Portable light Towers etc.	As per requirement
15	Computer with printing/photocopy & CD writing facility	As per Requirement
16	Portable fire extinguishers as below:	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

Soda acid – 2 sets. Dry chemical powder – 2 sets CO2 – 2 sets. Water & sand bucket (4 buckets in one stand) – 2 sets. Fire hose with nozzle (50 M length) – 2 sets	Within 60 days
--	----------------

Note:

1. T&Ps shown in the above mentioned list is suggestive requirement considering parallel working in project area. However, mobilization schedule as mutually agreed at site for major T&Ps, have to be adhered to. Numbers/time of requirement will be reviewed from time to time at site and contractor will provide required T&Ps/equipment to ensure completion of entire work within schedule/target date of completion without any additional financial implication to BHEL. Vendor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipment. Also on completion of the respective activity, demobilization of T&Ps in total or in part can be done with the due approval of engineer in charge. Retaining of the T&Ps during the contract period will be mutually agreed in line with construction requirement. In the event of non-mobilization of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to deduct suitable amount from the dues of the bidder, with assigning reasons thereof.
2. The contractor should also submit the fitness/calibration certificate for T&Ps regularly and renew as per applicable IS standards and statutory requirements. The tools & tackles shall not be removed from site without written permission of BHEL.
3. All distribution boards, connecting cables/welding cables, wire ropes, hoses etc., including temporary air/water/electrical connectors etc. shall have to be arranged by the contractor at his own cost.
4. The contractor shall engage trained and experienced operators for the operation of T&P's and machinery. BHEL engineer will check their skill and performance before they are allowed to operate the same. However, checking of skills by BHEL does not absolve the contractor of his responsibilities for proper and safe handling of equipment, consistent good performance of operators and regular performance evaluation of operators.
5. The day to day and routine maintenance of T&Ps and machinery should be carried out by contractor and these shall be maintained in good working condition during the entire period of use T&Ps in defective/damaged condition shall be rectified promptly to the full satisfaction of BHEL engineer. Contractor shall maintain records for maintenance of major T&Ps which shall be made available for inspection whenever required. In case of any lapses on the part of the contractor, BHEL at its own discretion get the servicing/repair of equipment done at the risk and cost of the contractor with BHEL overheads as applicable time to time.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

6. The contractor shall arrange all spares needed for upkeep of all T&Ps and machinery. For cranes, contractor shall arrange spares for repair/replacement of filter, batteries, self, dynamo, gaskets, hoses, oil seals and rubber parts.
7. The contractor shall permanently deploy with them minimum number of mechanics and skilled workers for undertaking the regular maintenance of tools and plants and machinery and for increasing / shortening of the crane boom as required. The contractor shall also arrange required tools, supports, consumables, illumination etc. for the above purpose.
8. The contractor shall arrange for consolidation of ground and arrangement of sleeper's/sand bag filling etc. for safe operation / movement of equipment including cranes/trailers etc. at his cost.
9. In the event of BHEL arranging T&P's and Machineries at the cost and risk of contractor, any loss / damage to any part of T&Ps and machineries provided by BHEL shall be to the contractor's account and any expenditure on these accounts by BHEL will be recovered from the contractor's bill in case the contractor fails to make good the loss.
10. Contractor shall ensure deployment of serviced and healthy T&Ps including cranes, lifting tackles, wire ropes, manila ropes, winches and slings etc. History card and maintenance records for major T&Ps will be maintained by the contractor and will be made available to BHEL engineer for inspection as and when required. Identification for such T&Ps will be done as per BHEL Engineer's advice.
11. Contractor shall ensure deployment of reliable and calibrated IMTEs (Inspection Measuring and Test Equipment). The IMTEs shall have test/calibration certificates from authorized / Govt. approved / accredited agencies traceable to National/ International standards. Each IMTE shall have a label indicating calibration status Le., date of calibration, calibration agency and due date for calibration. A list of such instruments deployed by contractor at site with its calibration status is to be submitted to BHEL engineer for control.
12. Re-testing / re-calibration shall also be arranged at regular intervals during the period of use as advised by BHEL Engineer within the contract price. The contractor will also have alternate arrangements for such IMTE so that work does not suffer when the particular instrument is sent for calibration. Also if any IMTEs not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e., repeat the readings taken by that instrument, failing which BHEL may deploy IMTEs and retake the readings at contractor's 'cost.
13. BHEL shall have lien on all T&P, IMTEs and other equipment of the contractor brought to the site for the purpose of erection, testing and commissioning. BHEL shall continue to hold the lien on all such items throughout the period of contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

No material brought to the site shall be removed from the site by the contractor and/or his subcontractors without the prior written approval of the engineer.

14. The contractor shall submit month wise T&P deployment plan. It is only to assess the capability as well as understanding of the contractor to execute the work. However, it shall be the contractor's responsibility to deploy the required T&Ps, for timely and successful completion of the job, to any extent over and above those indicated in the above deployment plan (including those which are not covered in the plan submitted) without any compensation on this account.
15. Medical/First aid center/medicine purchased for emergency/Doctor purpose along with ambulance services with fuel and operator (round the clock) shall be arranged by BHEL for handling medical emergencies. Cost against these facilities shall be distributed / shared among the vendors working in Talcher Project site proportionately based on contract value.

4.1 Measuring and Monitoring Device (MMD):

To be finalized as per site requirement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – V: T&Ps and MMEs to be Provided by BHEL

1. LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS:
BHEL shall not provide any T&Ps for this scope of work.
All T&Ps required for handling of items / materials to be arranged by bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

6.0 Time Schedule and Mobilization:

6.1 Initial Mobilization and Time Schedule:

After issue of LOI (though Fax/courier/email) the contractor shall report to the Construction Manager/Site In-Charge of BHEL at site within seven (07) days from date of LOI and submit detailed mobilization plan to start work within 15 days from date of LOI; unless instructed by BHEL to differ start of work in writing.

The contractor has to subsequently augment his resources in such a manner that the entire works are completed within the contract period of **12 (Twelve) Months** from the date of start of work in a manner required by BHEL to match with the project schedule.

Date of start (DOS) of works shall be reckoned as date of excavation for installation of batching plant or Date of Approval of an Existing Established Batching Plant from BHEL and/or NSPCL. However, the date of start may be reviewed and changed accordingly by Construction Manager / Site-in-Charge /Project Manager of BHEL with recorded reasons in the KOM (Kick of Meeting).

6.2 Schedule of Completion:

Entire work shall be carried out in accordance with the broad supply schedule given below, within the stipulated period. Within 30 days of LOI, the contractor shall discuss with BHEL site engineer & furnish detail construction schedule (L-3/ L-4) indicating all major activities and get it approved from BHEL engineer. This schedule will undergo review and based on progress vis-à-vis project requirement, contractor shall have to submit revised schedule for approval of BHEL.

Sl. No.	Activity	Schedule of completion from start of work (If Batching Plant is Installed)	
		If Batching Plant is Installed	If Established Batching Plant is hired
1	Completion of Installation of Batching Plant.	30 days	NA
2	Completion of finalization & approval of Design Mixes of ready mix concrete	30 days	30 days
3	Earliest Start of production of Ready mix concrete	40 days	10 Days (only if existing design mix is allowed)

- 6.2.1 The above schedule is only tentative. The above schedule shall be advanced, if there are requirements to advance the project schedule and the civil works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VI: Time Schedule

- 6.2.2 In order to meet the 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 Engineer.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VII: TERMS OF PAYMENT

7.0 Terms of Payment:

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

The contractor shall submit his running bill (RA bill) once in a month at the end of each month in line with payment terms / billing schedule indicated below. The RA bill complete in all respects accompanied by BHEL engineers certified / measurement sheet, jointly signed, will be paid after passing of the bill subject to completeness & correctness. The measurement will be taken as specified in terms & conditions of contract and certified by the BHEL engineer of actual work. However, no extra payment shall be made in the event of delay in release of payment.

95% pro-rata monthly RA payment shall be considered for payment based on monthly work completion certificate to be issued by BHEL engineer as per approved BBU/Price Schedule.

Balance 5% shall be paid after completion of warranty period of 03 months from the date of completion of 28 days cube test result meeting the acceptance criteria of IS 456.

The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc. and other dues in the meanwhile. No interest shall be payable for the payment (if any) made beyond 30 days.

All documents like HR Clearance, Quality and Safety Compliances, etc. required for processing the RA Bills should be submitted along with RA Bills.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

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

1. All taxes excluding GST, GST Cess & BOCW Cess but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by you and shall not be payable extra.
2. Any increase of the taxes excluding GST, GST Cess & BOCW Cess, at any stage during execution including extension of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements. Please note that since GST on output will be paid by BHEL separately as enumerated below, your quoted rates/ price should be after considering the Input Credit under GST law at your end.
3. **GST** :
The successful bidder shall furnish proof of GST registration. GST along with Cess (as applicable) legally leviable & payable by the successful bidder as per GST Law, shall be paid by BHEL. Hence Bidder shall not include GST along with Cess (as applicable) in their quoted price.
4. GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return
5. E-invoicing under GST has been implemented with effect from 1st October 2020 for all the taxable persons having turnover more than the threshold limit in any preceding financial year from 2017-18 onwards. Therefore, for all the taxable persons falling under the purview of E-invoice, it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from E-Invoicing portal of the Government for the purpose of issuing a valid Tax Invoice. Only an E-invoice issued in the manner prescribed under rule 48(4) of CGST Rules shall be treated as valid invoice for reimbursement of GST amount. If the successful Bidder is not falling under the purview of E-Invoicing then he has to submit a declaration in that respect along with relevant financial statements.
6. Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:
BHEL GSTN – As per **Annexure -1**
NAME -- Bharat Heavy Electricals Limited
ADDRESS – Site address

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

7. Bidder to immediately intimate on the day of removal of Goods (in case of any supply of goods) to BHEL along with all relevant details and a scanned copy of Tax Invoice to below email ids to enable BHEL to meet its GST related compliances :-
Email id ---- to be intimated later on.
In case of delay in submission of the abovementioned documents on the date of dispatch, BHEL may incur penalty /interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from the successful bidder, if such delay is not attributable to BHEL.
8. In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with Rule 53.
9. Bidder shall note that in case GST credit is delayed/ denied to BHEL due to delayed / non receipt of goods and /or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from the vendor along with interest levied / leviable on BHEL, as the case may be.
10. Bidder shall upload the Invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law , GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the bidder along with interest levied / leviable on BHEL.
11. Way Bill: Successful Bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract.

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

12. **New taxes and duties:** -Any New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period including extension, if the same is not attributable to you, shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.
Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

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

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

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

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

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

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

ANNEXURE-1

State wise GSTIN no.s of BHEL

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

ANNEXURE-2

BOCW Act & Cess Act

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

13. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – VIII: Taxes and Duties

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X –APPENDIX

9.0 Following technical Specifications and Drawings shall be integral part of this tender:

SL. NO.	Document
5.	Section A - SCOPE OF WORK
6.	Section B - PROJECT INFORMATION
7.	Section C - TECHNICAL REQUIREMENTS SPECIFIC TO THE CONTRACT
8.	Section D - TECHNICAL SPECIFICATIONS

NOTE- ALL THE ABOVE MENTIONED DOCUMENTS ARE UPLOADED ON E-PROCUREMENT PORTAL AS VOL-I-E-3030.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X –APPENDIX

Tentative Manpower Requirement

- (a) Quality manager – with 7 Years' experience in Quality.
- (b) Quality Control Engineer/Chemist – 04 head
- (c) Safety Engineer – 01 head
- (d) Operator, Licensed Electrician, Mechanic - As per requirement
- (e) Security Guards (Round The Clock) – As per requirement.
- (f) Pump Operator and Helpers – As per requirement
- (g) Boom Placer Operator and Helper- As per requirement
- (h) Transit Mixer Driver, Operator and Helper – As per requirement

Note: Above manpower requirement is tentative only. Contractor shall augment manpower to meet the project schedule/ milestones.

- 10.1 Deputation of above man-power shall be jointly decided at site in line with construction Schedule.
- 10.2 Engineer/ supervisor for other functions like store & purchase, material management, planning, finance, administration etc. are to be provided as per site requirement and not considered in above list.
- 10.3 In the event of non-deputation of engineer/ supervisor by the bidder as per above agreed schedule, BHEL shall reserve the right to deduct Rs 50,000.00 per man-month for engineer, Rs 35,000.00 per man-month for the supervisor/ safety officer/chemist and Rs. 30,000 per man-month for safety supervisor from RA bills. Further, induction of manpower regarding site supervisor & site engineer will be decided at site as per requirement without any financial implication.
- 10.4 BHEL reserves the right to reject or approve the list of personnel proposed by the contractor. The persons whose bio-data have been approved by BHEL will have to be posted at site and deviation in this regard will not be permitted unless specific & reasonable justification is made.
- 10.5 In addition to above, a well experienced qualified engineer to be designated, as 'Project Co-coordinator', shall be deployed by the contractor. Such engineer shall have adequate exposure on the job and shall remain fully involved in all planning activities, guidance etc. to contractor's own team during the complete execution period of contract.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X –APPENDIX

10.6 The contractor should also submit the fitness/calibration certificate for T&Ps regularly and renew it as per applicable IS standards and statutory requirements. The tools & tackles shall not be removed from site without written permission of BHEL.

ANNEXURE- A

LIST OF EQUIPMENTS FOR CIVIL SITE LABORATORY

SL NO.	NAME OF TEST	NAME OF EQUIPMENT	SIZE OF EQUIPMENT	IS REF.
1	Initial & final setting time, Consistency of cement	Vicat Apparatus with desk pot	Standard	IS 5513
2	Abrasion value test	Los Angles Abrasion testing machine	Standard	IS 2386
3	Aggregate Impact value test	Aggregate Impact value testing machine.	Standard	IS 9377
4	Aggregate crushing value test	Crushing value apparatus	Standard	IS 2386
5	Flakiness index	Thickness gauge for measuring flakiness index.	Standard	IS 2386
6	Elongation Index	Elongation gauge	Standard	IS 2386
7	Bulk density, voids and bulking apparatus	Measuring cylinders	3, 5,10 & 15 liters cylinders	
8	Ready mix concrete Compressive test	Digital Compressive Testing Machine.	2000KN capacity	IS 2505
9	Cement cube casting	Cube mould	70.6 x 70.6 x 70.6 mm, 09 Nos. minimum	IS 10086
10	Ready mix concrete Cube Testing	Ready mix concrete Cube Mould	150x150x150mm, minimum 120 Nos.	IS 10086
11	Workability of ready mix concrete	Slump cone	Standard, at least 04 nos	IS 456
12	Specific gravity of aggregates	Pycnometer	Standard, at least 02 nos	IS 383
13	Cement mortar vibration	Motorised vibration machine for cement cube casting	Standard	IS 4031
14	Course aggregate Sieve analysis (Ready mix concrete & Road Works)	Sieve set	450mm dia GI Frames Size: 125 mm, 90 mm, 75 mm, 63 mm, 53 mm, 40 mm, 20 mm, 16 mm, 12.5 mm, 10 mm, 4.75 mm, Pan and cover (2 Sets)	IS 383
15	Fine aggregate sieve analysis	Sieve set	200 mm dia Brass sieves; Size 4.75 mm, 2.36 mm, 1.18 mm 600 micron, 300 micron,	IS 383

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER X –APPENDIX

			150 micron, 75 micron, 75 micron, Pan and cover (2 Sets)	
16	Sieve Shaker	Motorised Sieve shaker	Mfg. Catalogue	
17	Silt content check	Sand silt content beaker	Standard	

Process Control Accessories				
Sl	Description of Equipment	Specification	Size / No.	
1	Hot air oven	Temperature range 50° C to 300° C	600 x 600 x 600 mm (min. size)	
2	Electronic balance	600g x 0.01g, 10Kg and 50 kg	3 nos.	
3	Physical balance	5 kg capacity	Loose weights up to 5 kg	
4	Thermometer	Temperature 0°C to 50°C	1 No. Digital & 2 Analogue.	
5				
6	Measuring jars	100ml, 200ml, 500ml & 1000 ml	2 nos. set of each size	
7	Gauging trowel	100mm & 200 mm with wooden handle	4 nos.	
8	Spatula	100mm & 200 mm with long blade wooden handle	2 nos. each size	
9	Stainless steel scoop	2 kg and 5 kg	2 nos. each	
10				
11	Digital pH meter	0.1 least count	02 nos.	
12				
13				
14	GI tray	600 x 450 x 50 mm, 450 x 300 x 40 mm, 300 x 250 x 40 mm	02 nos. each	
15	Electric mortar mixer	0.25 CUM capacity.	01 no	
16	Rebound hammer test	Digital Rebound hammer	01 no	IS 13311
17	Ultrasonic pulse velocity test	UPV apparatus for ready mix concrete	01 no	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-XI SCHEDULE OF RATES & QUANTITIES

This Chapter consists of Part A & Part B of Volume II “Price bid”:

CONTENTS	
Description	Remarks
PART A: Instructions to the Bidders	Instructions
PART B: % weightage for amount of individual items of Schedule of quantity	Refer Latest Chapter-XI of Vol-IA TCC (BILL OF QUANTITIES AND % WEIGHTAGE OF INDIVIDUAL ITEMS)
PART C: Total Lump Sum Price for entire scope of Work	This part is implanted in the E-Procurement portal entitled as “ Part-C of Vol-II Price Bid ”.

Part A: Instructions to the Bidders

- Bidders shall quote Total Lump-sum Price for the entire scope of work at the place implanted in the E-Procurement Portal titled as “Part-C of Vol-II Price Bid”.** Price mentioned elsewhere in the offer of the bidder shall be treated as Null and Void.
- BHEL has fixed the % weightages as in “Part-B” for the amount of individual items of Schedule of Quantity w.r.t. the total price of Price Bid Vol-II.
- Based on the pre-fixed % weightages, amount of individual items shall be derived by BHEL. This amount shall not be rounded off.
- Based on the quantities of individual item and the amount arrived in Sl. No 3 above, item rate of individual items shall be derived by BHEL. This item rate shall be rounded off up to two decimal places and shall be used to calculate the total amount of an item.
- For the convenience of bidders, BHEL has issued an excel sheet with all requisite formulae as detailed above. **However, this excel sheet shall not form part of contract document. Further, this sheet should not be uploaded at the e-Portal.**
- Bidders to note that this is an ‘**Item rate contract**’. Payment shall be made for the actual quantities of work executed at the Unit rate arrived at as per serial no 4 above.

PART B: % weightage for amount of individual items of Schedule of quantity w.r.t. the total price (as quoted by the bidder in “Part C of Vol-II-Price Bid”)

Note: This Chapter-XI is uploaded separately as file titled ‘**Chapter XI-BOQ and Percentage Weightage**’-3030 for **PART-B**