



BHARAT HEAVY ELECTRICALS LIMITED भारत हैवी इलेक्ट्रिकल्स लिमिटेड
(A GOVT. OF INDIA UNDERTAKING) (भारत सरकार का उपक्रम)
PROJECT ENGINEERING MANAGEMENT परियोजना अभियांत्रिकी प्रबंधन

निविदा आमंत्रण सूचना
NOTICE INVITING TENDER (NIT)

Enquiry No-77/25/6169/SAN

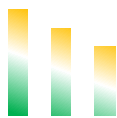
Date: 22-Oct-25

BHEL invites offers from reputed Suppliers as per following terms and conditions -

1. Tender Type	Open Tender (Domestic-Indian)		
2. Package	D/G EOT CRANES UP TO 100T		
3. Project	2 X 800 MW DVC Koderma TPS Phase-II		
4. Executing Agency	BHEL-PSER		
5. Mode of Enquiry	E - PROCUREMENT		
6. Numbers of Part bid	2-Part bid (Techno-commercial and Price bid)		
7. Due Date & Time	For offer submission	1-Nov-25	12:00 PM
	For P-1 bid opening	1-Nov-25	04:00 PM
8. Earnest Money Deposit (EMD) (Refer S.no- 25 for details)	Applicable	EMD Amount (Rs)	6,00,000
9. Tender Cost	NIL		
10. Eligibility of Local Supplier as per MII (Refer S.no- 33 for details)	Nature of Package: Non - Divisible Only Class I Supplier (with local content 60% and above)		
11. Technical Scope	As per Technical specification No: PE-TS-519-501-A001 Rev-00		
12. Pre-bid Clarification	Last Date for Seeking Clarification	28-Oct-25	
	Suppliers to contact BHEL-PEM (over phone/ mail/ visit-BHEL-PEM) for any clarification (Technical or Commercial) at least 05 days before the due date of Tender opening & get it clarified well before the due date, so that offers by the Suppliers may be submitted within the due date & time. BHEL reserves the right not to respond to pre-bid clarifications received after last date of seeking clarification. Bidders to furnish the pre-bid queries in editable format also.		
13. Schedule of Pre-bid Discussion	Based on Bidder's Request, if required, Pre-Bid Meeting shall be arranged.		
14. Prequalification Requirements	Financial PQR- YES	Technical PQR- YES	
	This item/package /system falls under the list of items defined in para 3 of ministry of finance guideline dated 20.09.16 (Procurement of items related to Public safety, Health, Critical Security operations & Equipment's etc.) & hence criteria of prior experience/Turnover shall be same for all the Suppliers including Start-up/MSME.		
15. CIF Content	Not Available		



16. Mode of Price Finalisation	BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among all the techno-commercially qualified bidders. Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders 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. In case of single qualified bid, price bid of single qualified bidder shall be opened.
17. HSE Guidelines	Applicable
18. Delivery Schedule	Design & Engineering: Drawing/documents submission/resubmission schedule shall be as per Technical specification. Main Supply (along with commissioning spares): 08 months from the date of LOA. E&C: 12 months from date of LOA or 04 months from the date of availability of front whichever is later. Site front availability will be reckoned as the date when site informs vendor for mobilization of manpower & resources. Mandatory Spares: To be delivered along with the last consignment of main supply within the contractual delivery period or 04 months from manufacturing clearance whichever is later.
19. Delivery terms	FOR Despatch Station for supply
20. Payment Terms	Design & Engineering: 50% of price of Design/engineering Charges shall be made against basic engineering (i.e. Preparation, submission & approval of basic drawing/documents as indicated in tender specification) and the remaining payment shall be made for the balance engineering part on pro-rata basis. Bidder to submit additional BG of equivalent amount which shall be valid till completion of main supply. Main Supply: As per clause no-9.2.1 of GCTC of GCC BOP Rev-00. E&C: As per clause no-9.3 of GCTC of GCC BOP Rev-00. Mandatory Spares: As per clause no-9.1.1 of GCTC of GCC BOP Rev-00. Vendors shall submit billing documents for payment directly to BHEL. Payment will be released within days as mentioned below after submission of complete documents: i) 90 days for non MSME as per MSMED Act - ii). 45 days for vendors qualified and registered as Micro and Small Enterprises MSEs as per MSMED Act iii. 60 days for vendors qualified as Medium Enterprises as per MSMED Act.





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	Notes: i) Vendors are required to issue Tax Invoice inclusive of PVC value (if applicable) wherever indices are available. In case PVC indices not available, vendors to submit PVC invoices on availability of applicable indices. ii) Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of remaining payments
21. Price Basis	PVC Applicable, Refer Annexure-A for PVC Formula
22. Variation of contract value as per clause no. 6.0 of ITB of BOP GCC	+/-10% (Refer Annexure-XIII of GCC BOP Rev-00)
23. Integrity Pact Applicability - Yes	In line with cl. No. 12 of (ITB) BOP-GCC, in case of any complaints arising out of the tendering process, the matter may be referred to any of the below e-mail IDs. iem1@bhel.in; iem2@bhel.in; iem3@bhel.in As on date, the positions of Independent External Monitors (IEMs) are vacant in the Company. As and when the IEMs join based on due approval of the Competent Authority, any complaint(s) received will be shared with the IEMs.
24. Tender Evaluation	Evaluation will be done on overall L1 (Total Cost to BHEL excluding GST) basis with necessary loading as applicable. The evaluation currency for this tender shall be INR. In RA, the loading (technical/commercial), if any, shall be added by bidder while submitting the bid in reverse auction portal. Ordering shall be done after de-loading the commercial/technical loading from bidder's final price. In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of the respective L-1 bidder (s) or their representative(s). Ranking will be done accordingly. BHEL's decision in such situations shall be final & binding.
25. Earnest Money Deposit (EMD): EMD is to be submitted by all the bidders along with their bids (except Micro and Small Enterprises (MSEs) or Start-ups as recognized by Department for Promotion of Industry & Internal Trade (DPIIT). Modes of deposit The EMD shall be accepted only in the following forms: i) Electronic Fund Transfer credited in BHEL account (before tender opening): https://pem.bhel.com/Documents/SupplierSection/BHELBANKER.pdf ii) Banker's cheque/ Pay order/ Demand draft, in favor of BHEL-PEM, Noida (along with the offer). iii) Fixed Deposit Receipt (FDR) iv) Bank Guarantee from any of the Scheduled Banks (refer EMD Annexure of NIT) v) Insurance Surety Bonds.	



Scanned copy of EMD shall be uploaded by Supplier in the online bid and hard copy of the same (excluding EFT at s.no (i) shall have to be submitted to the bidder within 7 (Seven) working days of bid opening, failing which the bid shall be rejected by giving a suitable cut-off date.

Validity period of EMD: The EMD shall remain valid for a period of 45 (forty-five) days beyond the final bid validity period.

EMD shall not carry any interest.

Forfeiture of EMD: -

- I. A bidder's EMD will be forfeited if the bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required performance security within the specified period mentioned in the Tender.
- II. EMD by the tenderer to be withheld in case any action on the bidder is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors (abridged version of guidelines is available on www.bhel.com)" and forfeited/ released based on the action as determined under these guidelines.

Return of EMD: -

- I. Bid securities of the unsuccessful bidders shall be returned to them after expiry of the final bid validity period and latest by the 30th day after the award of the contract. However, Bid securities of unsuccessful bidders during first stage i.e. technical-commercial evaluation etc. shall be returned within 30 days of declaration of result of first stage i.e. technical-commercial evaluation.
- II. Bid security shall be refunded to the successful bidder on conclusion of the order/ receipt of a performance security.

26. Performance Security (Separately for each project): Successful bidder is required to submit Performance Security to BHEL-PSER as below within 14 days from the date of LOA:

- i. Initially 10% of the contract value (total Ex-works price excluding PVC). 5% of the contract value (excluding PVC) will be released after completion of E&C based on certification by Project Group/Purchaser. However, 5% of the contract value (excluding PVC) will be released on completion of all contractual obligations, including guarantee/warranty obligations based on certification by Project Group/Purchaser.
- OR
- ii. 5% of the contract value (total Ex-works price excluding PVC). Additional 5% of the contract value will be retained from first bill & subsequent bill(s) of the same contract. The retention amount will be released after completion of E&C based on certification by Project Group/Purchaser. However, 5% of the contract value (excluding PVC) will be released on completion of all contractual obligations, including guarantee/warranty obligations based on certification by Project Group/Purchaser.

Validity of PS: As per GCC BOP Rev-00, Validity mentioned in clause 11.3 of GCC BOP shall be applicable for all allowed instruments of performance security.

Modes of deposit: Performance security may be furnished in the following forms:

- a) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
- b) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- c) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).



- d) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- e) Insurance Surety Bond.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)

Performance Security should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations.

Notes/Remarks

- a) The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.
- b) Performance security should be refunded to the contractor without interest, after he duly performs and completes the contract in all respects but not later than 60(sixty) days of completion of all such obligations including the warranty under the contract.

The Performance Security shall not carry any interest.

27. Breach of contract, Remedies and Termination - Clause no. 27.0 of GCTC of GCC-BOP is not applicable. However, in case of Breach of Contract by contractor, BHEL shall recover 10% of the contract value from the contractor using following instruments:

- Encashment of security instruments like EMD, Security Deposit with BHEL -PSER against the said contract.
- balance amount (if value of security instruments is less than 10% of the contract value) from other financial remedies i.e. available bills of the contractor, retention amount etc with BHEL - PSER.
- balance amount from security instruments like EMD, Security Deposit and other financial remedies i.e. available bills of the contractor, retention amount etc. with other units of BHEL.
- (iv) If recovery is not possible then legal remedies shall be pursued

The balance scope shall be got done independently without Risk & Cost of the failed supplier/ contractor. Further, levy of Liquidated Damages, Debarment, Termination, De-scoping, Short-closure, etc., shall be applied as per provisions of the contract

28. Construction Power & Construction water mentioned at s.no -22 of SCC of the Project shall not be applicable. Construction Power & Construction water shall be as per **Annexure-D to NIT**.

29. GST shall be payable extra at actual.

30. Purchase preference would be applicable to MSE bidders as per GOI circular (No. F.1/4/2021- PPD dtd. 18.05.2023) and any other subsequent circulars / clarifications.

All the bidders are required to declare their ownership status (SC/ ST or Women-owned or others) along with their MSE category in format enclosed with NIT. This declaration, along with the Udyam Certificate, shall be mandatory for bidders to avail benefits under the Public Procurement Policy.

31. GeM Seller ID shall be mandatory before placement of order/award of contract to the successful bidder.

32. Bidder to quote non-zero freight charges in percentage (%) of their quoted Total Ex-Works prices of supply.



33. Make in India: For this procurement, the local content to categorize a supplier as Class I local supplier/ Class II local supplier/ Non-Local supplier and purchase preference to Class I local supplier shall be as defined in Public Procurement (Preference to Make India), Order 2017 Rev dated 19.07.2024 issued by DPIT. In case of subsequent order issued by nodal ministry changing the definition of local content for item in NIT, the same shall be applicable even if issued after issue of this NIT but before opening of part-II bids against this NIT. Bidders shall comply with all provisions of the Public Procurement (Preference to Make India), Order 2017 Rev dated 19.07.2024.

The margin of purchase preference shall be as per above mentioned order dtd. 19.07.2024. For this tender, offer from **only Class-I Local Suppliers** shall be considered.

Bidders are required to provide the following along with the part-1 bid:

- Provide a certificate (in line with attached draft) giving the percentage of local content.
- Provide the details of the location(s) at which the local value addition shall be made.

34. Insurance Deductibles/Excess: Insurance of the package shall be in BHEL scope. However, suppliers to take note of the following deductibles/ excess while submitting their offer:

For Storage /Erection and Testing Cover:

- Normal Excess: 5 % of the claim amount subject to a minimum of Rs. 2.25 Lakh.
- Testing Excess: 5% of the claim amount subject to minimum of Rs. 6.0 Lakh.

Act of God Perils: 10% of the claim amount subject to minimum of testing period excess.

Fire / Explosion Claims: 20% of the claim amount subject to minimum of testing period excess

Extended Maintenance Cover/ Defect Liability Cover: As applicable for testing period excess.

Third Party Liability: The policy excesses (normal/testing periods) shall apply for third party liability property damage claims also. For third party liability claims arising out of Act of GOD perils. The excess applicable to AOG claims shall apply.

"The above-mentioned insurance deductibles/excess are tentative in nature and may change after award of contract which will be applicable within quoted price".

35. Supplier to note that this is an Open Tender enquiry & consideration of their offer for price bid shall be subjected to the following conditions:

- Qualifying Technical & Financial Pre-Qualification Requirement (attached).
- Techno-Commercial acceptance of offer by BHEL-PEM.
- Approval of bidder by End Customer: - Same shall be taken up with end customer based on the latest credentials/reference list furnished by bidder. Accordingly, bidders are requested to submit credential as per the format enclosed herewith along with their technical bid

It is suggested that suppliers participating in the tender get themselves registered with BHEL-PEM as a "Regular Supplier". Regular Suppliers for the package are informed about the floated tender enquiries by BHEL-PEM. Suppliers to apply online through registration portal available at www.pem.bhel.com - Supplier Zone- Online Supplier Registration. All credentials and/or documents duly signed and stamped related to registration can be uploaded & submitted online through the website.

36. All corrigenda, addenda, amendments, time extensions, clarifications, etc. to the tender will be hosted on BHEL website (www.bhel.com) & BHEL-PEM website (www.pem.bhel.com) and GePNIC portal. Suppliers should regularly visit websites to keep themselves updated.

37. Grievance Redressal Mechanism: To promote transparency and ensure fair treatment of all bidders, a structured Grievance Redressal Mechanism is in place to address any concerns or issues arising during the tendering process or in subsequent business dealings with the company:



Suppliers/Contractors are requested to follow the below escalation process for grievance resolution:

- *First Level: Any grievance should initially be addressed to the designated Dealing Officer, whose contact details are provided in the Notice Inviting Tender (NIT)/Contract.*
- *Second Level: If the issue remains unresolved, it may be escalated by lodging a formal grievance through the SUVIDHA Portal: <https://suvidha.bhel.in/suvidha/>. Responses will be provided in accordance with the defined escalation matrix.*

- 38.** Verification of PQR documents: Bidders to ensure that Third party/customer issued certificates being submitted as proof of PQR qualification have verifiable details of document/certificate issuing authority such as name & designation of Issuing Authority and its organization contact number and e-mail Id etc. In case the same is not available, then purchaser has right to reject such document(s) from evaluation
- 39.** All Bidders to comply Govt. of India, Ministry of Power, order no-25-111612018-PG dtd 02/07/2020 regarding mandatory testing of all the imported items/equipment's/components
- 40.** Self-declarations/ Auditor's/ Accountant's Certificates submitted by the manufacturer/ supplier may be verified randomly by the committee constituted as per MoP Order 28-07-2020. In case of false documents/misrepresentation of the facts requisite action against such manufacturer/ supplier will be taken based on the recommendation of the Committee.
- 41.** If Supplier mentions Not Applicable / Not required / Not Quoted in BHEL price format, the same to be substantiated by the Supplier. If such item is required to be supplied for system completion in future, same will be supplied free of cost.
- 42.** All bidders to declare 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.
- 43.** All Safety Items as per enclosed list (refer Annexure-C to NIT) shall be provided by BHEL. BHEL shall recover the cost incurred for procurement of the items from bidder as per enclosed list. Recovery of these items on pro-rata basis shall be done from payment due to the bidder.
- 44.** At Sl.no. 17 of ITB of GCC BOP Rev.00, "Base rate of SBI on the date of bid opening, (Techno-commercial bid, in case of 2-part bids) + 6%" may be read as "Repo Rate on the date of bid opening, (Techno-commercial bid, in case of 2-part bids) + 4%"
- 45. Conflict of interest:** All bidders are required to submit the declaration regarding conflict of interest in the format enclosed with the NIT signed by the authorized signatory of the bidder
- 46.** Conciliation & Arbitration shall be as per **Annexure-B** to NIT.
- 47. Terms & Conditions:** - Other Terms & Conditions shall be as per enclosed **Special Conditions of Contract (SCC) of the project, General Conditions of Contract (GCC)-BOP Rev 00 along with corrigendum-01 to GCC - BOP** which is available on www.pem.bhel.com and other Terms and Conditions included in this Enquiry Letter.



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48. All the above terms and conditions, post-bid agreements/MoMs (during Techno- Commercial evaluation) shall automatically become a part of the Order/Contract after its finalisation.

49. Suppliers to note that offers shall be submitted strictly in accordance with the requirements of tender documents. Suppliers shall upload their complete offer meeting the requirements of the tender documents on e-procurement portal <https://eprocurebhel.co.in/nicgep/app>.

Following documents need to be uploaded:

- Offer forwarding/ covering letter with Un-price bid, Deviation Sheet (Cost of Withdrawal)
- Documents required for meeting Technical & Financial PQRs
- Integrity Pact
- Local Content Certificate in line with Make in India circular
- Land Border Certificate
- Mandatory declaration by MSE bidders
- Mandatory declaration by bidders regarding conflict of interest
- Price Bid on e-procurement portal - <https://eprocurebhel.co.in/nicgep/app>

50. It shall be the responsibility of the Supplier to ensure that the tender complete in all respects is uploaded on or before the due date and time. Incomplete/late offers shall not be considered.

51. All other correspondence thereof shall be addressed to the undersigned by name & designation and sent at the following address:

Sanjeev Kumar /Engineer-BOP
M/s Bharat Heavy Electricals Ltd.,
Project Engineering Management,
BHEL Sadan,
HRD & ESI Complex,
Plot No 25, Sector-16 A, Noida-201301
E-mail: Sanjeev_k@bhel.in
Contact No.: 0120-2218522

Upendra Chaudhary/DGM – BOP
M/s Bharat Heavy Electricals Ltd.,
Project Engineering Management,
BHEL Sadan
HRD & ESI Complex,
Plot No 25, Sector-16 A, Noida-201301
E-mail: upendrachaudhary@bhel.in
Contact No.: 0120-2218557

Note - In case you are not making an offer against this enquiry, you are requested to send a regret letter so as to reach us on or before the due date

Thanking You.

For and on behalf of BHEL

Sanjeev Kumar

Engineer/ BOP/ PEM Noida

Enclosures: -

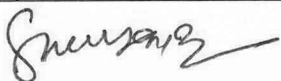
1. SCC of the Project
2. Technical & Financial PQR
3. Technical Specifications
4. Formats mentioned in NIT
5. HSE plan
6. Annexure-A for PVC
7. Annexure-B for Conciliation & Arbitration
8. Annexure- C for Safety Items list provided by BHEL.
9. Annexure-D for Construction Power & Water
10. Abridged version of applicable RA guidelines
11. General Conditions of Contract (GCC)-BOP Rev 00 along with its Corrigendum-01

PROJECT GROUP II
POWER SECTOR – PROJECT ENGINEERING MANAGEMENT
BHARAT HEAVY ELECTRICALS LIMITED

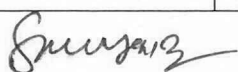
SPECIAL CONDITIONS OF CONTRACT (SCC) Rev.00
2x800 MW Koderma TPS Phase II – EPC
(JOB NO. 519)

These Conditions shall be read and construed along with latest applicable (i.e. BOI or BOP) General Conditions of Contract (GCC/ATC) enclosed along with the tender enquiry. In case of any conflict or inconsistency, the conditions given in SCC shall prevail over the GCC.

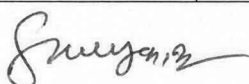
Sl. No.	Title	Description
1.	Project Name	2x800 MW Koderma TPS Phase II – EPC
2.	Nature of project & Type of Bidding	Competitive Bidding
3.	BHEL's Customer	DAMODAR VALLEY CORPORATION (DVC)
4.	Customer Consultants	NA
5.	Buyer and Paying Authority	For packages where BHEL PEM will issue the Purchase Order - BHEL PEM will be the paying authority. For packages where BHEL-PEM will issue only the LOA and Purchase Order shall be issued by BHEL PSER - BHEL PSER Site will be the paying Authority.
6.	Consignee Address (Bill To)	FOR SUPPLY PACKAGES: BHEL, Power Sector-Project Engineering Management, BHEL SADAN, 3rd FLOOR, Sector-16A, Noida, Uttar Pradesh-201301. BHEL-PEM GSTIN: 09AAACB4146P2ZC FOR TURNKEY PACKAGES (where BHEL-PEM will issue only the LOA and Purchase Order shall be issued by BHEL-PSNR): Project Director, BHEL Site Office, 2X800 MW DVC Koderma TPS PH-II, PO- Koderma TPS, Village- Benjhidihi, Dist – Koderma, Jharkhand 825421 BHEL-Koderma - GSTIN No.- 20AAACB4146P5ZP BHEL- PSER Kolkata GST No: 19AAACB4146P1ZC
7.	Delivery Address (Ship To)/BHEL Site office address	Project Director, BHEL Site Office, 2X800 MW DVC Koderma TPS PH-II, PO- Koderma TPS, Village- Benjhidihi, Dist – Koderma, Jharkhand 825421 BHEL-Koderma - GSTIN No.- 20AAACB4146P5ZP BHEL- PSER Kolkata GST No: 19AAACB4146P1ZC
8.	Location of Plant	Koderma Thermal Power Project is located near Benjhidihi village of Koderma district in Jharkhand. Nearest National Highway: NH-20 (8 km from site) Delhi-Kolkata National Highway: 25 km from site Nearest railway Station: Koderma (about 12 km from site) Nearest Airport: Gaya (108 km from site) Distance from Ranchi is about 150 km.



9.	Mode of Dispatch	By Rail/Road/Sea on door delivery and freight pre-paid basis
10.	BHEL GSTIN Details	For supply packages: BHEL-PEM is registered in the State of Uttar Pradesh with GSTIN 09AAACB4146P2ZC For Turnkey packages: BHEL-Koderma - GSTIN No.- 20AAACB4146P5ZP BHEL- PSER Kolkata GST No: 19AAACB4146P1ZC
11.	QR Code Affixing Requirement for SPMS (Mandatory Requirement)	Vendor to mandatorily required to furnish detailed shipping/packing list to BHEL in format as per Annexure 1 of this SCC. BHEL shall provide QR codes for each boxes/bundle/shipping sections etc. Vendor is mandatorily required to print the generated QR in half of A4 size printer using a normal printer. One copy of this QR code must be attached to the respective box/bundle/gunny bag/shipping section etc. The other copy of the QR code must be enclosed with the documents sent along with the consignment. After reaching at site, QR code shall be scanned at gate and material shall be received by site. Further, vendor to ensure that - All the items being dispatched in the consignment/LR are listed in the packing list. - Proper precautions are taken while affixing to ensure that the "Fixed QR Code" should not damage during transit. - QR code is correctly fixed to all the box/bundles/loose items being dispatched in consignment. Any delay arising thereof due to incorrect tagging/missing tags shall be to vendor's account. BHEL shall provide QR code within 2-3 days of submission of shipping/packing details (as per Annexure-1) by vendor. Vendor to plan dispatches accordingly without affecting the delivery schedule.
12	Transit Insurance	As per Notice Inviting Tender (NIT). In case, Transit Insurance is specified in BHEL Scope in NIT - Insurance details shall be provided by BHEL-PEM. For each dispatch, vendor shall inform the following to the Underwriter under intimation to BHEL-PEM and BHEL Site office: - Policy No. - Consignee Name. - Consignment Details (items with their weights and value (in INR). - Project Name and P.O. No. - LR No. and date, Dispatch origin and destination details, Invoice No. - Vendors to intimate the underwriters quoting the insurance Policy details.
13.	Dispatch intimation	Yes, in writing, not less than 15 (Fifteen) days prior to date of shipment and dispatch details to be sent to: - BHEL Site office (address as mentioned at Sl. No. 7) - BHEL PEM Noida (address as mentioned in NIT for PO issued by PEM) - BHEL PSNR (For PO Issued by BHEL PSNR)
14.	Demurrage charges	Demurrage charges shall be paid by supplier/vendor only. No claim shall be acceptable to BHEL in this regard.
15.	Unloading, Storage & Movement of material at site	- By BHEL site office for supply packages (where only supply is in vendor's scope). - By vendors for Turnkey (where Supply and E&C is in vendor scope) Note: The Supplier shall furnish LR wise Gross Wt. of the consignment for the



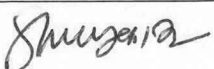
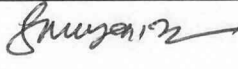
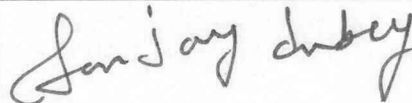
		purpose of handling the consignment by BHEL Site Contractor. No claim on a/c of delay in unloading before this period shall be entertained. Prior intimation as mentioned in sl. no. 15 above is solicited.
16.	Taxes & Duties (For Domestic Vendor)	As per Notice Inviting Tender (NIT/ATC).
17.	Taxes & Duties (For Order Directly to Foreign Bidders)	In case of foreign vendors, quoted prices & Dispatches shall be on C & F Port-Mumbai Basis and Taxes & Duties in the country of dispatch shall be borne by Foreign vendor.
18.	Inspection Agency	Inspection of packages shall be carried out by agency as per below Inspection category of packages: Cat-I & Cat-II : Inspection shall be done jointly or separately by DVC and BHEL or BHEL's TPIA. Cat-III: Inspection shall be done by BHEL only. Note: Please note, for Cat I & II items BHEL reserve the right to carry inspection by themselves or through nominated third party inspection agency (TPIA). Third party inspection agency, if any, shall be informed after award of contract.
19.	Inspection procedure	<u>For Domestic supplies:</u> As per Notice Inviting Tender (NIT). <u>For Foreign supplies</u> In case of Foreign supplies, if DVC approved 3rd party inspection agency does not participate in the inspection, test certificates & inspection reports duly accepted by the agreed Inspection agency shall be submitted in soft copy to BHEL-PEM. The same shall be reviewed by BHEL PEM and then, sent to DVC for clearance. The dispatch clearance (MDCC) by DVC/ BHEL as applicable shall be given to the foreign supplier or representative in India after acceptance of above test certificates and photographs as per above.
20.	Material Dispatch Clearance Certificate (MDCC) Issuing Agency	MDCC shall be issued by BHEL only after receipt from DVC. It is the responsibility of vendor to furnish all requisite documents like Material Test Certificates, Inspection Reports etc. required for obtaining of DVC MDCC by BHEL
21.	Mandatory Spares	Delivery of mandatory spares shall be as per NIT.
22.	Construction Facilities to Vendor	Construction Power: Construction Power is available on chargeable basis which can be provided at single point source. Further distribution is to be done by concerned vendor. Construction water: Available on chargeable basis at one point. Further distribution is to be done by concerned vendor.
23.	Storage Infrastructure by Vendor	For Turnkey packages: Open Space/leveled area for storage of material and open space for office construction will be provided free of charge within 5 km of plant premises at location as per availability.



23.A		(a) Vendor shall compulsory make covered storage shed of minimum size of 15 feet x 35 feet for storage of valuable Electrical/ Electronic items/ Instruments etc. (b) Vendor shall compulsory make office of size 10 feet x 15 feet for site Engineer/ Staff along with facility of Computer/ Laptop/ Printer for protocol preparation and submission to BHEL. (c) Alternately, vendor can provide container of suitable size for above purpose, i.e. (a) and (b).
23.B	Storage space by BHEL for Mandatory spare	For BOP Turnkey package – close storage shed shall be provided for storage of Mandatory Spare till handover to customer.
24.	Safety Officer and Quality Engineer by Vendor	For Turnkey packages, vendor shall deploy one number Safety Officer and one number Quality Engineer during total E&C period. In case of failure of above, BHEL shall deploy it and appropriate charges shall be deducted from vendor due payments. The charges for Non-deployment of Safety officer and Quality Engineer is Rs. 50,000.00 per man-month for each staff. This charge amount is exclusive of GST 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 DVC Koderma Project site proportionately based on contract value.
25.	Packing Identification & Marking [If not specified in NIT]	Each box shall be marked with Capital Letters in "Red" indicating the PEM SUPPLY (Main Supply/Commissioning Spares/Mandatory Spares) for 2x800 MW Koderma TPS Phase II . NOTE: Main supply item and items for commissioning spares must be packed separately. Each package delivered under the Contract shall be marked by supplier and such marking must be distinct and in English language (all previous irrelevant markings being carefully obliterated). Such marking shall show the description and quantity of contents, the name and address of consignee, the Gross weight and Net weight of the package, the name of the Supplier, PEM P.O. reference number, with a distinctive number of mark sufficient for purposes of identification. Besides above necessary, packing shall bear a special marking 'TOP', 'BOTTOM', 'DO NOT TURN OVER', "KEEP DRY", "HANDLE WITH CARE", etc. IMPORTANT: - • Two copies of respective standard manufacturer's erection instruction/operation instruction manual shall be kept in each package / container for immediate reference by BHEL site and same shall be reflected in packing slip also. • The Packing list details for the consignment must be put inside the Box/Boxes. Items like pumps, Valves, Hoists, Cranes etc. shall essentially have O&M Manuals and E&C guidelines duly enclosed in the packing box. Certificate to such effect shall also be reflected in packing slip. Mandatory spares shall be properly packed separately in separate box painted in Red, indicating Mandatory Spares in bold letters and each spare shall be properly tagged giving details i.e. item number of the equipment in line with the CUSTOMER approved BBU for Mandatory spares & Number per item (to match

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		the description given in the packing slip) to facilitate their- proper identification by end customer/ BHEL Site. One Copy of Packing list must be put inside the Box along with Manufacturing drawing no. reference, Catalogue reference etc.
26.	Submission of Final Drgs/ Docs along with O&M Manual, Type Test Certificates (if any)	<u>No. of O&M Manuals</u> As per applicable GCC / Tender documents/Kick-off meeting. If not specified anywhere, Vendor to submit final approved O&M Manual in 12 Hard copies and 4 No of CD ROMs/DVDs/Pen drive.

	Prepared by	Checked by	Reviewed /Approved by
Name	SHRI PRAKASH YADAV	SHRI PRAKASH YADAV	S.K DUBEY
Designation	Sr. Manager/ PG-II-2	Sr. Manager/ PG-II-2	Sr DGM & DH/ PG-II-2
Signature			

Enclosures

Annexure 1 – Format of packing list/shipping list for QR code generation as per SCC Clause no. 11.

ANNEXURE-1

SNO	Customer	Contract No	Type	PGMA	PGMA Des	DU	DU Des	Dispatch Qty.	Unit	BBU No.	BBU Sno	Box No.	Packing List No.	Material Required For (Set1/ Set-2)	NS	Remarks
	DVC	LOI/FC/1015 dtd:- 26.07.2024	<BOI * > <*BHEL shall indicate whether item is BOI or BHEL Inhouse manufacture >	<Vendor to fill BHEL Item Code>	<Vendor to fill Package Code>	BHEL PSPPEM NOIDA	<Vendor to fill up Item wise description>	<Vendor to fill up dispatch quantity>	<Vendor to fill up UOM>	to fill up BBU No. provided by BHEL>	<Vendor to fill up BBU No. provided by BHEL>	<Vendor to fill up box no.>	<Vendor to fill up Packing list number>	Vendor to indicate Material is for Unit-1 or Unit-2	<Nature of Supply :Vendor to indicate whether Item is Main supply or mandatory spares>	Remarks if any

2X800MW DVC KODERMA TPS PHASE II

**FOR
DOUBLE GIRDER EOT CRANES
FOR UPTO 100T CAPACITY**

SPECIFICATION No. PE-TS-519-501-A001

REV NO. 0



**BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR
PROJECT ENGINEERING MANAGEMENT
NOIDA, INDIA**



TECHNICAL SPECIFICATION
2X800MW DVC KODERMA TPS PHASE II
DOUBLE GIRDER EOT CRANES
FOR UPTO 100T CAPACITY

PE-TS-519-501-A001

Rev. No. 00

Date : Sept 2025

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PROJECT INFORMATION

SL.NO	DESCRIPTION	2X800MW DVC KODERMA TPS PHASE II
1	CUSTOMER	Damodar Valley Corporation (DVC)
2	CUSTOMER CONSULTANT	Development Consultants Pvt. Ltd.
3	LOCATION	The project is located near Benjhidi Village of Koderma District in Jharkhand.
4	DATA	
4.1	THE BASIC WIND SPEED “Vb” AT TEN METERS ABOVE THE MEAN GROUND LEVEL.	39 METERS PER SECOND
4.2	THE RISK COEFFICIENT “K1”	1.06
4.3	CATEGORY OF TERRAIN	CATEGORY 2
4.4	OTHER FACTORS	IN LINE WITH IS 875
4.5	SEISMIC ZONE	ZONE-III AS PER IS:1893
4.6	DESIGN AMBIENT TEMPERATURE	50 DEG. CELCIUS
5	ELECTRICAL DATA	
5.1	RATED VOLTAGE	415 V
5.2	FREQUENCY	50 Hz
5.3	PERMISSIBLE VARIATIONS FOR	
a.	VOLTAGE	+/-10 %
b.	FREQUENCY	(-)5 to (+)3 %
c.	COMBINED VOLTAGE & FREQUENCY	10 %
5.4	SYSTEM FAULT LEVEL AT RATED VOLTAGE FOR 1 SEC	50 kA
5.5	SHORT TIME RATING FOR TERMINAL BOXES FOR 0.25 SEC	50 kA

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SCOPE

SCOPE OF THIS PACKAGE COVERS THE FOLLOWING:

SL.NO	PARAMETERS	REQUIREMENT
1	Supply Including Design, Engineering, Manufacturing Of	
a)	Main Supply	YES
b)	Commissioning Spares	YES
2	Painting	YES
3	Inspection & Testing	YES
4	Packing	YES
5	Transportation & Delivery To Site	YES
6	Erection & Commissioning	YES
7	Supervision of Erection & Commissioning	NO
8	Performance Guarantee (PG) Test	YES
9	Mandatory Spares	YES
10	O & M Service	NO
11	O & M Spares	NO
12	Storage	YES

	EXCLUSIONS	
1	Supply feeder and cable from feeder to isolating switch.	
2	Steel Gantry girder	
3	Dead load for load/ overload testing at site	
	Note	
1	Load testing sling, cradles and any other item required by the vendor during the load testing shall be arranged by the vendor at no extra cost to the purchaser. Slings & cradles will be allowed to be taken back by the vendor, after completion of the test at site.	

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	GENERAL TECHNICAL REQUIREMENT	
1.0	It is not the intent to specify herein all the details of design and manufacturing. Bidder shall ensure that the offered equipment confirms in all respects to high standards of design, engineering and workmanship.	
2.0	The equipment shall comply with all applicable safety codes and statutory regulations of India as well as of the locality where the equipment is to be installed.	
3.0	In the event of any conflict between the codes and standards referred to in the above clauses and the requirement of this specification, the requirement of Technical Specification shall govern.	
4.0	The equipment shall conform in all respects to high standards of design, engineering and workmanship and shall be capable of performing the required duties in a manner acceptable to purchaser who will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material which in his judgement is not in full accordance herewith.	
5.0	Drawing/document submission shall be through web based Document Management System. Bidder would be provided access to the DMS for drg/doc approval and training for the same. Bidder to ensure proper internet connectivity at their end.	
6.0	The first revision drawings/ documents submitted by vendor shall be complete in all respects. Any incomplete drawing submitted shall be treated as non- submission with delays attributable to vendor's account. For any clarification/ discussion required to complete the drawings, the bidder shall himself depute his personal to BHEL / Customer's place as per the requirement for across the table discussions/ finalizations/ submissions of drawings.	
7.0	In case of any change in codes, standards & regulations between the date of bid opening (15.06.2024) and the date when vendors proceed with fabrication, the Employer shall have the option to incorporate the changed requirements or to retain the original standard. It shall be the responsibility of the Contractor to bring to the notice of the Employer such changes and advise Employer of the resulting effect.	
8.0	Other International/ National standards such as DIN, VDI, BS, GOST etc. shall also be accepted for only material codes and manufacturing standards, subject to the Employer's approval, for which the Bidder shall furnish, adequate information to justify that these standards are equivalent or superior to the standards mentioned above. In all such cases the Bidder shall furnish specifically the variations and deviations from the standards mentioned elsewhere in the specification together with the complete word to word translation of the standard that is normally not published in English.	

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9.0	In the event of any conflict between the codes and standards referred to in the above clauses and the requirement of this specification, the requirement of Technical Specification shall govern.	
10.0	Bidder shall carry out the type tests as listed in the Quality Plan. OR Bidder shall furnish Type Test Certificate of specified Type Test as per quality plan for applicable equipment which has been carried out within last ten years from 15.06.2024. These reports should be for the tests conducted on the equipment same (model / type / size / rating) to those proposed to be supplied under this contract and the test(s) should have been either conducted at an independent laboratory or should have been witnessed by a client. In absence of valid Type Test report vendor to conduct the same without any commercial & delivery implication to BHEL.	
11.0	Manufacturing Quality Plan is included for reference in this specification to enable the bidder to understand the extent of inspection and testing requirements to execute this job. The successful bidder has to follow the quality plan's minimum requirement during manufacturing and testing. Further all checks and tests indicated in Quality Assurance Requirement as detailed in Customer's specification etc have to be followed.	
12.0	Sub vendor list is attached. Any additional sub - vendors proposed by bidder during contract stage shall be subject to BHEL/ Customer/Customer's Consultant	
13.0	Document approval by BHEL / Customer shall not absolve the supplier of their contractual obligations of completing the work as per specification requirement without any commercial and delivery impact.	
14.0	Mandatory Spares	
14.1	One (1) Set is defined as 100% requirement for one crane for the entire cranes of similar size & capacity.	
14.2	All essential spares shall be supplied as per the requirement of the specifications. In case any spare indicated in the specification is not applicable for particular equipment then suitable applicable alternate spare have been offered / shall be supplied without any financial implication.	
14.3	In case spares indicated in the list are not applicable to the particular design offered by the bidder, the bidder should offer spares applicable to offered design with quantities generally in line with the approach followed in the above list.	

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14.4	Any item which is quoted as “not applicable” in the above list and is found to be “applicable” at a later date shall be supplied by the Bidder without any commercial implications. The Bidder shall note that if there is any change/ variation in equipment/ system during detail engineering which causes any change/ variation in the essential spares quantity, the same shall be supplied without any commercial implications. The price indicated for the mandatory spares shall be considered for the purpose of evaluation.	
14.5	Interchangeability and Packings: All spares supplied under this contract shall be strictly interchangeable with the parts for which they are intended for replacements. The spares shall be treated and packed for long storage under the climatic conditions prevailing at the site e.g. small items shall be packed in sealed transparent plastic with desecrator packs as necessary.	
14.6	Identification: Each spare shall be clearly marked and labeled on the outside of the packing with its description. When more than one spare part is packed in single case, a general description of the contents shall be shown on the outside of such case and a detailed list enclosed. All cases, containers and other packages must be suitably marked and numbered for the purpose of identification.	
14.7	Bidder shall not indicate “Not Applicable” against any of the spare (except for those items for which “if applicable” is specified). In case of not applicability, functionally equivalent spare shall be offered.	
15.0	SHOP TEST PROCEDURE FOR GEAR BOX	
15.1	Gear Box Running Test: The gear boxes shall be run under no-load condition at the rated speed for minimum four hours in each direction and the following are to be checked:	
a	All bolts at the joints remain tight.	
b	All gear mesh lines are getting enough lubrication.	
c	All bearings are getting enough lubrication.	
d	Bearing temperatures after running for four hours shall not exceed 50 deg. Centigrade or 15 deg. centigrade above ambient whichever is higher. Temperature shall be checked after every hour.	
e	Vibration : Maximum limit 125 microns (peak to peak)	
f	Sound: The gearbox shall not emit unusual sound as obtained under conditions of hard meshing, high spots etc. Maximum sound level shall be 85 dBA at a distance of 1000mm and 91 dBA at a distance of 300 mm.	
g	There shall be no Oil leakage at parting lines, bearing housings or inspection covers.	
15.2	In addition to the above specific points, the following general points shall be ensured:	
a	Inspection pockets are provided as required.	
b	Gear box casings are provided with at least two fit bolts/dowels at the parting line.	

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c	Dip sticks with minimum / maximum level markings are provided.	
d	Drain plugs are provided at convenient locations preferably at vertical wall of the housing.	
e	Breathers are provided.	
f	Lifting lugs or eye bolts are provided as required.	
g	Wherever bearings have splash lubrication, oil retainers are provided.	
h	Gear boxes are painted as per specification outside and inside. Inside surfaces shall be painted with Oil proof paint.	
i	In case of vertical gear boxes having more than two stage reduction, forced lubrication is also provided.	
j	Name plate should provide information eg. Ratio, KW rating, Bearing details and manufacturers name.	
16.0	STAGE INSPECTION OF EOT CRANES AT WORKS: Stage inspection of various components of crane shall be guided by the MQP attached with this specification. However, following shall be ensured and read in conjunction with relevant clause of MQP wrt stage inspection:	
a	For tensile testing of hooks/ forgings, samples shall be drawn from the full cross section of the shank diameter of hooks/ forgings. Samples forged to reduced cross section for testing purposes is not acceptable. Hooks shall be manufactured from Blooms, billets, rounds by forging with forging ratio of at least 3:1. Hooks manufactured from plates are not acceptable.	
b	Radiographs shall be inspected to a sensitivity of 2%.	
c	Gear boxes shall be checked at No load for backlash, tooth contact, noise, temperature rise and vibration.	
d	Acceptance and routine tests (HV and insulation) for all electrical and electro-mechanical components and system as per governing specification.	
17.0	Testing at site: Completely assembled crane at site shall be checked for misalignment of gears, shafts and other items. The test shall be carried out with actual panel, RRC, Master Controller etc. Following minimum tests shall be conducted on the crane at the site	
a	Deflection test of bridge girder at rated load. Crane shall rest on centerline of LT wheels.	
b	Load test and Overload test	
c	Capability of crane to lift the overload from mid-air shall be demonstrated. Electrical tests for brakes, panel, electrical equipment etc. as per IS - 3177	
d	All Other tests as per IS-3177.	
e	Speed test at rated load for hoisting, CT and LT mechanism.	
f	Brake test.	
18	Services to be provided by the bidder	
a	Packing, forwarding and transportation to site.	

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b	Development of storage space including ward & watch of the equipment and handling	
c	Unloading, storage and handling at site. The Bidder shall provide means for all unloading and reloading for all consignments of plant; both during transport to Site and on the Site. Consignments shall be unloaded immediately on arrival at Site. The Bidder is required to take the necessary steps in order to provide the carriage, special supporting structures for heavy loads, etc. The following parts shall be stored inside enclosed warehouses:	
d	Bolts, pins, packing, tools, insulation materials, electrical parts with electrical devices attached, electric motors and excitation equipment, instruments, welding material and equipment, all small parts and all parts of the crane which already have been finally painted. If large parts are stored in the open air, they shall be provided with weather resistant and fire & resistant covers. Electrical parts, which are not packed in heavy duty polyethylene foil and those so packed, but whose packing has been damaged shall be kept in suitable places from the moment of storage to the moment of installation. All insulation materials which will be taken from the warehouse for installation and which are stored temporarily in the station shall be protected from weather or humidity. All the equipment shall be stored as per standard storage and preservation instructions etc. of the suppliers.	
e	Arranging test load at site: Collecting the test load at site within a radius of 1-2 KM from owner's storage to final testing bed of crane shall be under bidder's scope of work. Test load in the form of rolled steel, plates, girder, angle etc., as available at the site shall be made available by the purchaser. The test load shall be put back to the place from where it was lifted by the vendor, after the load testing. Load testing sling, cradles and any other item required by the vendor during the load testing shall be arranged by the vendor at no extra cost to the purchaser. Slings & cradles will be allowed to be taken back by the vendor, after completion of the test at site.	
f	Erection and Commissioning	
g	Demonstration / Load test at bidder's Works and at site.	
h	Obtaining clearance and acceptance certificate from the concerned competent Authority after site test and as and when required as per Government Norms /Statutory body till the time of final handing over to Customer. Necessary fees/expenditure as required shall be borne by the supplier.	
i	Any service mentioned in GCC & SCC as relevant to the package.	

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TECHNICAL DATA SHEET A					
Sr. No.		DESCRIPTION	TECHNICAL PARTICULARS		
1.0.0		General			
1.1.0		Basic Details			
	a.	Crane type	EOT	EOT	EOT
	b.	Location	BC Bay BFP Handling	CW Pump House	Heavy Material Store
	c.	Numbers of cranes	2 nos.	1 no.	1 no.
	d.	Outdoor or indoor duty	Indoor	Indoor	Indoor
	e.	Rated SWL – tonnes	75T	50T	30T
	f.	Monorail Electric Hoists (Attached under crane Girder (One per crane): SWL	NA	2T	NA
	g.	Test load SWL – tonnes	125% of SWL (Safe Working Load)		
	h.	Lift	13.3m	21.7 m	8.1 m
	i.	Span	10.1m	11.4m	13.6m
	j.	Mode of operation	Pendant Push Button + Radio Remote Control		
1.2.0	a.	Design, fabrication and testing of the crane confirm to standard / code number	Mechanical and Electrical as per IS: 3177-2020 & Structure design in accordance to IS 807:2006 or approved equivalent International Standard (latest edition).		
	b.	Minimum thickness of Structural members	a) Load carrying members: 8 mm b) Tubes with both ends sealed: 4.9 mm (6 SWG) c) Tubes with unsealed ends: 8mm d) Chequered plates: 6 mm O/P		
	c.	MAXIMUM SPAN/DEPTH RATIO FOR GIRDER:	Plate girders : 18		
1.3.0		Crane classification	M5 (Mechanical, Structural and Electrical) as per IS: 3177-2020, IS: 807-2006 and 13834 (part-5)-1993		
2.0		CRANE PERFORMANCE			
2.1.0		Crane speed with full load	Full speed m/min		Creep speed m/min
	a.	Main hoist	1.6		0.16 (10% of main speed thru'
	b.	Aux. hoist	Not applicable		Not applicable
	c.	Trolley travel (CT)	4		0.4 (10% of main speed thru' VVVF drives)
	d.	Longitudinal bridge travel (LT)	8		0.8 (10% of main speed thru' VVVF drives)
2.2.0		Acceleration values for LT motion (bridge travel) and CT motion (trolley travel)	As per IS: 3177 (2020)		
2.3.0		Hook Approaches from centreline of rails			
	a.	Main hook (non DSL side)	As per Crane clearance diagram (Refer Compliance Drawings)		
	b.	Aux. Hook (non DSL side)	Not applicable		
	c.	Main hook (DSL side)	As per Crane clearance diagram (Refer Compliance Drawings)		
	d.	Aux. Hook (DSL side)	As per Crane clearance diagram (Refer Compliance Drawings)		
2.4.0		Hand Rail Pipes	32 mm NB Medium class of IS: 1161 having top and bottom rail at height of 1050 mm and 600 mm and vertical post spacing not exceeding 1500 mm with provision of kick plate (100 mm high and 6mm thick)		
3.0.0		COMPONENT DETAILS			
3.1.0		Bridge girder			

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	a.	Type & Quantity	Box type – 2 nos. Material: Mild steel, grade 'B' of IS 2062 in 100% killed, normalised and ultrasonically tested quality or high strength steel of IS 8500 as appropriate.	
	b.	Stress consideration	Following to be consider as per IS 807: Static load (dead load), loads due to working load multiplied by dynamic coefficient, two most unfavourable horizontal effects excluding buffer forces.All these loads must then be multiplied by amplifying coefficient.	
	c.	Maximum Limit for Vertical Deflection	The vertical deflection of crane girder shall not exceed 1/800 of the span. The girder shall be of box type and construction shall ensure non-accumulation of water/oil inside the box.	
	d.	Type of connection to end carriage	By fitted bolts.	
3.2.0		Type of platform required on the bridge	Chequered plate platform 6mm thick over plain as per IS : 3502	
	a.	Length	Full span length	
	b.	Walkways	Access walkways of not less than 800 mm (clear) with hand railing of height of 1100 mm along the both side of bridge girder and cross over walkways.	
	c.	Type of access from gantry girder level to crane bridge	Rung ladder at ends from gantry girder level walkway to crane bridges walkway	
	d.	Type of access to maintenance cage from crane bridges walkway	Rung ladder	
	e.	Type of access to Cabin from crane bridges walkway	NOT APPLICABLE	
	f.	Provided at both ends	Yes	
3.3.0		End carriage span (wheel base)	As per IS 807 (latest edition)	
3.4.0		Trolley	The trolley frame shall be built up from heavy steel plates, angles and channels adequately braced to resist vertical, lateral and torsional strains, welded to form a rigid one piece frame.	
			On bottom of trolley frame, on each side a double spring bumper shall be provided to engage stops at each end of the bridge.	
			800 mm (clear) with hand railing of height of 1100 mm along the cross over walkways on trolley.	
	a.	Type	Fabricated	
	b.	Method of fabrication	Fusion welded	
	c.	Material	Mild steel, grade 'B' of IS 2062 in 100% killed, normalised and ultrasonically tested quality.	
	d.	Other requirements	Upper pulley block shall be approachable for maintenance.	
	e.	Whether jacking pads for lifting trolley provided or not	Yes	
3.5.0		Rope drums	Main hoist	Aux hoist (if applicable)
	a.	Material (Indicate IS)	Seamless pipe ASTM A -106 Gr. B or fabricated rolled section to IS: 2062 Gr. 'B' & stress relieved, 100% killed, normalised and ultrasonically tested quality.	
	b.	Flange / flangeless	Flanged	
	c.	Numbers provided	One for each hoist	
	d.	Type of grooves	Identical Right hand and Left hand & other details shall be as per IS 3177:2020	
3.6.0		Rope details	Main hoist	Aux hoist (if applicable)
	a.	Construction	Extra flexible plough steel , 6 x 36 or 6x37 construction	
	b.	Standard conforming to	IS: 2266 (latest edition)	
	c.	Factor of safety	As per IS-3177 : 2020	
	d.	Type of core	Steel	Steel
3.7.0		Sheaves details	Main hoist	Aux hoist (if applicable)
	a.	Material	The sheaves shall be of heavy duty with deep flanges made of cast steel and shall be properly grooved to fit the rope and adequately guarded.	
3.8.0		COUPLINGS & SHAFTING		
3.8.1		Coupling details (between motor and gear box)	for Main hoist, Aux hoist (if applicable), Cross Travel and Long Travel	
	a.	Type	Flexible shock absorbing coupling	
	b.	Guards and enclosures	Provided	

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	c.	Coupling material and hardness	All couplings shall be of cast, wrought or from forged steel, tooth portion to be heat treated to hardness HB241-280		
3.8.2		Coupling details (between gear box and wheels)	Cross Travel (CT)		Long Travel (LT)
	a.	Type	Flexible geared type		
	b.	Guards and enclosures provided	Yes		
3.8.3		Coupling details (between gear box and rope drum)	Main hoist		Aux hoist (if applicable)
	a.	Type	One of the following arrangements will be adopted for connecting the rope drum with the gear- box. 1.Flexible joint, incorporating flexible geared coupling housed within the drum. 2.Fully flexible geared coupling between the drum & gearbox.		
	b.	Guards and enclosures provided	Yes		
3.8.4		Shafting (Output)	Cross Travel		Long Travel
	a.	Factor of Safety	As per IS: 3177-2020		
	b.	Arrangement of lubrication	Grease cups / Nipple		
	c.	Type of lubricant	Grease		
3.9.0		Gear box details			
3.9.1		Hoist Motions	Main hoist and Main hoist Micro		Aux hoist and Aux hoist
	a.	Type of mounting of gear box	Horizontal / Vertical		
	b.	Classification	Suitable for M5 duty		
	c.	Type of gears	For Main hoist and Aux hoist: Helical / Spur For Main hoist Micro and Aux hoist Micro: Through VVVF Drives		
	d.	Type of lubrication (grease / splash / pump lubrication)	Splash Lubrication		
	e.	Hardness (BHN) – gear	220 BHN (minimum)		
	f.	Hardness (BHN) – pinion	270 BHN (minimum)		
	g.	Difference in Gear and pinion hardness	Min 20 BHN		
	h.	Materials (gear/pinions)	Main Gears En 9/ 55C8/ IS2707. Pinions En 19/EN 24. Hardness conforming to IS: 3177-2020 Gears to be hardened, tempered & heat treated as per IS 4460		
	i.	Casings	Material of the gear box housing shall be cast or fabricated. The fabricated gear boxes shall be stress relieved before machining.		
	j.	Noise level	85 db		
	k.	Standard conforming to	IS: 4460 / AGMA		
3.9.2		Travel Motions	Cross Travel and Cross Travel Micro		Long travel and Long travel Micro
	a.	Type of mounting gear box	Vertical/ Horizontal		
	b.	Classification	M5 duty		
	c.	Type of gears	For Cross Travel and Long Travel: Helical / Spur For Cross Travel Micro and Long Travel Micro: Through VVVF drive		
	d.	Type of lubrication (grease / splash / pump lubrication)	Splash Lubrication		
	e.	Hardness (BHN) – gear	220 BHN (minimum)		
	f.	Hardness (BHN) – pinion	270 BHN (minimum)		
	g.	Difference in Gear and pinion hardness	Min 20 BHN		
	h.	Materials (gear / pinions)	Main Gears En 9/ 55C8/ IS 2707 Gr. 1or 2. Pinions En 19/EN 24. Hardness conforming to IS: 3177-2020 Gears to be hardened, tempered & heat treated as per IS 4460		
	i.	Casings	Material of the gear box housing shall be cast or fabricated. The fabricated gear boxes shall be stress relieved before machining.		
	j.	Noise level	85 db		
	k.	Standard conforming to	IS: 4460 / AGMA		
3.10.0		Wheels details	Cross Travel		Long Travel
	a.	Material	Grade C55Mn75 of IS 1570 (Part 1 and Part 2/Sec 2) or 42CrMo4 or equivalent as per IS 3177-2020.		
	b.	Hardness	300 – 350 BHN		
	c.	Depth of hardness	10 mm (min)		

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	d.	Process of hardening	Volume hardening		
	e.	Type	Double flanged		
	f.	Min.Numbers provided	4 nos.		8 nos.
	g.	Specification conforming to	IS: 3177-2020		
	h.	Arrangement of lubrication	Grease		
3.11.0		Lifting hooks	Main hoist		Aux hoist (if applicable)
	a.	Type	For 50T and above: Ramshorn type conforming to IS:5749 For less than 50T: shank type conforming to IS:15560		
	b.	Safe lifting capacity	As per SWL capacity of Crane		
	c.	Material	Class 2 as per IS 1875:1992 (re affirmed 2004) for hooks conforming to IS : 5749 Class 3 for hook of grades L & M respectively as per IS 1875:1992 for hooks conforming to IS : 15560		
	d.	Standard conforming to	IS-5749/ IS: 15560		
	e.	Hook can rotate	Yes		
	f.	Safety latch on hook provided	Yes		
	g.	Locking device on swivelling hook required or not	Provided		
3.12.0		Buffers	Cross Travel		Long Travel
	a.	Type	Spring loaded type. To be designed to bring the loaded crane (In calculation crane is considered to be loaded with SWL) to rest from speed of 50% of the rated speed.		
	b.	Numbers provided	4		4
	c.	Details of end stop	Mild steel, grade 'B' of IS 2062 (E250) in 100% killed, normalised and ultrasonically tested quality.		
3.13.0		Brakes			
3.13.1		Hoist Motions	Main hoist		Aux hoist (if applicable)
	a.	Type of brake	AC Electro-Hydraulic Thruster operated + DCEM		
	b.	Number provided per motor	1+1		1+1
	c.	Braking capacity of each (% of torque transmitted to the brake drum with full load.)	150%		150%
	d.	Material			
		· Brake liners	Ferrodo liners		
		· Drum	CS IS : 1030 / CL 4 IS : 1875		
		· Springs	As per manufacturers standard		
3.13.2		Travel Motions	Cross Travel		Long Travel
	a.	Type of brake (ac / dc / thruster)	AC Electro-Hydraulic Thruster operated + DCEM		
	b.	Number provided per motor	1+1		1+1
	c.	Braking capacity of each (% of motor rated torque before derating)	125%		125%
	d.	Material			
		· Brake liners	Ferrodo liners		
		· Drum	CS IS : 1030 / CL 4 IS : 1875		
		· Springs	As per manufacturers standard		
3.14.0		Motors			
	a.	Type	Three phase Squirrel Cage Induction motors to be operated from VFD system shall be suitable for speed range and torque without exceeding temperature rise limits as specified elsewhere in this specification. VFD shall be used to drive three (3) phase squirrel cage inverter duty Induction motor with VPI insulation (Resin poor) suitable for VFD application. These motors shall be provided with insulated bearing on at least one side for motor frame size above 250 frame. However, contractor's proven practice with respect to use of insulated bearing in VFD driven motor may be accepted subject to Employer's approval. Motors shall conform to latest revision IS 3177 and motor subsection of this specification.		

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	b.	Design Codes & Standards	1.Three phase induction motors : IS15999, IEC:60034, IS: 12615, IS: 325 2.Single phase AC motors : IS:996, IEC:60034 3.Energy Efficient motors : IS 12615, IEC:60034-30 4.Crane duty motors : IS:3177, IS/IEC:60034 5.Designation of Methods of Cooling of Rotating Electrical Machines: IS 6362 6.Designation for types of construction and mounting arrangement of rotating electrical machines: IS 2253	
	c	Enclosure	TEFC	
	d	Numbers furnished	For Main hoist: 1 no.	
			For Aux hoist: Not applicable	
			For Cross travel: As per bidder's design.	
			For Long travel: 2 nos minimum.	
	e.	Voltage, phase and frequency	415V $\pm$ 10%, 3 Ph., 4 wire, 50 Hz, +3/-5 % Combined voltage & frequency variation = 10% absolute	
	f	Class of protection for motor including terminal box	IP – 55	
	g	Rated capacity (KW)	Maximum continuous motor ratings shall be at least 10% above the maximum load demand of the driven equipment under entire operating range including voltage and frequency variations.	
	h.	Duration factor/duty	40 % CDF / S-4	
	i.	Bearings (Motors)	Grease lubricated ball or roller bearings for Horizontal motors Grease lubricated ball or roller bearings or combined trust and guide beaing for Vertical motors. These motors shall be provided with insulated bearing on at least one side for motor frame size above 250 frame. However, supplier's proven practice with respect to use of insulated bearing in VFD driven motor may be accepted subject to End customer's approval.	
	j	Class of insulation	Temp rise 70 deg. C by resistance method for both thermal class 130(B) & 155(F) insulation	
	k	Number of starts/ hour	Starts / hr as per IS 3177-2020	
	l	Overload protection for motors provided	Yes	
	m	Space heater requirements	For motors of rating 30 KW and above. Separate terminal box for space heaters & RTDs shall be provided.	
	n	Motor pull out torque	275% of full load torque	
	o	Terminal box of motor	-Motor terminal box shall be detachable type and located in accordance with Indian Standards clearing the motor base- plate/ foundation. DOP of terminal box shall be same as motor.	
			-Terminals shall be stud or lead wire type, substantially constructed and thoroughly insulated.	
			The terminals shall be clearly identified by phase markings, with corresponding direction of rotation marked on the non-driving end of the motor.	
			- Rotation at 90 deg	
	p	Cable glands and lugs	-Motor terminal box shall be furnished with suitable cable lugs and double compression brass glands to match with cable used.	
			-Gland plates of thickness 3 mm (hot/cold rolled sheet steel) or 4 mm (non magnetic material for single core cables) shall be provided in case of cable boxes.	
	q	Earthing points suitable for conenction	Motor body shall be grounded at two earthing points on opposite sides with two separate and distinct grounding pads complete with tapped holes, GI bolts and washers. LT Motors above 125 KW --- 50 x 6mm GS flat 25 KW to 125 KW --- 25 x 6mm GS flat 1KW to 25 KW --- 25 x 3mm GS flat.	

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	r	Minimum spacing between gland plate & centre of bottom terminal stud	UP to 3 KW As per manufacturer's practice. Above 3 KW - upto 7 KW 85 mm Above 7 KW - upto 13 KW 115 mm Above 13 KW - upto 24 KW 167 mm Above 24 KW - upto 37 KW 196 mm Above 37 KW - upto 55 KW 249 mm Above 55 KW - upto 90 KW 277 mm Above 90 KW - upto 125 KW 331 mm Above 125 KW-upto 200 KW 385/203 (For Single core cables only) mm	
	s	Minimum inter-phase and phase-earth air clearances with lugs installed	UP to 110 KW 10mm Above 110 KW and upto 150 KW 12.5mm Above 150 KW 19mm	
	t	Inspection Testing (for motor)		
	t.1	List of Test for which reports have to be submitted. 1.Measurement of resistance of windings of stator and wound rotor. 2.No load test at rated voltage to determine input current power and speed 3.Open circuit voltage ratio of wound rotor motors (in case of Slip ring motors). 4.Full load test to determine efficiency power factor and slip. 5.Temperature rise test. 6.Momentary excess torque test. 7.High voltage test. 8.Test for vibration severity of motor. 9.Test for noise levels of motor(Shall be limited as per clause no 7.06.00 of this section). 10.Test for degree of protection and 11.Overspeed test.		
	t.2	The type test listed above should have been conducted within 10 yrs prior to supply under this contract. In absence of type tests reports or in case reports are not found to be meeting the specification/standards requirements, vendor shall conduct all such type tests without any commercial/delivery implication to BHEL according to the relevant standards and reports shall be submitted to the owner for approval.		
	t.3	The type test reports once approved for any projects shall be treated as reference. For subsequent projects of DVC, an endorsement sheet will be furnished by the manufacturer confirming similarity and “No design Change”. Minor changes if any shall be highlighted on the endorsement sheet.		
	t.4	All acceptance and routine tests as per the specification and relevant standards shall be carried out.Charges for these shall be deemed to be included in the equipment price.		
	q	Other requirement		
	q.1	Squirrel cage Induction motor with VPI insulation shall be provided With VVVF system. Motor shall be energy efficient as per IS:12615, IEC 60034 and shall be Crane duty as per IS:3177. Winding & insulation shall be Electrolytic grade Copper conductor, Non-hygroscopic, oil resistant, flame resistant Insulation. Vibration shall be limited within the limits IS:12075.		
	q.2	For motors with starting time upto 20 secs. at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be at least 2.5 secs. more than starting time. Permissible starting voltage for motor shall be as follows:Up to 85% of rated voltage for ratings below 110 KW & upto 80% of rated voltage for ratings from 110 kW to 200 kW. Starting Duty : Two hot starts, with motor initially at normal running temperature Maximum Locked Rotor Current : as per IS 12615		
	q.3	The ratio of locked rotor KVA at rated voltage to rated KW shall not exceed 11 for motors above 50 KW upto 110 KW		
	q.4	Starting Time: a) For motors with starting time upto 20 secs. at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be at least 2.5 secs. more than starting time. b) For motors with starting time more than 20 secs. and upto 45 secs. at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be at least 5 secs. more than starting time. c) For motors with starting time more than 45 secs. at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be more than starting time by at least 10% of the starting time. d) Speed switches mounted on the motor shaft shall be provided in cases where above requirements are not met.		

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	q.5	PAINT SHADE FOR MOTOR (CORROSSION PROOF PAINTS OF COLOUR SHADE): - RAL 5012 (Blue). The thickness of finish coat shall be minimum 50 microns (minimum total DFT shall be 100 microns). However, in case electrostatic process of painting is offered. minimum paint thickness of 50 microns shall be acceptable for finish coat. Epoxy based paint with suitable additives shall be used.		
3.15.3		Storm brake	Not applicable	
3.16.0		Drive system for hoisting		
	a.	Arrangement of drive from motor to rope drum (main)	Through geared coupling and gear box	
	b.	Arrangement of drive from pony motor to rope drum (creep speed)	Creep speed through VVVF drive.	
3.17.0		Bearings (for crane hook, Trolley wheels, rope drum, gear box or any other assembly)		
	a.	Type	Antifriction ball / roller bearings	
	b.	Number provided for each	As per assembly requirements	
	c.	Method of lubrication	Centralised grease lubrication with hand operated grease pump for all bearings as per bidder's standard proven practice.	
	d.	Bearing life	not less than 10,000 working hours	
3.18.0		Rails		
	a.	Type / section	Rails sections as per IS: 3443. Joint to be butt-welded by thermit welding or fusion welding.	
3.19.0		Power conductors (DSL) & Cables		
	a.	Design Criteria	Cable from main isolating switch (1.5M above operating floor) to motor terminal shall be so sized that the voltage drop does not exceed 2% of rated voltage at motor terminals at extreme positions. DSL shall be sized with a margin of 10% overload requirement.	
	b.	Type	LT: PVC shrouded Cu/Al conductor bus bar. CT: EPR insulated, copper conductor trailing cables, as per IS: 9968, on the bridge/ energy chain trailing system	
	c.	LT POWER CABLES	All LT power cables of sizes more than 120 sq.mm. shall be XLPE insulated, and sizes shall be of 1Cx150, 1Cx300, 1Cx630, 3Cx150, 3Cx185, 3Cx240 & 3Cx300 Sq.mm. However for cable sizes upto 120 sq.mm. both XLPE insulated & PVC insulated LT power cables are acceptable.	
	c.1	1.1 KV grade XLPE power cables	1.1 KV grade XLPE power cables shall have multi stranded compacted aluminum conductor (tensile strength of more than 100 N/ sq.mm), XLPE insulated, PVC inner-sheathed (black color as per IS:5831), Armoured (For single core Armoured cables, armoring shall be of aluminum wires H4 grade. For multicore Armoured cables armoring shall be of galvanized steel round wire/strip), PVC FRLS outer-sheathed (black colour) conforming to IS: 7098. (Part-I).	
	c.2	1.1KV grade PVC power cables	1.1KV grade PVC power cables shall have multi stranded aluminum conductor (compacted type for sizes above 10 sq.mm), PVC Insulated, PVC inner sheathed ((black color as per IS:5831)) Armoured (For single core Armoured cables, armoring shall be of aluminum wires H4 grade. For multicore Armoured cables armoring shall be of galvanized steel round wire/strip), PVC FRLS outer-sheathed (black colour) conforming to IS:1554 (Part-I).	
	c.3	LT Control Cables	LT Control Cables are Cu conductor 1.5 sq mm, PVC insulated, PVC inner sheath, GS wire/strip armoured and FRLS PVC outer sheath confirming to IS 1554 Part-1. Standard control cable sizes shall preferably be 3CX1.5, 5CX1.5, 7CX1.5 & 10CX1.5mm ² , 14CX1.5 mm ² .	
	c.4	1.1 kV grade trailing cables	1.1 kV grade trailing cables shall have tinned copper (class 5) conductor, insulated with heat resistant elastomeric compound based on Ethylene Propylene Rubber (EPR) suitable for withstanding 90 deg.C continuous conductor temperature and 250deg C during short circuit, inner sheathed with heat resistant elastomeric compound, nylon cord reinforced, outer-sheathed with heat resistant, oil resistant and flame retardant heavy duty elastomeric compound conforming to IS 9968.	

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	d.	Size	Cables shall be sized based on the following considerations: a) Rated current of the equipment b) Short circuit withstand capability c) Derating factors for various conditions of installations (variation in ambient temperature, grouping of cables).	
	e.	Guard provided for DSL	Yes	
3.19.1		CABLE TRAYS	Cable trays shall be ladder/perforated type complete with matching fittings (like brackets, elbows, bends, reducers, tees, crosses, etc.) accessories (like side coupler plates, etc. and hardware (like bolts, nuts, washers, G.I. strap, hook etc.) as required. Cable tray shall be ladder type for power & control cables and perforated for instrumentation cables. Cable trays, fittings and accessories shall be fabricated out of rolled mild steel sheets free from flaws such as laminations, rolling marks, pitting etc. These (including hardware) shall be hot dip galvanized. Cable trays shall have standard width of 150 mm, 300 mm & 600 mm and standard lengths of 2.5 metre. Thickness of mild steel sheets used for fabrication of cable trays and fittings shall be 2 mm. The thickness of side coupler plates shall be 3 mm. Cable troughs shall be required for branching out few cables from main cable route. These shall be U-shaped, fabricated of mild steel sheets of thickness 2 mm and shall be hot dip galvanised. Troughs shall be standard width of 50mm & 75 mm with depth of 25 mm. The tolerance for cable tray and accessories shall be as per IS 2102 (Part-1). Tolerance Class: - Coarse	
3.19.2		SUPPORT SYSTEM FOR CABLE TRAYS	Cable supporting steel work for cable racks/cables shall comprise of various channel sections, cantilever arms, various brackets, clamps, floor plates, all hardwares such as lock washers, hexagon nuts, hexagon head bolt, support hooks, stud nuts, hexagon head screw, channel nut, channel nut with springs, fixing studs, etc. All steel components, accessories, fittings and hardware shall be hot dip galvanized. Cable tray support system shall be pre-fabricated out of single sheet. Support system for cable trays shall essentially comprise of the two components i.e. main support channel and cantilever arms. The main support channel shall be of two types : (i) C1:- having provision of supporting cable trays on one side and (ii) C2:-having provision of supporting cable trays on both sides. The main support channel and cantilever arms shall be fabricated out of 2.5 thick rolled steel sheet conforming to IS 1079. Cantilever arms of 320 mm, 620mm and 750 mm in length are required.	
3.20.0		Operators cabin	Not applicable.	
	a.	Type of construction		
	b.	Area and minimum clear height		
	c.	Operator's seat		
	d.	Warning gong		
	e.	Alarm		
	f.	Position of controllers		
	g.	Ventilation		
3.21.0		Limit switches		
	a.	Type	For Main hoist: Rotary gear + Gravity For Aux hoist: Not applicable For Cross Travel: Lever type (one way/ two way) For Long travel: Lever type (one way/ two way)	
	b.	Number provided	For Main hoist: 1+1 For Aux hoist: Not applicable For Cross Travel: 2/1 For Long travel: 2	
	c.	Material of contacts	Double break Silver Cadmium	
	d.	Control voltage / Enclosure	110 V/ IP 55	
3.22.0		Isolating switch		

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	a.	Main isolating cum changeover switch (01 no.), mushroom type emergency STOP push buttons : At center of bay length(to be decided during detail engineering).		
	b.	BHEL will provide one number 415 V AC (3 PHASE 4 WIRE) supply feeder only up to isolating switch for each crane. Any other voltage level (AC/DC) required will be derived by the vendor.		
	c.	Motor starter shall be part of crane control panel.		
3.23.0		Protective Panel	Shall be Provided with isolating switch, power contactor control and indication to switch ON/OFF power to starter panels, control and lighting transformer.	
	a.	Material	Cold Rolled Sheet steel 2 mm size,3mm for Gland Plates (CRCA/HR),1.6mm: Doors, covers etc	
	b.	Numbers and location	One number	
	c.	DOP	IP 54	
3.24.0		Control panel		
	a.	Material	Cold Rolled 2 mm size,3mm for Gland Plates (CRCA/HR),1.6mm: Doors, covers etc: sheet steel 2mm size	
	b.	Numbers and location	One each for Main hoist, Aux hoist (if applicable), Cross travel and Long travel located on bridge platform with space heaters.	
	c.	Degree of protection	IP 54	
3.25.0		Master Controllers (Desk Type)		
	a.	Number of steps	Not applicable	
	b.	Voltage & current rating		
	c.	Type		
	d.	Location		
3.26.0		Control for Hoists /Cross travel/Long travel operations / electric hoist hoisting & Cross travel motion	Through Variable Voltage Variable frequency drive	
	a.	Speed control	Thru' VVVF with minimum 6 pulse design	
	b.	Starting torque of VVVF	Up to 400 % typical with/ without encoder	
	c.	Starting current	Less than 150 % of rated torque.	
	d.	Temperature	VVVF system shall be capable of withstanding up to 50 degree C without derating.	
	e	Other requirements for VFD	Necessary input & output devices to be provided to reduce harmonics, as per IEEE519, at supply side of the drive at the switchgear.	
	f	Other requirements for VFD	The Variable frequency drive (VFD) system shall be of a modern proven design for similar applications in power plants/industry. The system shall be either Current Source Inverter (CSI) or Voltage Source Inverter (VSI) type with minimum Twelve (12) pulse design / 6 pulse with active frontend harmonic filter. For drives less than 100 KW Six (6) pulse can be offered meeting all other requirements.	
	g	Other requirements for VFD	All necessary protections e.g., Input Phase Loss, Earth Fault, Over Voltage, Output Short Circuit, Load Loss, Input Transient Protection, overload etc to be provided.	
3.27.0	a.	Contactors	AC 4 duty for reversing application. AC 3 duty for non-reversing application	
	b.	Switches	AC 23 for motor application, AC 22 for other application.	
	c.	Fuses	HRC	
	d.	Overload relay	Temperature compensated bimetallic with single phasing preventor.	
3.28.0		Power supply	Purchaser shall provide Two (2) nos. 415 V, 3 phase, 4 wire supply at operating floor near A row column at centre of bay length shall be provided. Bidder shall provide change over switch in enclosure to receive above power supply.	

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3.29.0		Cable glands	Cable shall be terminated using double compression type cable glands. Cable glands shall conform to BS:6121. Cable glands shall be made of heavy duty brass machine finished and nickel chrome plated. Thickness of plating shall not be less than 10 micron. All washers and Hardware shall also be made of brass with nickel chrome plating. Rubber components shall be of neoprene or better synthetic material and of tested quality.Cable glands shall be suitable for the sizes of cable supplied/erected.	
3.30.0		Lugs	Cable lugs/ferrules shall be solderless crimping type suitable for power and control cables as per the DIN 46239. Aluminium solderless crimping lugs/ ferrules shall be used for Aluminium cables and Copper lugs/ferrules shall be used for Copper cables. Bimetallic washers or bimetallic type lugs shall be used for bimetallic connections	
3.31.0		Transformer	(Dry type, With Insulation Class B or Better)	
	a.	Quantity	2 X 100 % for control, 1 no for lighting & 1 no for hand lamp.	
	b.	Voltage Rating	Control 415/110V, Lighting 415/240V and hand lamp 415/24V.	
	c.	KVA rating	20% over loading to be considered while sizing the rating	
3.32.0		Illumination		
	a.	In cabin	Not applicable.	
	b.	Over Bridge	4 no. 60W Bulk head fittings with Florescent lamp lamps and 4 nos.24V 20A -3 pin Industrial socket	
	c.	Under bridge	4 nos. 150 W LED lamps	
	d.	For inspection of crane components	One (1) portable 40W hand lamp with min. half span length flexible cable for inspection of crane compon-ents.	
3.33.0		Fire Extinguisher		
	a.	Type and size	4.5 kg CO2 type	
	b.	Location	One no. on bridge per Crane	
3.34.0		Maintenance cage	Suitable inspection cages to accommodate two persons to facilitate inspection of down shop lead.	
3.35.0		Mechanical overload protection (Load Cell with digital display)	To be provided for hoist mode. Digital display of load should be clearly visible from operation floor.	
3.36.0		RRC details		
	a.	RRC should be supplied with transmitter unit, receiver unit, encoder unit, decoder unit, interface panel, coupling system, battery unit and any other control gear if required.		
	b.	The equipment should be based upon the microprocessor based digital technology with almost nil hard wiring.		
	c.	The remote unit should communicate up to the distance of approximately 100 meters.		
	d.	The system has to integrate with the control system of crane, which operates at 110 V AC, Single phase.		
	e.	The remote unit should have transmitter which can be mounted on shoulder by suitable belt. Main controls can be of single joystick movement or double joystick movement type stepped control with spring return. The Micro control should be toggle switch type or push control type.		
	f.	Frequency allotment for radio remote unit from Govt. of India, Dept. of Telecommunication or any other agency shall be the responsibility of supplier.		
	g.	The transmitter and receiver unit should have its own frequency and address code with each system having its own security code so that one particular set becomes unique and there is no interference from any other remote unit device. A microprocessor should check all security codes. The processor should have its own watchdog circuit. The receiver FM band should be sufficiently narrow to allow only passing of desired frequency and valid command. Any error should shut down the system immediately.		
	h.	The remote unit should have safety key to prevent any unauthorized operation. All the crane operations should stop at once the communication breakdown occurs.		
	i.	On local unit (receiver side), the system should be provided with one selector switch so that EOT crane can be operated either from pendent push button or radio remote unit.		
	k.	The receiver unit along with I/O interface unit should be able to bear the vibrations and shocks encountered in normal usage of EOT crane.		
	l.	The system should have very fast response time.		

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3.37.0		Pendent Push buttons station	Movable and retractable type. Emergency stop, start, lights, main and creep speed for up & down, forward & reverse for Cross travel and long travel, alarm, selector switch (for mode of operation), glow type push buttons to be provided. Indicative marking for easy operation shall be provided. 1.Suitable for IP 55 protection 2.Ambient temp (-25 to 60 deg C) 3.Pendant cable shall be multicore EPR flexible. 4.PVC coated steel wire rope for pendant shall be 2 mm.	
3.38.0		Sweep	Sweep shall be attached to the end carriages and to the trolley to remove foreign materials from the rails.	
3.39.0		Whether tandem operation envisaged	No	
3.40.0		Lifting Beam & its capacity	Not applicable	
3.41.0		Anti Collision device	Not applicable	
3.42.0		Lubrication		
	a.	Provisions shall be made for proper lubrication of all parts.		
	b.	Bearings shall be provided with means of pressure lubrication.		
	c	The crane shall be provided with all necessary lubrication fittings.		
	d	Lubricating points shall be located for easy and safe access without the necessity of removing guards or other parts. Lubrication lines shall be securely fastened to the cranes structure and shall be located to provide the maximum protection and so that ordinary repairs can be made without removing the lines.		
	e	The crane shall be provided with a centralized lubrication system of reputed make. This system shall be manually operated complete with a manual pump, reservoir, supply lines, connectors, valves, and discharge lines to all bearings. System shall be centralized lubrication type with at least, one pump mounted on the trolley and one on each of the crane bridge with supply line for connection to all lubrication points. .		
	f	Metering valves with indicators shall be provided for all points of grease application and shall be mounted at readily visible and accessible locations.		
	g	All piping shall be made of suitable metal tubing with flexible hoses where required.		
3.43.0		DSL phase indicating lamps	To be provided on both end of bay length.	
3.44.0		Consumables	Consumables such as oils, lubricants including grease, servo fluids, gases and essential chemicals etc. till one year after commissioning. Bidder shall also supply a quantity of the full charge of each variety of lubricants, servo fluids, gases, chemicals etc. used which is expected to be utilized till one year after commissioning. This additional quantity shall be supplied in separate Containers.	
3.45.0		E-Learning Package	(Applicable for BC Bay BFP handling crane only)	
	a.	The courses shall be web based and mobile based Application type. It shall run on all possible versions of web browser like Internet Explorer, Google Chrome, Firefox etc. on Laptop/Desktop and shall be Smartphone/Tablet/ Mobile responsive. The Mobile responsive courses shall run on Android, Windows Mobile, Blackberry, iOS etc.		
	b.	The courses shall support liquid/fluid page layout so that the entire screen gets adjusted to PC, Laptop, Smartphone/ Mobile, Tablet and any other display devices.		
	c	Course content text shall be in English language and be associated with a voiceover in English language with Indian accent.		
	d	Courses shall be SCORM (Sharable Content Object Reference Model) compliant, version 1.2 which is compatible with LMS at PMI.		
	e	Each course shall have every physical and functional detail of the equipment / system supplied.		
	f	Each of the e-Learning course shall be based on multiple web pages and mobile pages with multiple modules.		
	g	There shall be option for self-assessment test after every course. In case the user doesn't opt for self-assessment test the user shall be able to go to the next course. There shall be no restriction in no. of times for repeating the assessments. All correct answers along with the answers marked by the users shall be displayed at the end of test/ quiz.		
	h.	If Java and Flash, as applicable are not available in the system to run the package, then there shall be a prompt message for updation of the same.		
	i.	Each course shall have a self-running interactive content with navigation buttons containing forward, backward, pause, bookmark and menu options in the course window.		
	j.	The course shall contain chapter titled 'Introduction/overview' that explains the purpose of the course.		

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	k.	The course content shall contain descriptive text shall be factual, specific, terse, clearly worded, and simply illustrative, so that the user can understand it.		
	l.	The system shall provide the user with the ability to select the information with a Cursor.		
	m	The course menu should contain table of content linked to concerned pages. The user shall be given the capability to access all of the functions available on the system through a menu system. This shall consist of active buttons, which shall control a hierarchy of pull down/pop-up menus. Menu shall appear quickly and exist only while a selection is being made. The user shall be given the capability to position the cursor or pointer on the menu item and use pointer device such as mouse to activate the function.		
	n	Every course shall contain the 3D design/drawing/exploded view/3600 turn around view of the equipment/system, textual description of the equipment/system and its functionality with video (as applicable), animation and audio.		
	o	The users shall be able to control audio sound level associated with the courses.		
	p	Drawings / text in the courses shall be scalable (Zoom In/ Out).		
	q	The user shall have the capability to record a bookmark to mark displayed information for later recall, whenever he accesses the same course next time.		
	r	e-learning Package of an equipment / system shall include e-learning courses for each of erection, commissioning, operation and maintenance of that equipment / system.		
	s	e-learning courses on erection, commissioning, operation and maintenance of an equipment / system shall include e-learning lessons/chapters/modules (as required) for erection, commissioning, operation and maintenance respectively of that equipment / system.		
	t	The vendor shall get the approval of one sample course from EIC before proceeding for further courses.		
3.46.00		Nuts & Bolts	As per IS:1363, IS:1364 and IS:1367. High Tension Friction grip bolts as per IS: 3757. High Tension Friction grip nuts as per IS: 6623.	
3.47.00		Electrodes	Radiography quality, covered electrodes with heavy covering as per IS : 814 and relevant requirements of ASME Sec. IX and IIC. Bare Electrodes as per IS:7280 and flux wire combination as per IS : 3613.	
3.48.00		Electric Hoist (to be erected on monorail beam welded underneath one bridge girder of CWPB crane)		
	a.	Quantity	One number for CWPB crane	
	b.	Type, location	Electric wire rope hoist, indoor	
	c	Capacity	2T	
	d	Hook approach and lift	As per Crane clearance diagram (Refer Compliance Drawings)	
	e	Control	Pendant Push button of Electric hoist	
	f	Overload test	125% of SWL (Safe Working Load)	
	g	General Design & duty	As per IS: 3938 latest conforming to Class-II	
	h	Speed with full load (mtrs/min)		
	h.1	Creep speed M/Min	@ 10% of main speed for all the motions through VVVF drive	
	h.2	Hoisting speed	3 m/min	
	h.3	Trolley motion	10 m/min	
	i	Type of transmission	Through Electric motor and gearbox	
	j	Wire Rope		
	j.1	Construction / core	Extra flexible plough steel , 6 x 36 or 6x37 construction	
	j.2	Code	IS: 2266 (latest edition)	
	j.3	Number of falls	min 2	
	j.4	Factor of safety	As per IS-3938 latest edition	
	k	Load Hook and block	NORMALISED HOOK ONLY	
	k.1	Type of load hook	Shank type swiveling with safety latch	
	k.2	Load hook Code	IS: 15560	

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	k.3	Load hook Material	Class 3 for hook of grades L & M respectively as per IS 1875:1992 for hooks conforming to IS : 15560	
	k.4	Hook suspension	Thrust bearing	
	l	Gear & pinion		
	l.1	Type	Spur / Helical	
	l.2	Material	Gear: 16 Mn Cr 5 / 20 Mn Cr 5 / C40 / C50 / EN19 / EN24 / SAE 8620 / 16 Cr Ni 4 / 18 Ni Cr Mo5 / 39 Ni Cr. MO3 / 42 Cr	
	m.1	Trolley drive	Single flanged	
	m.2	Wheel conform to (Std. / code)	IS: 3938	
	m.3	Wheel material	Cast, forged or rolled steel	
	m.4	Hardness	200 BHN (max)	
	n	SHEAVE		
	n.1	material	Fabricated from steel plate. IS: 2062 Gr. B / carbon steel casting as per IS 1030 or as per IS: 3938.	
	n.2	Bearing type	Antifriction Ball / Roller	
	o	BRAKE (HOIST)		
	o.2	Type	DC EM (disc type- fail to safe)	
	o.3	Capacity	150 % of rated motor torque	
	o.4	Number	One number	
	p	BRAKE (TROLLEY)		
	p.1	Type	DC EM (disc type- fail to safe)	
	p.2	Capacity	150 % of rated motor torque	
	p.3	Number	One number for each motor	
	q	ROPE DRUM		
	q.1	Material	Seamless steel pipe. ASTM A106 Gr A /B /ASTM 53 grade B; Fabricated from MS as per IS 2062 Gr A/B.	
	q.2	Flange / Flangeless	Flanged	
	r	TYPE OF POWER SUPPLY TO HOIST		
	r.1	CT travel	Shrouded Bus Bar (Copper) Conductor Type DSL / EPR flexible trailing cable for hoist mounted panels.	
	s	MOTORS	as per details given above for double girder cranes	
	t	LIMIT SWITCHES	Hoisting / lowering	Trolley
	t.1	Type	Rotary geared + gravity type	Two/ one-way lever
	t.2	Material of contacts	Double break Silver Cadmium	
	t.3	Control voltage / Enclosure	110 V/ IP 55	
	u	CONTROL PANEL (Hoist mounted).	* Fabricated from CRCA steel sheet min 2 mm thick. * Degree of protection shall be IP 55. * Power on indicating lamps shall be provided * Panel illumination lamps (LED type) operated by door switch. * 2 nos earthing bolts on panel. * 20 % spares terminals (clip on type) shall be provided. * Power and control terminals (clip on type) shall be on separate channels. * Gland plate thickness shall be minimum 3mm. * Gland plate shall be double brass compression type.	

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	v	Pendent Push buttons station	Up /down / forward / Reverse push buttons (glow type). Indicative marking for easy operation shall be provided. 1.Suitable for IP 55 protection 2.Ambient temp (-25 to 60 deg C) 3.Suitable for upto: 1.5 X 14C cable entry. 4.Pendant cable shall be multicore EPR flexible. 5.PVC coated steel wire rope for pendant shall be 2 mm.	
	w	Control Transformer		
	w.1	Type	Dry type, with insulation class B or better.	
	w.2	Quantity & rating	2 x 100% with minimum 20% over loading to be considered while sizing the rating.	
	Note:-			
1	Material of all Structural steel plates and rolled section shall be Mild steel, grade 'B' of IS 2062 in 100% killed,normalised and ultrasonically tested quality or high strength steel of IS 8500 as appropriate.			
2	The crane shall be complete with trolley and truck, wheels and axles, Drive mechanisms, Hoisting Drums, Brakes, Creep Speed Arrangement, Lifting tackles, Buffers Electric Motors, Controls, Switch Board and cabling, horns, warning lights, Limit switches etc. Any item not mentioned herein but required to make the system complete for the satisfactory performance of the crane shall also be included.			
3	Trolley stops of spring type to be mounted independently on bridge rails to prevent trolley from running off.			
4	Buffers to be designed to bring the loaded crane to rest from a speed of 50% of the rated speed.			
5	Suitable guard to push forward or off the rail track any object placed across to be provided. Suitable guards to live electrical wirings downshop lead.			
6	Necessary access ladders shall be provided for access on to crane bridge platform from the gantry girder level, from crane bridge platform to trolley platform and from operating floor of pump to gantry girder level.			
7	The lifting tackle shall consist of a safety type lower pulley block, hook, necessary sheave and flexible steel wire ropes. The lower block sheaves and ropes shall be of adequate design and size to handle the specified loads.			
8	Each crane shall have a permanent inscription of English on each side, readily visible from the ground level, stating the safe working loads in tonnes for both the hooks, year of manufacture, crane serial number and manufacturer's name.			

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				Date : Sept 2025	
TECHNICAL DATA SHEET B					
(SUCCESSFUL BIDDER TO FILL AFTER PLACEMENT OF ORDER)					
Sr. No.		DESCRIPTION	TECHNICAL PARTICULARS		
1.0.0		COMPONENT DETAILS			
		Bridge girder			
	a.	Size			
	b.	Width			
	c.	Length			
2.0.0		Trolley			
	a.	Centre to centre distance of wheels (on the same rails)			
3.0.0		Rope drums	Main hoist	Aux hoist (if applicable)	
	a.	Dimensions in mm length and diameter (PCD)			
	b.	Number of grooves			
	c.	Diameter on bottom of grooves			
4.0.0		Rope details	Main hoist	Aux hoist (if applicable)	
	a.	Grade			
	b.	Diameter in mm			
	c.	Breaking strength			
	d.	Tensile designation			
	e.	Number of falls			
	f.	Length of rope			
3.4.0		Sheaves details	Main hoist	Aux hoist (if applicable)	
	a.	Diameter of main sheaves in mm on Root			
	b.	Diameter of Equalizing sheaves (in mm) on Root			
3.5.0		COUPLINGS & SHAFTING			
3.5.1		Coupling details (between motor and gear box)	(for Main hoist, Aux hoist (if applicable), Cross Travel and long travel)		
	a.	Size & Torque rating			
3.5.2		Coupling details (between gear box and wheels)	Cross Travel (CT)	Long Travel (LT)	
	a.	Size & Torque rating			
3.5.3		Coupling details (between gear box and rope drum)	Main hoist	Aux hoist (if applicable)	
	a.	Size			
3.5.4		Shafting (Output)	Cross Travel	Long Travel	
	a.	Diameter in mm			
	b.	Number of support bearings			
	c.	Type of support bearing			
	d.	Max unsupported length of shaft in mm			
3.6.0		Gear box details			
3.6.1		Hoist Motions	MH and MH Micro	AH and AH Micro (if applicable)	
	a.	Total number of reductions			
	b.	Type of gears for MH and AH			
	c.	Reduction ratio			
	d.	Hardness (BHN) – gear			
	e.	Hardness (BHN) – pinion			
	f.	Difference in Gear and pinion hardness			
	g.	Materials (gear/pinions)			
3.6.2		Travel Motions	CT and CT Micro	LT and LT Micro	
	a.	Total number of reduction			

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	b.	Type of gears		
	c.	Reduction ratio		
	d.	Hardness (BHN) – gear		
	e.	Hardness (BHN) – pinion		
	f.	Difference in Gear and pinion hardness		
	g.	Materials (gear / pinions)		
3.7.0		Wheels details	Cross Travel	Long Travel
	a.	Material		
	b.	Hardness		
	c.	Depth of hardness		
	d.	Tread diameter in mm		
	e.	Tread width in mm		
	f.	Numbers provided		
3.8.0		Lifting hooks	Main hoist	Aux hoist (if applicable)
	a.	Material		
3.9.0		Brakes		
3.9.1		Hoist Motions	Main hoist	Aux hoist (if applicable)
	a.	Diameter of brake in mm		
	b.	Torque rating Kg. M		
	c.	Braking torque actually required		
	d.	Braking distance in mm		
	e.	Thruster material		
3.9.2		Travel Motions	Cross Travel	Long Travel
	a	Dia of brake in mm		
	b.	Torque rating KgM		
	c.	Braking torque actually required		
	d.	Thruster material		
	e.	Braking distance in mm		
3.10.0		Rails	Cross Travel	Long Travel
	a.	Weight per metre		
	b.	Top width in mm		
	c.	Height in mm		
3.11.0		Motors		
	a.	rating	For Main hoist: For aux hoist (if applicable): For Cross travel: For long travel:	
	b.	Speed (rpm)		
	c.	Contactors for motor		
	d.	Spacing between gland plate & centre of bottom terminal stud		
	e.	Minimum inter-phase and phase-earth air clearances with lugs installed		
	f.	Space heater requirements details		
	g.	Overload protection details		
3.12.0		Limit switches		
	a.	Rating of contacts		
3.13.0		Protective Panel		
	a.	Dimension		
3.14.0		Control panel for MH, AH (if applicable), CT and LT		
	a.	Dimension		
3.15.0		Slings, suitable for load & overload test of EOT Crane (to be supplied alongwith load test certificate for joint at 2 X rated capacity)		

बी एच ई एल 		TECHNICAL SPECIFICATION 2X800MW DVC KODERMA TPS PHASE II DOUBLE GIRDER EOT CRANES FOR UPTO 100T CAPACITY		PE-TS-519-501-A001		
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	a	Length				
	b.	Size				

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COMPLIANCE DRAWINGS

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PERFORMANCE GUARANTEES TO BE DEMOSTRATED AT SITE

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PERFORMANCE GUARANTEES TO BE DEMONSTRATED AT SITE AS PER IS-3177.	
S.N.	DESCRIPTION OF TESTS TO BE PERFORMED
1	Speed test at rated load for hoisting, CT and LT mechanism.
2	Brakes test
3	Deflection test of bridge girder at rated load. Crane shall rest on centerline of LT wheels.
4	Overload test (running of CT and Hoisting mechanism at 125% of the rated load). Capability of crane to lift the overload from mid-air shall be demonstrated.

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STANDARD MANUFACTURING QUALITY PLAN FOR DOUBLE GIRDER EOT CRANE

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025		
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:		
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:		
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 1 OF 8		
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST-ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N				D	M	C	N	

1.0 MATERIAL:														
1.1	Steel Plates (Box Girder, End Carriage, Trolley & Gear Casing ,Fabricated Rope Drum)	1.Chemical & Physical	Major	Chemical & Physical	100%	1/Heat	APPD. DRG / DATA SHEET	APPD. DRG / DATA SHEET	TC	√	P	V/ W	V	Refer Note 12
		2. NDT	Major	UT (25mm & above thickness)	100%	100%	ASTM A435 / A578 LEVEL B	ASTM A435 / A578 LEVEL B	TC/ NDT Report	√	P	V/ W	V	Refer Note 13
1.2	Round Bars (For Pinion ,Gear ,Axles & Shafts)	1. Chemical & Physical	Major	Chemical & Physical	100%	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	Refer Note 14
		2. NDT	Major	U.T	100%	-	ASTM A 388-2007	UT PROCEDURE	NDT Report	√	P	V	V	For UT procedure refer Note 4
1.3	Forgings (For Gears, Wheels)	1. Chemical & Physical	Major	Chemical & Physical	100%	1/Heat	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V/ W	V	Refer Note 12 & 14
		2. NDT	Major	U.T	100%	-	ASTM A 388-2007	UT PROCEDURE	NDT Report	√	P	W	V	For UT procedure refer Note 4
1.4	Casting for Gear	1. Chemical & Physical	Major	Chemical & Physical	100%	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	
		2.NDT	Major	U.T	100%	-	ASME Sec.V,article-23,SA-609	SA - 609 , Level - II	NDT Report	√	P	V	V	For UT procedure refer Note 4
1.5	Pulley & Brake Drums	1. Chemical & Physical	Major	Chemical & Physical	100%	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	
		2.NDT	Major	U.T (only boss area)	100%	-	ASME Sec.V,article-23,SA-609	SA - 609 , Level - II	NDT Report	√	P	V	V	For UT procedure refer Note 4
1.6	Seamless Pipe for Rope Drum	1. Chemical & Physical	Major	Chemical & Physical	100%	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	
		2.NDT	Major	U.T	100%	-	ASTM E 213	ASTM E 213	NDT Report	√	P	V	V	For UT procedure refer Note 4
			Major	Macro Etching, Flattening for Seamless Pipe	100%	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	
2.0	BOUGHT OUT ITEMS													
2.1	Hook	Forging Raw material	Major	Visual Check	100%	100%	APPD. DRG. / DATA SHEET	No Visual defect	I.R	√	P	W	V	
			Major	UT after forging	100%	100%	ASTM A 388-2007	UT PROCEDURE	NDT Report	√	P	W	V	Refer Note 15
		Heat treatment	Major	Heat treatment after forging	100%	-	Mfg. Std. / Drg	Mfg. Std. / Drg	HT Chart	√	P	V	V	Refer Note 16

BHEL					
ENGINEERING			QUALITY		
	Sign & Date	Name		Sign & Date	Name
Prepared by:			Checked by:		
Reviewed by:			Reviewed by:		

BIDDER/ SUPPLIER	
Sign & Date	
Seal	

FOR CUSTOMER REVIEW & APPROVAL			
Doc No:			
	Sign & Date	Name	Seal
Reviewed by:			
Approved by:			

THIS IS PART OF TECHNICAL SPECIFICATION PE-TS-519-501-A001 REV 0

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001		DATE: SEPT 2025			
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001		DATE:			
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:		DATE:			
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:		SHEET 2 OF 8			
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N					D	M	C	N
		Chemical test	Major	Chemical integral test piece.	1 Per Heat/Batch	-	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	TC	√	P	V	V	
		Physical test	Major	Tensile test on integral test piece after heat treatment	1 Per Heat/Batch	1 Per Heat/Batch	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	I.R	√	P	W	V	Refer Note 17
		Macro etching	Major	Grain Size	100%	-	ASTM E 112	Grain size 6 or final	TC	√	P	V	V	
		NDT before Proof Load	Major	UT	100%	-	ASTM A 388-2007	UT PROCEDURE	NDT Report	√	P	V	V	For UT procedure refer Note 4
			Major	DPT	100%	-	ASME Sec V	ASME SEC. VIII, Div-1, Append. - 8	NDT Report	√	P	V	V	
		Proof Load Test	Major	Proof Load Test	100%	100%	APPD. DRG. / DATA SHEET	APPD. DRG. / DATA SHEET	I.R	√	P	W	V	Refer Note 18
		NDT after Proof Load (UT only shank portion)	Major	U.T & MPI after Proof Load Test	100%	100%	ASTM A 388-2007 / ASTM E 709-2007	ASTM A 388-2007 / ASTM E 709-2007	NDT Report	√	P	W	V	
		Identification Punch	Major	Visual	100%	100%	—	—	I.R	√	P	H	V	Refer Note 20
2.2	Wire Rope & slings	Visual & Breaking Strength	Major	Type, grade, breaking strength & visual , Diameter	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	Mill T.C.	√	P	V	V	
2.3	Rails	Chemical & Tensile , Cross section , Hardness , Dimension	Major	Chemical & Tensile, Hardness, Dimension	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	
3.0	ELECTRICAL ITEMS													
3.1	Transformer (Control transformer, Light transformer etc.)	Make , Rating	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	IR	√	P	V	V	
		Routine Test	Major	Doc. Review	100%	-	Mfg. Catalogue	Mfg. Standard	TC	√	P	V	V	

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal
Prepared by:			Checked by:					Reviewed by:			
Reviewed by:			Reviewed by:					Approved by:			

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025	
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:	
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:	
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 3 OF 8	
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY		REMARKS
1	2	3	4	5	6		7	8	9	*	**		10
					M	C/N				D	M	C	N

3.2	SFU , MCCB , MCB , CONTRACTORS , DSL, RELAYS , FUSES , RESISTENCE BANK,HOOTER, PUSH BUTTONS, indicating instruments , junction box, Limit Switches	Make / Rating / Type / Size	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	IR	√	P	V	V	
		Functional / Continuity Check	Major	Operational	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	IR / COC	√	P	V	V	
3.3	Motor	Type, Rating, Make, Size	Major	Visual	100%	-	CUSTOMER approved BOI list & ADS / DRG		Mfg. TC	√	P	V	V	Refer Note 19
		Routine Test / Clearance of QP for Motor above 50 KW	Major	Measurement	100%		IS: 325 / App. Data sheet/CUSTOMER ADS	IS: 325 / App. Data sheet/CUSTOMER ADS	COC / Mfg T.C. (As per Note-3)	√	P	V	V	
3.4	Brakes	Make,Type,Rating	Major	Measurement	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC		P	V	V	
		IR, HV, Functional Test	Major	Measurement	100%	-	MFG. STD.	MFG. STD.	TC	√	P	V	V	
3.5	VVVF Drive	Type, Rating, Make,	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC/ COC	√	P	V	V	
		Routine Test	Major	Measurement	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	
3.6	Cables (Power / Control / Trialing / Flexible)	Make, Type, Size	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	
		Routine Test	Major	Measurement	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	
3.7	Radio Remote, Master Controller, Pendent Station, Switches	Make / Rating / Type / Functional	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC / COC	√	P	V	V	
3.8	Anti - Collision Device , Cable Gland & lugs , Rectifier ,Lamps, Load cell, Illumination and Earthing material	Make / Type	Major	Visual	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC/ COC		P	V	V	
4.0	OTHER BOUGHT OUR ITEMS													

BHEL					
ENGINEERING			QUALITY		
	Sign & Date	Name		Sign & Date	Name
Prepared by:			Checked by:		
Reviewed by:			Reviewed by:		

BIDDER/ SUPPLIER	
Sign & Date	
Seal	

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Doc No:			
	Sign & Date	Name	Seal
Reviewed by:			
Approved by:			

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SL NO.	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025		
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:		
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:		
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 4 OF 8		
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N				D	M	C	N	
4.1	Bearings	Type & Size	Major	Verification	100%	-	Appd.drg./ Mfr's catalogue	Appd.drg./ Mfr's catalogue	TC / IR / COC	√	P	V	V	
4.2	Tools and tackles	Verification of type size / rating	Major	Verification	100%	-	As per PO / BBU	APPD DRG / DATA SHEET	TC / COC	√	P	V	V	
4.3	Spares (Mandatory / recommended spare / commissioning spares)	Verification of make, type, size , rating	Major	Review Of Internal Inspection Reports / Mfr's TC / COC	100%	-	Approved Spare List	APPD DRG / DATA SHEET	IR / COC	√	P	V/W	V/W	Refer Note 21
5.0	IN PROCESS : FABRICATED COMPONENTS : GIRDER, END CARRIAGE, TROLLEY, GEAR BOX CASING , FABRICATED ROPE DRUM													
5.1	Welding	WPS, PQR & WPQ	Major	Review of Document	100%	-	ASME SEC IX	ASME SEC IX	As ASME Format	√	P	V	V	Refer Note 22
5.2	Weld Fit Up & Edge Preparation	Dimension	Major	Dimension	100%	-	Mfg. Drg.	Mfg. Drg.	I.R	√	P	V	V	
5.3	Fillet Weld	NDT	Major	DPT on Fillet Weld	100%	-	ASME - Sec. V	ASME SEC. VIII , Div-1 , Append. - 8	NDT Report	√	P	V	V	Refer Note 23
5.4	Butt Weld (Girder ,End-carriage, Trolley & Fabricated Rope drum, if applicable)	NDT	Major	Radiography Test / Gamma Ray	Refer Note 24	-	ASME - Sec. V	ASME - Sec. VIII,Div-1, CL- UW-51 & 52	NDT Report	√	P	V	V	
				DPT on Butt Weld	100%	10%	ASTM E165	No Relevant Indications	I.R	√	P	W	V	10% random witness by BHEL
5.5	Heat Treatment (SR) of Rope drum and Gear Box Casing	Mechanical	Major	Review of SR chart/Test Report	100%	-	Appd Drg./ Relevant Std.	Appd Drg./ Relevant Std.	SR Chart	√	P	V	V	
5.6	Cabin (as applicable), Platform, Hand railing	Dimension	Major	Dimension	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	I.R	√	P	V	V	
5.7	Fabricated Components (Girders, End Carriages & Trolley, end stopper)	Visual & dimensional	Major	Dimensional & Visual Check	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	I.R.	√	P	V	V	At the Time of Final Insp. Of Crane
6.0	IN PROCESS INSPECTION OF MACHINED COMPONENTS													
6.1	Pinions, Gear & Wheel	1.Dimensional Check	Major	Measurement	100%	-	Mfg Drg / Data sheet	Mfg Drg / Data sheet	I.R	√	P	V	V	
		2. Heat Treatment	Major	Heat Treatment chart	100%	-	Material specification/ Mfg drg	Material specification/ Mfg drg	HT Chart	√	P	V	V	Refer Note 25
		3. Hardness	Major	Measurement	100%	100%	Mfg Drg / APPD DRG / DATA SHEET	Mfg Drg / APPD DRG / DATA SHEET	I.R	√	P	W	V	
		4. NDT	Major	DPT on teeth	100%	-	IS:3658-1981 / ASME - Sec. V	NO CRACKS & LINEAR INDICATION	NDT Report	√	P	V	V	

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
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	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal
Prepared by:			Checked by:					Reviewed by:			
Reviewed by:			Reviewed by:					Approved by:			

THIS IS PART OF TECHNICAL SPECIFICATION PE-TS-519-501-A001 REV 0

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025		
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:		
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:		
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 5 OF 8		
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N					D	M	C	N
6.2	Hardness Difference (Pinion & Gear)	Hardness	Major	Mechanical	100%	-	APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	
6.3	Rope Drum	1.NDT & Dimensional Check	Major	DP test on fillet weld & Dimension	100%	-	ASME SEC VIII Div -1 / Mfg. Drg.	NO RELEVANT INDICATION	NDT Report	√	P	V	V	
		2.NDT	Major	DP test on Groove after machining	100%	-	IS: 3658-1981 / ASME - Sec. V	NO RELEVANT INDICATION	NDT Report	√	P	V	V	
6.4	Pulley & Brake Drums	1.Visual & dimension	Major	verification	100%	-	Mfg. Drg	Mfg. Drg	I.R.	√	P	V	V	
		2. NDT	Major	DPT after machining	100%	-	ASME - Sec. V	NO RELEVANT INDICATION	NDT Report	√	P	V	V	
6.5	Assembled Gear Box	1. Visual & Dimensional	Major	Visual & dimensional	100%	-	Mfg. Standard	Mfg. Standard	I.R.	√	P	V	V	
		2. NDT	Major	DPT on Fillet Weld	100%	-	ASME - Sec. V	NO RELEVANT INDICATION	NDT Report	√	P	V	V	
		3.Mechanical	Major	Backlash ,Contact Pattern	100%	-	APPD DRG / DATA SHEET /Mfg. Std.	APPD DRG / DATA SHEET /Mfg. Std.	I.R	√	P	V	V	
			Major	Reduction Ratio , No Load Run Test For Check of Oil Leakage / Temp. Rise, Vibration & Noise	100%	100%	Approved Drawing /Data Sheet/Mfg. Std	Approved Drawing /Data Sheet/Mfg. Std	I.R.	√	P	V/W	V	Refer Note 26
6.6	DSL Guard	Dimensional	Major	Dimension	100%	-	Mfg. Drg.	Mfg. Drg.	I.R.	√	P	V	V	
7.0	FINAL INSPECTION													
7.1	CONTROL PANEL With VVVF Drive	Identification of all Elect. Components, Cable laying / Dressing/ Feruling /Terminations Dimensional, Functional , HV, IR, interlocks, Protection DOP	Major	Visual, dimensional, Operational & Functional Check , HV,IR, Painting	100%	100%	IS:3177 / APPD DRG / DATA SHEET	IS:3177 / APPD DRG / DATA SHEET	I.R	√	P	W	W	Refer Note 27
		Paint Shade/ Thk/ Adhesion	Major	Visual / DFT Check	100%		APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	TC	√	P	V	V	Refer Note 28

BHEL					
ENGINEERING			QUALITY		
	Sign & Date	Name		Sign & Date	Name
Prepared by:			Checked by:		
Reviewed by:			Reviewed by:		

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Sign & Date	
Seal	

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Doc No:			
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	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025		
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:		
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:		
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 6 OF 8		
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORD		AGENCY			REMARKS
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N					D	M	C	
7.2	EOT crane assembly with control panel, Master Controller / Remote Controller Pendent Station (At Works)	Visual & dimensional	Major	Dimensional ,Span, Diagonal & Wheel Base Dimension, LT Stopper Dimension	100%	100%	IS 3177 / APPD DRG / DATA SHEET	IS 3177 / APPD DRG / DATA SHEET	I.R.	√	P	W	W	Refer Note 29
		Operational	Major	(1) Speed & Current Measurement at No Load for Hoist & CT/LT motion (2) Speed & Current measurement at SWL of Hoist & CT motion (3) Over load test (125%) of SWL for Hoist motion (4) Deflection test at SWL (5) Operation Check of Brake at SWL (6) Interlock & Functional test (7) Verification of breaking path (calculated), under bridge Clearance (difference Of It wheel bottom to Girder bottom)	100%	100%	APPD DRG / DATA SHEET / IS 3177	APPD DRG / DATA SHEET / IS 3177	I.R.	√	P	W	W	Refer Note 30
8.0	Lifting beam (if applicable for tandem operation) - at works	Measurement	Major	Dimension, Visual and load /overload test	100%	100%	APPD DRG / DATA SHEET / IS 3177	APPD DRG / DATA SHEET / IS 3177	IR	√	P	W	W	
9.0	Cleaning & painting	Paint Shade / DFT	Major	Visual , DFT Check	100%		APPD DRG / DATA SHEET	APPD DRG / DATA SHEET	IR	√	P	V	V	
10.0	Review of QA documentation						As per approved QAP			V	V	V	V	
11.0	Packing of components	Packing Soundness	Major	Visual	100%	100%	APPD DRG / DATA SHEET /Packing specification	APPD DRG / DATA SHEET /Packing specification	IR	√	P	W	V	Refer Note 6

NOTES:

- 1) Original TCs / Photocopies certified in original by mill shall be furnished for review. Test In absence of correlated TCs Check test shall be carried out from each plate/ bar for above 10 mm thk., certificates shall be offered for review at the time of stage inspection of components / assembly. Supplier shall ensure that pitted material is not used.
- 2) X-Ray to be taken for thickness upto 19 mm and Gamma Ray for thickness above 19 mm. If Gamma Ray is used for lower thickness slow speed film like D2 or equivalent which gives enough readable and interpretable film quality to be used for clarity. All NDT shall be carried out by Qualified Level II personnel.

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
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Prepared by:			Checked by:					Reviewed by:			
Reviewed by:			Reviewed by:					Approved by:			

THIS IS PART OF TECHNICAL SPECIFICATION PE-TS-519-501-A001 REV 0

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025		
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:		
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:		
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 7 OF 8		
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS		FORMAT OF RECORD		AGENCY		REMARKS
1	2	3	4	5	6		7	8	9	*	**			10
					M	C/N				D	M	C	N	

- 3) Performance of electrical & control devices along with the interlocks, protection & sequence to be checked after crane assembly at works.
- 4) Vendor's UT Procedure from NDT Level II to be submitted to BHEL for approval.
- 5) Following to be noted for packing:
 - a) Packing shall be suitable for storage at site in tropical climate conditions.
 - b) For export job, packing shall be as per BHEL seaworthy packing specification.
 - c) Photographs of items duly placed inside the box just before the final packing and photographs of the box just before dispatch to be sent to BHEL purchase group for review before issuing MDCC.
- 6) In case of foreign supplier, all test certificates shall be furnished by the supplier, duly witnessed/verified by supplier's TPI.
- 7) The latest revisions/year of issue of all the standard indicated in the QP shall be referred.
- 8) Blank.
- 9) Blank.
- 10) The heat no. /plate identification no. shall be transferred on all major cut pieces of the MS plate for proper correlation, cutting plan of each plate shall be maintained for proper traceability.
- 11) Welder no. shall be punched near butt weld joints, the welding plan of each fabricated item shall be maintained.
- 12) In absence of co-related TC, check testing shall be witnessed on samples selected by Main contractor.
- 13) Co-related Mill TC inclusive of UT will be reviewed by BHEL/CUSTOMER, In absence of UT conformance in Mill TC, then UT will be witnessed by BHEL. For UT procedure refer Note 4.
- 14) Mech. Properties against H.T condition if applicable against respective Material standard/Grade. Hardness test report review after applicable Q & T condition.
- 15) For MH Hook, UT in proof machined condition and AH Hook in grinding condition. For UT procedure refer Note 4
- 16) HT chart review for Main Hook & AH Hook.
- 17) Test Piece will be drawn from top of shank portion to be identified by BHEL and CUSTOMER.
- 18) W - FOR MAIN HOOK, & AH Hook (Cap. >15T). For UT procedure refer Note 4.
- 18.1) In case of Indian Manufactured Hook : Proof Load test and NDT test (UT & MPI/PT) shall be witnessed by BHEL-CQS/Third Party/DVC.
- 18.2) In case of imported Hooks:
 - a) Proof load test & NDT of hooks before EOT crane load test may be jointly witnessed by a customer/ third party / IDLR approved Laboratory in India OR
 - b) TPIA viz. M/S Lloyds Inspection Agency, M/S Bureau Veritas, M/s DNV, M/s TPL etc. (duly approved by DVC) shall be appointed for proof load test & NDT at the country of origin. DVC shall witness proof load test and NDT remotely
- 18.3) Bidder has to include scope of inspection of main hook by reputed third party inspector in case of inspection being done at foreign location. Charges of Third party inspection at foreign location shall be borne by bidder.
- 19) For Motors of 50kW rating and above Routine Test will be witnessed by BHEL and Type test Certificate for identical frame size will be reviewed for validity and conformance. For below 50kW rating routine tests to be witnessed by supplier of crane and type test Certificate for identical frame size will be reviewed for validity and conformance. Photocopies of Type Test Certificates are acceptable but shall be authenticated by Manufacturer. SQP of Motor: PE-QP-999-Q-007, REV-04 Dated 17.04.2021 (MOTORS 55 KW & ABOVE) & PE-QP-999-Q-006, REV-02 Dated 17.04.2021 (MOTORS UPTO 55 KW)
- 20) Identification by BHEL/Customer
- 21) V/W for items as per the Quality Plan
- 22) Welder/procedure qualification will be witnessed by Customer/ BHEL as per appd. WPS. In case the BHEL/NTPC/Lloyds /any other renowned approving agency already available, and doing the job, requalification is not required.
- 23) DP test of fillet weld for rope drum to be conducted after final machining.

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal
Prepared by:			Checked by:					Reviewed by:			
Reviewed by:			Reviewed by:					Approved by:			

	MANUFACTURER/BIDDER/VENDOR NAME & ADDRESS		MANUFACTURING QUALITY PLAN						SPEC. NO: PE-TS-519-501-A001			DATE: SEPT 2025			
			CUSTOMER: DVC						QP NO.: PE-V0-519-501-A001			DATE:			
			PROJECT: 2X800 MW KODERMA PHASE II						PO NO.:			DATE:			
			ITEM: DOUBLE GIRDER EOT CRANES UPTO 100T				SYSTEM: EOT CRANES		SECTION:			SHEET 8 OF 8			
SL NO.	COMPONENT & OPERATIONS	CHARACTERIST- ICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK		REFERENCE DOCUMENT	ACCEPTANCE NORMS		FORMAT OF RECORD		AGENCY		REMARKS	
1	2	3	4	5	6		7	8		9	*	**			10
					M	C/N					D	M	C	N	

- 24) 100% in Tension Zone, 25% in Compression Zone & 100% for rope drum Seam weld. RT before Stress relieving. RT Film shall be reviewed by BHEL/Customer
- 25) Heat treatment Chart to be reviewed by BHEL/CUSTOMER.
- 26) Noise Max.85 db at 1 mtr. & 30⁰ C temp. rise at ambient. Witness for Noise & vibration measurement during the final inspection
- 27) HV at 2.5 KV AC for power ckt at 2 KV for control ckt, DOP by paper insertion method. BOI as per CUSTOMER Approved Makes. Will be Checked at the time of Final Inspection.
- 28) 7 Tank Pretreatment before Painting.
- 29) Crane Should be Operable by RRC & PPB (Radio Remote Controller, Pendent) meant for that Crane only.
- 30) Functional & Interlock test to be checked as per approved Electrical Schematic drawing.
- 31) Note for LT Motor:
- i) Motor rating up to 50 kw: inspection Cat- III : acceptance of motor up to 50 kw is based on coc of the manufacturer and main contractor confirming as follows: “It is hereby confirmed that the above-mentioned motor /motors was/ were manufactured taking care of DVC specific requirements regarding ambient temp., voltage frequency variation, hot starts, pull out torque, kva/kw, temperature rise, distance between center of stud gland plate and tested in accordance with approved drawing /data sheets.”
- ii) Motor rating above 50 kw & less than 75 kw: inspection Cat- II as per DVC approved MQP: acceptance of motor rating above 50 kw & less than 75 kw is based on DVC review of routine report as per is:12615 - 2018 (including latest revision) duly witnessed by main contractor along with coc of the manufacturer and main contractor confirming as follows: “It is hereby confirmed that the above-mentioned motor /motors was/ were manufactured taking care of DVC specific requirements regarding ambient temp., voltage frequency variation, hot starts, pull out torque, kva/kw, temperature rise, distance between center of stud gland plate, space heater and tested in accordance with approved drawing /data sheets.”
- iii) Motor rating 75 kw & above: inspection Cat-I: as per DVC approved MQP.
- 32) Safe working load test & 125% over load test shall be conducted at shop with actual hooks, vvfd panels, shop wire ropes & temporary cables. Load test at site shall be offered with all actual components including radio remote control tests and covered in field quality assurance plan.
- 33) All raw material shall confirm to BHEL approved drg. / datasheet / specification. i.e 100 % killed, normalized and ultrasonially tested quality (UT of plate thickness _ 25 mm).

LEGENDS:

*RECORDS, IDENTIFIED WITH "TICK"(√) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION,

** **M:** SUPPLIER/ MANUFACTURER/ SUB-SUPPLIER, **C:** BHEL/ THIRD PARTY INSPECTION AGENCY, **N:** DVC

P: PERFORM, **W:** WITNESS, **V:** VERIFICATION, AS APPROPRIATE

MA: MAJOR, **MI:** MINOR, **CR:** CRITICAL. **H** - Hold point

BHEL						BIDDER/ SUPPLIER		FOR CUSTOMER REVIEW & APPROVAL			
ENGINEERING			QUALITY			Sign & Date		Doc No:			
	Sign & Date	Name		Sign & Date	Name	Seal			Sign & Date	Name	Seal
Prepared by:			Checked by:					Reviewed by:			
Reviewed by:			Reviewed by:					Approved by:			

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SUB VENDOR LIST

SR. NO.	ITEM	SUPPLIERS	REMARKS
1.	STEEL	SAIL	
		TISCO	
		JINDAL	
		RINL	
		ESSAR (AMNS)	
2.	HOOKS	STEEL FORGING & ENGG. CO.,	
		SIMRITI FORGING	
		KARACHIWALA	UP TO 25T CAPACITY
3.	GEAR COUPLINGS	ALLIANCE	
		FLEX-TRANS (formerly known as HICLIFF)	
		SAHARA	
		NUTECH	
		OEM	
4.	WIRE ROPE	USHA MARTIN	
		FORT WILLIAMS	
		B OMBAY WIRE ROPES	
		BHARAT WIRE ROPES	
5.	BEARINGS	SKF	
		FAG	
		TATA	
		NBC	
		ZKL	
		NORMA	
		NRB	
		NTN	
		KOYO	
		URB	
6.	MOTORS	JYOTI LTD.	
		NGEF	(up to 15KW)
		CROMPTON	
		KEC	(UPTO 90KW)
		BHARAT BIJLI	
		MARATHON	
		ABB	
		HAVELLS	UPTO 90 KW
		LHP	

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		BHARAT BIJLEE	
7.	BRAKES	ELECTROMAG	
		SPEED-O- CONTROL	
		BCH	FOR DCEM BRAKES ONLY
		KAKKU	
		PATHE	
8.	CONTACTOR	SIEMENS	
		L&T	
		SCHNEIDER (Earlier TELE MECHANIQUE)	
		ABB	
		GE-POWER	
9.	OVER LOAD RELAYS	BCH	
		SIEMENS	
		L&T	
		ABB	
		SCHNEIDER (Earlier TELE MACHANIQUE)	
10.	HRC FUSES	SIEMENS	
		L&T	
		ENGLISH ELECTRIC	
		GE POWER	
		EATON (BUSSMANN)	
		INDO ASIAN	
		C&S ELECTRIC LTD.	
		SPACEAGE SWITCHGEARS LTD.	
		ALSTOM LTD	
		ESSEN DEINKI	
		SCHNEIDER ELECTRIC INDIA PVT. LTD.	
11.	ISOLATING SWITCH	ABB	
		SIEMENS	
		L&T	
		CONTROL & SWITCH GEAR	
12.	SWITCH FUSE UNITS	ABB	
		SIEMENS	
		L&T	
		SCHNEIDER	
		CONTROL & SWITCH GEAR	
13.	TIME DELAY RELAYS	ABB	
		SIEMENS	
		L&T	
		BCH	
		SCHNEIDER (Earlier TELE MACHANIQUE)	

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14.	TRANSFORMERS	INDCOIL	
		LOGICSTAT	
		KAPPA	
		AUTOMATIC ELECTRIC	
		PRECISE ELECTRICALS	
		SILKAAN ELECTRIC MFG. CO. LTD.	
		SOUTHERN ELECTRIC	
		UNILEC ENGINEERS PVT. LTD.	
		NEC	
15.	BULB & FLOURESCENT TUBES/FITTINGS	ANCHOR	
		PHILIPS	
		BAJAJ	
		Orient	
		CROMPTON	
16.	CABLE LUGS (HEAVY DUTY)	DOWELLS	
		UML ENGINEERS	
		CHETNA	
		BILLET	
		BRACO	
		JAINSON	
17.	HOOTERS	BEACON	
		OSC	
		TARGET	
		KHERAJ	
18.	LIGHTING SWITCHES	ANCHOR	
		ELLORA	
		GE	
		CROMPTON	
		BAJAJ	
		PHILIPS	
19.	PVC POWER CABLES	APAR INDUSTRIES LTD.	
		CORDS CABLE INDUSTRIES LTD.	
		DIAMOND POWER INFRASTRUCTURE LTD	
		GOYOLENE FIBRES (INDIA) PVT.LTD	
		GOVIND CABLE INDUSTRIES	
		GUPTA POWER INFRASTRUCTURE LIMITED	
		HAVELLS INDIA LIMITED	
		KEI INDUSTRIES LTD.	
		KRISHNA ELECTRICAL INDUSTRIES LTD	
		KEC INTERNATIONAL LIMITED	
		MANSFIELD CABLES COMPANY LTD.	

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		NICCO CORPORATION LTD.	
		PARAMOUNT COMMUNICATIONS LTD.	
		POLYCAB WIRES PVT. LTD.	
		RADIANT CORPORATION PRIVATE LIMITED	
		RAVIN CABLES LIMITED	
		SUYOG ELECTRICALS LTD.	
		SRIRAM CABLES PVT. LTD.	
		SCOT INNOVATION WIRES AND CABLES PVT. LTD.	
		SAM CABLES & CONDUCTORS (P) LTD	
		THERMO CABLES LTD	
20.	PVC CONTROL CABLES	GEMSCAB INDUSTRIES LTD	
		GOVIND CABLE INDUSTRIES	
		GUPTA POWER INFRASTRUCTURE LIMITED	
		HAVELLS INDIA LIMITED	
		INCOM CABLES (P) LTD	
		KEI INDUSTRIES LTD	
		KRISHNA ELECTRICAL INDUSTRIES LTD	
		KEC INTERNATIONAL LIMITED	
		MANSFIELD CABLES COMPANY LTD	
		NICCO CORPORATION LTD	
		PARAMOUNT COMMUNICATIONS LTD	
		POLYCAB WIRES PVT. LTD	
		RAVIN CABLES LIMITED	
		SUYOG ELECTRICALS LTD	
		SPECIAL CABLES PVT. LTD	
		SCOT INNOVATION WIRES AND CABLES PVT. LTD	
		SAM CABLES & CONDUCTORS (P) LTD	
		SPM POWER & TELECOM PVT. LTD	
		TORRENT CABLES LTD	
		THERMO CABLES LTD	
21.	TRAILING CABLES	TIRUPATI PLASTOMATICS PVT. LTD	
		UNIVERSAL CABLES LTD	
		NICCO	
		UNIVERSAL	
		INCAB	
		ICL	
		APAR INDUSTRIES LTD	
		CMI LTD	
		KEI INDUSTRIES LTD	
		SUYOG ELECTRICALS LTD	
		APAR INDUSTRIES LTD	

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22.	XLPE POWER CABLES	CORDS CABLE INDUSTRIES LTD	
		CRYSTAL CABLE INDUSTRIES LTD	
		DIAMOND POWER INFRASTRUCTURE LTD	
		GEMSCAB INDUSTRIES LTD	
		GOVIND CABLE INDUSTRIES	
		GUPTA POWER INFRASTRUCTURE LIMITED	
		HAVELLS INDIA LIMITED	
		KEI INDUSTRIES LTD	
		KRISHNA ELECTRICAL INDUSTRIES LTD	
		KEC INTERNATIONAL LIMITED	
		MANSFIELD CABLES COMPANY LTD	
		PARAMOUNT COMMUNICATIONS LTD	
		POLYCAB WIRES PVT. LTD	
		RAVIN CABLES LIMITED	
		SUYOG ELECTRICALS LTD	
		SPECIAL CABLES PVT. LTD	
		SCOT INNOVATION WIRES AND CABLES PVT. LTD	
		SRIRAM CABLES PVT. LTD	
		TORRENT CABLES LTD	
		THERMO CABLES LTD	
		TIRUPATI PLASTOMATICS PVT. LTD	
23.	XLPE CONTROL CABLES	APAR INDUSTRIES LTD	
		CABLE CORPORATION OF INDIA LTD	
		CRYSTAL CABLE INDUSTRIES LTD	
		DIAMOND POWER INFRASTRUCTURE LTD	
		GEMSCAB INDUSTRIES LTD	
		HAVELLS INDIA LIMITED	
		KEI INDUSTRIES LTD	
		KRISHNA ELECTRICAL INDUSTRIES LTD	
		KEC INTERNATIONAL LIMITED	
		PARAMOUNT COMMUNICATIONS LTD	
		POLYCAB WIRES PVT. LTD	
		RADIANT CORPORATION PRIVATE LIMITED	
		RAVIN CABLES LIMITED	
		SUYOG ELECTRICALS LTD	
		SRIRAM CABLES PVT. LTD	
		TORRENT CABLES LTD	
		UNIVERSAL CABLES LTD	
		COMMET	
		SUNIL&CO	
		ARUP ENGINEERING	

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24.	CABLE GLAND	JAINSON	
		ELECTROMAC INDUSTRIES	
		INCAB	
		BALIGA LIGHTING EQPT.PVT.LTD	
		DOWELL	
25.	PUSH BUTTONS	SIEMENS	
		L&T	
		BCH	
		SCHNEIDER	
26.	LIMIT SWITCHES	SPEED-O-CONTROL	
		OMEGA	
		ELECTROMAG	
27.	MASTER CONTROLLER	SPEED-O-CONTROL	
		ELECTROMAG	
28.	SAFETY SWITCHES	ALSTOM	
		L&T	
		SCHNEIDER	
		ABB	
		SIEMENS	
29.	PENDENT PUSH BUTTON STATION	OEM	
30.	INDICATING LAMPS	TECKNIC	
		BCH	
		SIEMENS	
		STANDARD	
31.	MCB	MDS	
		INDO COPP	
		STANDARD	
		SIEMENS	
		L&T	
		ABB	
		S&S POWER SWITCHGEAR LTD,	
		SCHNEIDER	
32.	PANELS	OEM	
		RITTAL	
		BCH	
		PYROTECH	
33.	RESISTANCE	ENAPROS	
		SOC	

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	BOXES	EMM	
		OEM	
34.	FIRE EXTINGUISHERS	ASKA EQUIPMENTS LTD.	
		ASHOKA ENGINEERING COMPANY	
		KANADIA FYR FYTER PVT. LTD	
		NITIN FIRE PROTECTION INDUSTRIES LTD	
		NEW ENGINEERING CORPORATION	
		SAFEX FIRE SERVICES LTD	
		UNITED FIRE EQUIPMENTS PVT. LTD	
		ZENITH FIRE SERVICES (INDIA) PVT LTD	
		BIS APPROVED SOURCE WITH VALID LICENSE	
35.	VVVF	L&T -YASKAWA	
		ABB	
		SIEMENS	
		SCHNIEDER	
		FUJI ELECTRIC	
		ROCKWELL	
		VACON	
		mitsubishi electric	
36.	SHROUDED DSL	SUSHEEL	
		STROMAG	
37.	ANTI COLLISION DEVICE	SICK	
		IFM	
		ELECTRONIC SWITCHES INDIA	
38.	LOAD CELL	IPA	
		METTLER TOLEDO	
		SARTORIUS	
39.	RRC	ACROPOLIS ENGINEERING	
		HBC	
		SOC	
		SNT CONTROLS	
40.	GEAR BOX	OEM	* = Applicable for Geared Motors only
		ELECON ENGINEERS	
		SHANTI GEARS	
		PBL*	
		NAW*	
		NORD*	
		SEW*	
41.	RAIL	BONGFILIOLI*	
		JSPL	
		SAIL	

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42	CENTRALIZED LUBRICATION / HYDRAULIC POWER PACK	LUBCON, PUNE	CRANE OEM MAKE POWERPACK IS NOT ALLOWED.
		PRAKASH LUBRICANT, KOLKATA	
		AFMC, KOLKATA	
		SKF ENGG AND LUBRICATION (LINCOLN HELIOS	
		VIJAY ENGINEERS	
		INDO HYDRAULIC BOMBAY PVT LTD	
		MEHATA HYDRAULIC EQUIPMENT	
		CLAYSYS	
		VEDNAT ENGINEERING SERVICES	
		ELECTROPNEUMATICS AND HYDRAULIC PVT LT	
		SN HYDRAULIC	
43	MCCB/MPCB	L&T	
		ABB	
		SIEMENS	
		SCHNIEDER	
44	SINGLE PHASE PREVENTOR	MINILEC	
		L&T	
		SIEMENS	
45	Drag Chain	IGUS/Reputed make	
46	CONTROL SWITCHES/ SELECTOR SWITCH	KAYCEE	
		GE-POWER	
		ALSTOM LTD	
		SCHNEIDER ELECTRICINDIA PVT. LTD.	
		M/s Shrenik & Co.	
		RECOM PVT. LTD.	
47	AUXILIARY RELAYS	ABB	
		ALSTOM LTD	
		JYOTI LTD.	
		OEN INDIA LTD	
		SIEMENS	
48	BIMETAL RELAYS	L&T	
		GE-POWER	
		SIEMENS	
		TELEMECHANIQUE/ SCHNEIDER ELECTRIC INDIA	
49	CABLE CLAMPS & CABLE TIES	ELECTROMAC IND.CORPN.	
		INCAB	
		NOVOFLEX MARKETING PVT. LTD.	
50	GI CONDUITS	BIS APPROVED MAKE	

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51	GI CONDUIT (EPOXY PAINTED)	BIS APPROVED MAKE	
52	FLEXIBLE CONDUITS (LEAD COATED)	PLICA INDIA PVT. LTD.	
53	FLEXIBLE CONDUIT (PVC COATED)	REPUTED MAKE	
54	CONTROL SWITCHES/ SELECTOR SWITCH	KAYCEE	
		GE-POWER	
		ALSTOM LTD	
		SCHNEIDER ELECTRIC INDIA PVT. LTD.	
		M/s Shrenik & Co.	
55	FUSE BASE	RECOM PVT. LTD.	
		INDO ASIAN	
		GE-POWER	
		L&T	
		C&S ELECTRIC LTD.	
		SIEMENS	
		ABB	
		SPACEAGE SWITCHGEARS LTD.	
		SCHNEIDER ELECTRIC INDIA PVT. LTD.	
56	MODULAR SWITCH BOARD	ALSTOM LTD	
		ESSEN DEINKI	
		ANCHOR	
57	SWITCH BOX	ELEXPRO ELECTRICALS PVT/ LTD.	
		HAVELLS INDIA LIMITED	
		ANCHOR	
		ELEXPRO ELECTRICALS PVT/ LTD.	
		BAJAJ ELECTRICALS	
	Note:	AJMERA INDUSTRIES & ENGG. WORKS	
		S.B. ELECTRICAL ENGINEERING CORPORATION	
1	THE SUB VENDOR LIST ABOVE IS INDICATIVE ONLY AND IS SUBJECT TO BHEL AND DVC APPROVAL DURING DETAILED ENGINEERING STAGE WITHOUT ANY COMMERCIAL & DELIVERY IMPLICATION TO BHEL		
2	BIDDER TO PROPOSE SUB VENDOR WITHIN 4 WEEKS OF PLACEMENT OF LOI. THEREAFTER NO REQUEST FOR ADDITIONAL SUB-VENDOR SHALL BE ENTERTAINED.		
3	THE INSPECTION CATEGORY WILL BE INTIMATED AFTER AWARD OF CONTRACT BY BHEL/CUSTOMER. HOWEVER THE SAME WILL BE ADHERED BY THE BIDDER WITHOUT ANY COMMERCIAL AND DELIVERY IMPLICATION TO BHEL / DVC		

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PAINTING REQUIREMENT

Crane	Condition	Surface Preparation	Primer Coat	No. of Coats	DFT (in Microns)	Intermedia te Coat (in Microns)	No. of Coats	No. of Coats	No. of Coats	No. of Coats	No. of Coats	No. of Coats
BC BAY BFP HANDLING DOUBLE GIRDER EOT CRANE	STEEL STRUCTURE	Surface preparation: Shot blast cleaning/ abrasive blast cleaning to SA21/2 (near white metal) 35-50 microns.	Inorganic Zinc Phosphate. (epoxy based)	1	40 µm per coat.	Epoxy base Tio2 pigmented coat	1 coat	40 µm per coat	Epoxy based finish coat/Two pack polyurethane coat	2 coat	35 µm. per coat	150µ
CWPH DOUBLE GIRDER EOT CRANE AND HEAVY MATERIAL STORE CRANE	STEEL STRUCTURE	Surface preparation: Shot blast cleaning/ abrasive blast cleaning to SA21/2 (near white metal) 35-50 microns.	Inorganic Zinc Phosphate. (epoxy based)	1	75 µm per coat.	Epoxy base Tio2 pigmented coat	1 coat	75 µm per coat	Epoxy base paint - 2 coats, DFT 35 µm per coat. Final coat of paint : Aliphatic Acrylic Polyurethane CDE134, %V=40.0(min.) : 1 coat.	2 +1 coat	2 x 35 + 1 x 30 µm = 100µm	250µ
DOUBLE GIRDER EOT CRANE	For Indoor components such as motors, electrical parts etc	Epoxy based with suitable additives. The thickness of finish coat shall be minimum 50 microns (minimum total DFT shall be 100 microns). However in case electrostatic process of painting is offered for any electrical equipment, minimum paint thickness of 50 microns shall be acceptable for finish coat.										

COLOR SHADE				
SL. No	Item Description	Color Shade		Remarks
1	Crane Structure	Golden Yellow shade 356 as per IS-5		Colour band-Black
2	Trolley and hook	Golden Yellow shade 356 as per IS-5		
3	Motors	RAL 5012 (Blue)		
4	Control Panels	RAL 9002 for front & rear and RAL 5012 for side		

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PACKING REQUIREMENT

	COMMON GUIDELINES FOR PACKING
1	GENERAL:
1.1	The Components/Assemblies need to be packed suitably to avoid physical damage & corrosion during transit & storage. This packing shall be suitable for different handling operations and for the adverse conditions during transportation and during indoor / outdoor storage of materials.
1.2	All the equipment shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at site till the time of erection. The Contractor shall be responsible for all loss or damage during transportation, handling and storage due to improper packing.
1.3	The identification marking indicating the name and address of the consignee shall be clearly marked in indelible ink on two opposite sides and top of each of the packages. In addition the Contractor shall include in the marking gross and net weight, outer dimension and cubic measurement.
1.4	Each package shall be accompanied by a packing note quoting specifically the name of the Contractor, the number and date of contract and names of the office placing the contract, nomenclature of contents and Bill of Material.

2.	TYPES OF PACKING:
	The following 5 types of packing have been standardized for packing of General Components/ Assemblies.
a	OP' - Open Type.
b	PP' - Partially Packed.
c	CP' – Crate/Box Packing - Components/Equipment requiring physical protection.
d	'CQ' - Case Packing – Machined components-Small & Medium Components/ Assemblies/ Equipment which require corrosion & physical protection.
e	'CR' - Case Packing – Electrical/Electronic Components/ Assemblies, which require special packing viz. Water Proof, Shock Proof etc...

3.	DESCRIPTION OF TYPES OF PACKING:
	The various types of packing, as standardized above, are described below.

3.1	'OP' - Open Type					
	In case, of components which are not affected by water & dust and do not require special protection, are generally not machined, shall be sent as open packages. However, these components may be sent in crates, wherever necessary.					

3.2	PP' - Partially Packed
3.2.1	Components which need special protection at selected portions only shall be despatched partially packed. Machined surfaces should not be allowed to come directly in contact with the wood. Such surfaces should be protected with 100GSM(Colourless) Multi Layered Cross Laminated Polyethylene
3.2.2	Film. All sharp corners and edges shall be protected by rubber mats to prevent damage to the polyethylene film.

3.3	'CP' - Crate Packing	
	Assemblies/Components which need only physical protection from the point of view of handling shall be despatched duly packed in crates.	

3.4	'CQ' - Case Packing - Machined Components/Assemblies/Equipment
3.4.1	Small and medium sized components/assemblies/equipment due to size/weight and to avoid handling and pilferage problems shall be packed in Case/Containers. Wherever required adequate quantity of silica gel or VCI Powder/Tablets, packed in thin muslin cloth cotton bags shall be suitably placed. Small machines/components of less weight shall be provided with suitable cushioning by Rubberised coir. The components inside the case shall be entirely covered with 100GSM(Colourless) Multi Layered Cross Laminated Polyethylene Film, wherever required. This may be prescribed for electronic parts/critical machined components/surfaces.
3.4.2	For mechanical product like valves where motors are separately securely wrapped in polyethylene, the requirement of individual component wrapping shall be exempted.

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3.5	CR' - Case Packing - Electrical & Electronic Components/Assemblies
	Delicate components likely to be damaged e.g. Gauges, Instruments etc. are to be wrapped in waxed paper or polyethylene air bubble film and packed in cartons. Adequate quantity of Silica gel packed in cotton bags of 100grams each are to be suitably placed in the cartons. The cartons shall be entirely covered with 100GSM(Colourless) Multi Layered Cross Laminated Polyethylene Film before being packed in the cases. VCI Powder/Tablets can be used as an alternative to Silica Gel.

4	PREPARATION OF PACKING CASES
4.1	DIMENSIONS:
a)	Thickness of planks for Front, rear, top and bottom sides and binding, jointing battens shall be 25/20mm +2/-3 mm as per applicable drawings of the respective units/manufacturers.
b)	Width of all planks including the tongue shall be more than 125mm and after planing it shall be minimum 100mm.
c)	Minimum number of planks shall be used for a shook.
d)	Horizontal, vertical, diagonal planks shall be given for binding (number of such planks depend on the dimension of panel.
e)	Width of binding planks shall be minimum 100mm.
f)	Distance between any 2 binding planks shall be less than 750mm.
g)	diagonal planks shall be used in between vertical binding planks when distance between inner to inner of vertical planks is more than 750mm
h)	Distance of the outer edges of these planks from the edge of case shall be less than 250mm.
i)	Diagonal planks are not required for top planks and width side, if the width of pallet is less than 750mm.

4.2	HOOP IRON STRIPS
	These are used for strapping the boxes. The width of the strips shall be 19+1mm and thickness 0.6+0.01mm. The material shall be free from rust. If sufficient nailing is done for bigger boxes, strapping need not be done.

4.3	BRACKETS
	These brackets are used for nailing to the corners of cubicle boxes. The brackets shall be of mild steel of thickness min 2mm and width 25+1mm. The brackets shall be of "L" shape, the length of each side being 100+2mm. Two holes shall be provided towards the end of each side for screwing /nailing.

4.4	MULTI LAYERED CROSS LAMINATED POLYTHELENE FILM
	100GSM (Colourless) Multi Layered Cross Laminated Polythelene Film are used to make covers to the jobs individually. The cross lamination gives qualities of extra toughness, together with flexibility and lightness coupled with good weather resistance to ultra violet rays.

4.5	RUBBERISED COIR:
	The rubberized coir is used as cushioning material. For the packing of loose items, items are to be arrested by using rubberized coir. For the packing of cubicles rubberized coir of thickness 25mm and width 75mm shall be used.

5	MULTI LAYER CROSS LAMINATED POLY FILM WHILE PACKING OF CUBICLES/CASING
5.1	The inner surface of 4 sides of shook's shall be nailed with Multi-layer cross laminated poly film (as per 4.4) using blue nails wherever 2 pieces of Cross laminated poly film are used, the joint shall have an overlap of minimum 20mm.
5.2	The inner surface of top cover shall be nailed with Multi-layer cross laminated poly film. This sheet shall project outside on 4 sides by at least 100mm and shall be nailed properly on sides. Joining of sheets should have overlap of minimum 20mm.
5.3	The cubicles shall be covered with Multi-layer cross laminated poly film.

6	PACKING OF LOOSE ITEMS/SPARES
6.1	Inner surfaces of all 6 sides shall be lined with Multi Layered Cross Laminated Polythelene Film (as per clause 5.4) using blue nails.
6.2	Rubberized coir of minimum 25mm thickness and 100 mm width shall be nailed to inner surfaces of bottom and 4 sides of box.
6.3	Internal packing: Items that go into the box shall be packed using 100GSM, (Colourless) Multi Layered Cross Laminated Polyethylene Film. Any space left between the job and the sides and the top of the box shall be filled with rubberized coir to get proper cushioning effect.
6.4	Certain items like transformers, reactors, breakers, etc., shall be bolted to the bottom of the box using bolts, nuts and washers.
6.5	Silica gel held in cotton bags shall be kept at proper places in the box.
6.6	Packing slip kept in polyethylene bag shall be placed in the box.

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6.7	Two numbers of hoop iron strips shall be strapped tightly on the case using clips.	
6.8	Stencil marking of various details and marking of various symbols shall be done as per BHEL instructions using indelible/non-washable marking ink.	
6.9	Loose items to be kept inside the cubicle/casing	
	- Other items which are given loose in addition to cubicle shall be packed in separate boxes.	

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7	TYPICAL PATTERN OF WOODEN BOX
---	-------------------------------

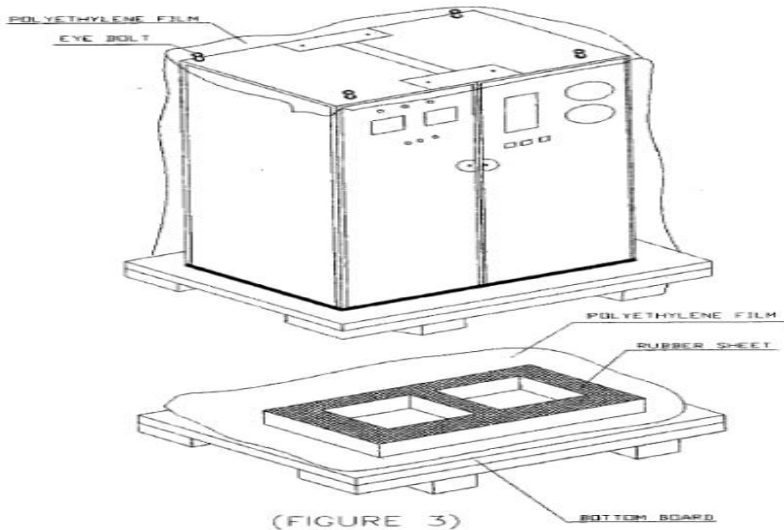


Figure 2

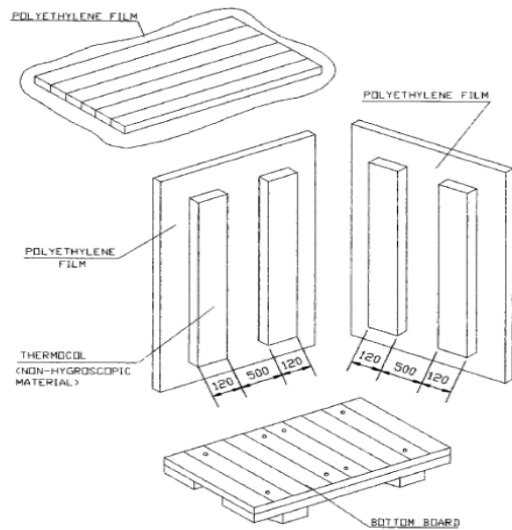


Figure 1

8	SEALED PACKING:
	Components sub-assemblies and assemblies sensitive to climatic conditions shall be packed seal tight. All the openings of the sensitive components, sub-assemblies and assemblies shall be blanketed to prevent the ingress of dust and moisture. The components sub-assemblies and assemblies are completely covered with 2 layers of polyethylene sheet. All sharp corners and edges are to be protected by rubber mats to prevent the polyethylene sheet from damage. Top surface of the case shall be free from dents to prevent rain water pockets.
9	MARKINGS/STENCILINGS
9.1	"HANDLE WITH CARE", "FRAGILE DO NOT TURN OVER".
9.2	Besides the caution signs the product information's shall be stencilled of letters with 13mm to 50mm height.
9.3	In case of consignment consists of more than one package, each package shall carry its package no as given in shipping list. All caution signs shall be stencilled in high quality full glossy out door finishing paint red in colour (AA56126). All other markings shall be carried out in black enamel.
9.4	Caution signs & other markings shall be stencilled on both the end shooks & the side shooks.
9.5	Caution sign (for slinging) shall be stencilled only on side shooks at the appropriate place.
9.6	In case the size of package is small for using the stencils, then hand written letters/figures shall be allowed.

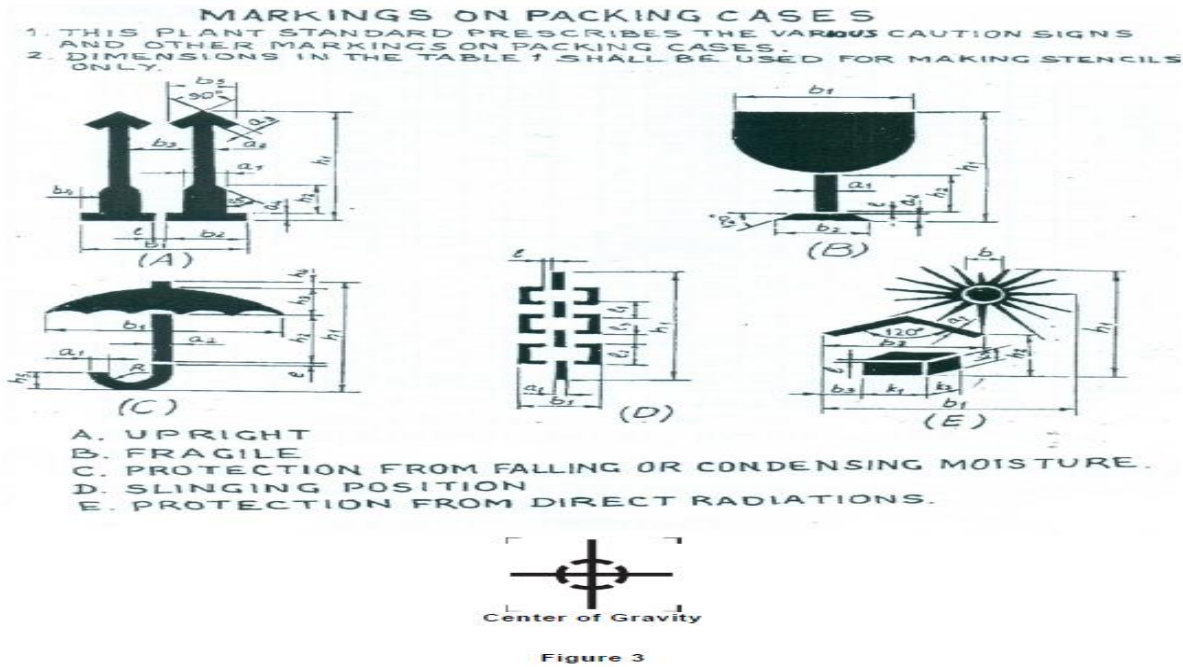


Figure 3

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BHEL – <unit> - <location> - <pin>					
CONSIGNEE					
MATERIAL					
CUSTOMER REF.				MO. NO.	
DESPATCH ADVICE NOTE NO				CASE NO	
DIMENSIONS(MM) L x B x H				NET WT –KGS	GROSS WT –KGS
SPECIAL INSTRUCTIONS	HANDLE WITH CARE - KEEP DRY DO NOT DROP - DO NOT TILT				

Figure 4 – TYPICAL MARKING PLATE (225 X 170)



Figure 5

Easy spares [Initial and O&M] Traceability and Identification at units and as well as at sites:

10 STANDARD METHOD OF PACKING

Table 1 - Standard Method of Packing						
S. No.	DESCRIPTION	CASE	CRATE	BUNDLE	BARE	DRUM
1	FAB STRUCTURALS, GIRDER				O	
2	FAB STRUCTURALS, GIRDER				O	
3	SUPPORTING STRUCTURALS				O	
4	STRUCTURE SUB ASSEMBLY, CRAB, END CARRIAGE, END STOPPERS, ROPE DRUM				O	
5	RAIL				O	
6	STAIR CASES				O	
7	HANDRAILS/ PLATFORMS/ LADDERS/ CAGE				O	
8	FASTENERS, RAIL CLAMPS AND FIXING ACCESSORIES	O				
9	BEARING BLOCKS	O				
10	FANS	O				
11	GASKETS	O	O			
12	FLANGES	O	O			
13	PAINT TINS		O			
14	PAINT DRUMS					O
15	MOTORS, TRANSFORMERS, VVFD, LIMIT SWITCHES, ELECTRIC HOIST ASSEMBLY, RELAYS, FUSES, LIGHTING FIXTURES, PENDANT, ISOLATING SWITCH, RRC, TRANSMITTERS AND OTHER ELECTRICAL ACCESORIES	O				
16	SWITCH BOARDS, DISTRIBUTION BOARDS, STARTERS, JUNCTION BOXES, PANELS,		O			
17	INDICATORS, VIBRATOR SWITCHES	O				
18	CABLE TRAYS, CABLE RACKS, EARTHING MATERIAL,		O			
19	OPERATIONAL SPARES , MAINTENANCE TOOLS AND TACKLES	O				
20	ALL OTHER LOOSE ITEMS	O				

Note
Protective coating applied on machined surfaces should not be disturbed. The plastic covering should be put back carefully so that it prevents ingress of dust and moisture. Some packing may have vapour phase inhibitor (VPI) paper enclosed inside the packing cases. This should be restored to its original place as far as possible.

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**Site Storage and
Preservation Guidelines**

CONTENT

- 1 SCOPE OF THE DOCUMENT
- 2 PURPOSE OF STORAGE & PRESERVATION
- 3 MEASURES TO BE TAKEN FOR STORAGE AND PRESERVATION
 - a) GENERAL STORAGE REQUIREMENTS
 - b) GENERAL PRESERVATION REQUIREMENTS
 - c) GENERAL INSPECTION REQUIREMENTS
- 4 TYPE OF STORAGE FOR VARIOUS EQUIPMENT
5. CONCLUSION
6. STACKING ARRANGEMENT FOR PLATES AND STRUCTURAL STEEL

1. SCOPE OF THE DOCUMENT

This guideline is prepared in intent to provide proper site storage and preservation of the Mechanical, Electrical and C & I items / equipment supplied under various bought out packages/items. This storage procedure shall be followed at different power plant sites by concerned agency for storage and preservation from the date of equipment received at site until the same are erected and handed over to the customer.

2. PURPOSE OF STORAGE & PRESERVATION

Many of the items may be required to be kept in stores for long period. It shall therefore be essential that proper methods of storage and preservation be applied so that items do not deteriorate, loose some of their properties and become unusable due to atmospheric conditions and biological elements.

3. MEASURES TO BE TAKEN FOR STORAGE, HANDLING & PRESERVATION

a) GENERAL STORAGE REQUIREMENTS

1. To the extent feasible, materials should be stored near the point of erection. The storage areas should have adequate unloading and handling facilities with adequate passage space for movement of material handling equipment such as cranes, fork lift trucks, etc. The storage of materials shall be properly planned to minimise time loss during retrieval of items required for erection.
2. The outdoor storage areas as well as semi-closed stores shall be provided with adequate drainage facilities to prevent water logging. Adequacy of these facilities shall be checked prior to monsoon.
3. The storage sheds shall be built in conformity with fire safety requirements. The stores shall be provided with adequate lights and fire extinguishers. 'No smoking' signs shall be placed at strategic locations. Safety precautions shall be strictly enforced.
4. Adequate lighting facility shall be provided in storage areas and storage sheds and security personnel positioned to ensure enforcement of security measures to prevent theft and loss of materials.
5. Adequate number of competent stores personnel and security staff shall be deployed to efficiently store and maintain the equipment / material.
7. The equipment shall be stored in an orderly manner, preserving their identification slips, tags and instruction booklets, etc., required during erection. The storage of materials shall be equipment-wise. Loose parts shall be stored in sheds on racks,

preserving the identification marks and tags in good condition. The group codes shall be displayed on the racks

6. At no time shall any materials be stored directly on ground. All materials shall be stored minimum 200 mm above the ground preferably on wooden sleepers

b) GENERAL PRESERVATION REQUIREMENTS

1. All special measures to prevent corrosion shall be taken like keeping material in dry condition, avoiding the equipment coming in contact with corrosive fluid like water, acid etc.
2. Materials which carry protective coating shall not be wrapped in paper, cloth, etc., as these are liable to absorb and retain moisture. The material shall be inspected and in case of signs of wear or damages to protective coating, that portion shall be cleaned with approved solution and coated with an approved protective paint. Complete record of all such observations and protective measures taken shall be maintained.
3. Generally equipment supplied at site are properly greased or rust protective oil is applied on machined/ fabricated components. However periodic inspection shall be carried out to ensure that protection offered is intact.
4. While handling the equipment, no dragging on the ground is permitted. Avoid using wire rope for lifting coated components. Use polyester slings (if possible) otherwise protective material (e.g. clothes, wood block etc.) should be used while handling the components with rope / slings
5. For Equipment supplied with finished paint, touch paint shall be done in case any surface paint gets peeled off during handling. Otherwise such surfaces shall necessarily be wrapped with polythene to avoid any corrosion. Further for equipment wherein finish coat is to be applied at site, site to ensure that equipment is received with primer coat applied.
6. It shall be ensured by periodic inspection that plastic inserts are intact in tapped holes, wherever applicable.
7. Pipes shall be blown with air periodically and it shall be ensured that there is no obstruction.
8. Silica gel or approved equivalent moisture absorbing material in small cotton bags shall be placed and tied at various points on the equipment, wherever necessary.
9. Heavy rotating parts in assembled conditions shall be periodically rotated to prevent corrosion/jamming due to prolonged storage.

10. All the electrical equipment such as motors, generators, etc. shall be tested for insulation resistance at least once in three months and a record of such measured insulation values shall be maintained.
11. Following preservatives/preservation methods can be used depending upon type of equipment
 - a. Rust preventive fluid (RPF)
 - b. Rust protective paints
 - c. Tarpaulin covers, in case of outdoor storage
 - d. De-oxy aluminate for weld-ments

c) GENERAL INSPECTION REQUIREMENTS

1. Period inspection of materials with specific reference to –
 - Ingress of moisture and corrosion damages.
 - Damage to protective coating.
 - Open ends in pipes, vessels and equipment -
 - In case any open ends are noticed, same shall be capped.
2. Any damages to equipment / materials.
 - In case of any damages, these shall be promptly notified and in all cases, the repairs / rectification shall be carried out.
 - Any items found damaged or not suitable as per project requirements shall be removed from site. If required to store temporarily, they shall be clearly marked and stored separately to prevent any inadvertent use.

4. TYPE OF STORAGE FOR VARIOUS EQUIPMENT

The types of storage are broadly classified under the following heads:

i **Closed storage with dry and dust free atmosphere. (C)**

The closed shed can be constructed by using cold-rolled / tubular components for structure and corrugated asbestos sheets / galvanised iron sheets for roofing. Brick walls / asbestos sheets can be used to cover all the sides. The floor of the shed can be finished with plain cement concrete suitably glazed. The shed shall be provided with proper ventilation and illumination.



ii **Semi-closed storage. (S)**

The semi closed shed can be constructed by using cold-rolled / tubular components for structure and corrugated / asbestos sheets for roofing. The floor shall be brick paved. If required a small portion of sides can be covered to protect components from rainwater splashing onto the components.





iii Open storage (O)

The open yard shall be levelled, well consolidated to achieve raised ground with the provision of feeder roads for crane approach along with access roads running all sides. One part of the open yard shall be stone pitched, levelled and consolidated with raised ground suitable for storing / stacking heavier and critical components with due space to handle them by cranes etc . Adequate number of sleepers, concrete block etc. to be provided to make raised platforms to stack critical materials.

A separate yard to be identified as “scrap yard” slightly away from main open yard to store wooden/steel scraps, which are to be disposed off. This is required to avoid mix up with regular components as well as to avoid fire hazard.

Some of the components, which are having both machined & un-machined surfaces and are bulky, shall be stored in open storage area on a raised ground and suitably covered with water proof / fire retardant tarpaulin.



The equipment listed below shall be stored and inspected as per requirement mentioned in the table below.

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
Raw material /mechanical items like pipes, plates, structure sections etc.)				
1.	Steel pipes (lined/unlined)	S	Damage , paint, corrosion, rubber lining peeling	Provide end cap
2.	MS Plates	S	Damage, paint, corrosion	
3.	SS Plates	S	Damage	
4.	Non-metallic pipes	S	Damage, cracks	Provide end cap
5.	Stainless steel pipes	S	Damage ,	Provide end cap
6.	MS sections, beams	S	Damage, paint, corrosion	
7.	Cable trays	S	Damage, condition of preservations	
8.	Insulation sheets	S	Damage	
9.	Insulation	C	Damage, packing	
10.	Hangers Rods	S	Damage, paint, packing	
11.	Tubes	S	Damage, paint , packing	Provide end cap
12.	Hume pipes	O	Damage	
13.	Castings	O	Damage, paint, corrosion	
Fabricated mechanical items (pressure vessels, tanks etc.)				
14.	Pressure vessels (unlined)	O	Damage, paint, corrosion,	Covered nozzles
15.	Atmospheric storage tanks (unlined)	O	Damage, paint, corrosion	Covered nozzles

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
16.	Pressure vessels (lined)	S	Damage, paint, corrosion, rubber lining	
17.	Atmospheric storage tanks(lined)	S	Damage, paint, corrosion, rubber lining	
18.	Support structures	O	Damage , paint, corrosion	
19.	Flanges	C	Damage , paint, corrosion	
20.	Fabricated pipes	S	Damage , paint, corrosion	Provide end cap
21.	Vessels internals	C	Damage , paint, corrosion ,packing	
22.	Grills	S	Damage , paint, corrosion	
23.	Angles	S	Damage , paint, corrosion	
24.	Bridge mechanism/clarifier mechanism	O	Damage , paint, corrosion	
25.	Cranes, rails	S	Damage , paint, corrosion	
26.	Stair cases	O	Damage , paint, corrosion	
27.	Ladders/handrails	O	Damage , paint, corrosion	
28.	Fabricated ducts	S	Damage , paint, corrosion	
29.	Isolation Gates	O	Damage , paint, corrosion	
30.	Fabricated boxes/panels	S	Damage , paint, corrosion	
Mechanical components like valves, fittings, cables glands, spares etc.)				
31.	Valves	S	Damage , packing	

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
32.	Fittings	S	Damage , packing	Provide end cap
33.	Cable glands	C	Damage , packing	
34.	Tools & tackles	C	Damage , packing	
35.	Nut , bolts, washers,	C	Damage , packing	
36.	Gasket & Packings	C	Damage , packing	
37.	Copper tubes	C	Damage , packing, corrosion	Provide end cap
38.	SS tubing	C	Damage , packing	Provide end cap
Rotating assemblies (pumps, blowers, stirrers, fans, compressors etc.)				
39.	Pumps	S	Damage , packing, corrosion	Shaft rotation
40.	Blowers/Compressors	S	Damage , packing, corrosion	Shaft rotation
41.	Agitators/stirrers/radial launders	C	Damage , packing, corrosion	Shaft rotation
42.	Rollers for chlorine tonner mounting	C	Damage , packing, corrosion	
43.	Centrifuge	S	Damage , packing,	
44.	Gear box	C	Damage , packing, corrosion	
45.	Bearings	C	Damage , packing, corrosion	
46.	Fans	S	Damage , packing, corrosion	
47.	Dosing skids	S	Damage , packing, corrosion	
48.	Pump assemblies	S	Damage , packing, corrosion	
49.	Air washers(INTERNALS)	S	Damage , packing	
50.	Air conditioners (split)	C	Damage , packing	

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
51.	Elevators(CONTAINERIZED)	O	Damage , packing, corrosion	
52.	Chillers/VA machines	S	Damage , packing	
53.	Air handling Unit/Package unit	S	Damage , packing	
54.	Chlorinators & Evaporators	C	Damage , packing	
55.	Ejectors	C	Damage , packing	
56.	Electrolyser	C	Damage , packing	
Miscellaneous items like chain pulley blocks, hoists etc.				
57.	Chain pulley blocks	S	Damage, Packing	
58.	Electric hoists	S	Damage, Packing	
59.	Fire extinguishers	C	Damage, expiry date	
60.	Fork Lift Truck	S	Damage, Packing	
61.	Hydraulic Mobile Crane	O	Damage, Packing	
62.	Mobile Pick Up & Carry Crane	O	Damage, Packing	
63.	Motor boats	O	Damage, Packing	
64.	Safety showers	S	Damage, Packing	
65.	Diffusers/dampers	S	Damage, Packing	
Chemicals and consumables (acid, alkali, paints, oils, reagents and special chemicals)				
66.	Hydro Chloric Acid (HCl)	Store in canes/ storage tank in dyke area	Date of production/ leakage/fumes	hazardous chemical
67.	Sulphuric acid (H ₂ SO ₄)	Store in canes/ storage tank in dyke area	Date of production/ leakage/fumes	hazardous chemical

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
68.	Sodium hydroxide (NaOH)	Store in canes/ storage tank in dyke area	Date of production/ leakage/ fumes/ breather	hazardous chemical ,breather to be checked for air ingress
69.	Sodium hypo chlorite	To be stored under shed	Date of production/ leakage/ fumes	hazardous chemical ,self-life normally 15-30 days after which strength of chemical decays
70.	Ammonia	S	Date of production/ leakage/ fumes	Store in closed storage tanks, hazardous chemical
71.	CW treatment chemicals	S	Date of production , Self-life	Store in closed canes
72.	RO/UF cleaning chemicals	S	Date of production , Self-life	Store in closed canes
73.	Lime	C	Damage to packing , seepage	Prevent moisture, rain
74.	Alum bricks	C	Damage to packing	Prevent moisture, rain
75.	Poly electrolyte	S		Store in closed storage tanks
76.	Laboratory chemicals(powder)	C	Damage, Packing self- life	
77.	Laboratory chemicals(liquid)	C	Damage, Packing self- life	
78.	Lubrication oils	C	Leakage	
79.	Paints	S	Leakage ,air tightness	
80.	Sand	O	Damage of packing	No hooks
81.	Salt (NaCl)	C	Damage of packing, water ingress	Prevent moisture, rain
82.	Anthracite	S	Damage of packing	
83.	Activated carbon	S	Damage of packing	

Sl. No.	Description of the equipment	Type of Storage	Check for	Remarks
84.	Thermal insulation	S	Damage of packing	
85.	Cement	C	Damage of packing	Prevent moisture, rain
86.	Gravels	O	Damage of packing	
87.	ION exchange resins	C	Damage , packing	Refer manufacturer guidelines
88.	RO membranes	C	Damage , packing	Refer manufacturer guidelines
89.	UF membranes	C	Damage , packing	Refer manufacturer guidelines
90.	Cleaning chemicals	C	Damage , packing	Refer manufacturer guidelines
91.	Chemicals for analysers/calibration	C	Damage , packing	Refer manufacturer guidelines
Electrical and C & I items (motors, cables etc.)				
92.	Motors	C	Damage , packing	
93.	Cable drums	O	Damage	
94.	Control Panel /control desk, UPS ,JB	S	Damage, Packing	
95.	Instruments(gauges/analysers)	C	Damage	
Special items		As per Manufacturer's item, like Hydrogen cylinders, Ozonator, Analyser, Chlorine dioxide generators etc.		

5. CONCLUSION

Concerned storage agency at site should make sure that loss in equipment performance and wear & tear are minimised through proper storage and preservation. The above are broad guidelines and cover major equipment / materials. However specific storage practices shall be followed as per manufacturer recommendation. All the necessary measures even in addition to the ones mentioned above, if found necessary, should be taken to achieve the objective.

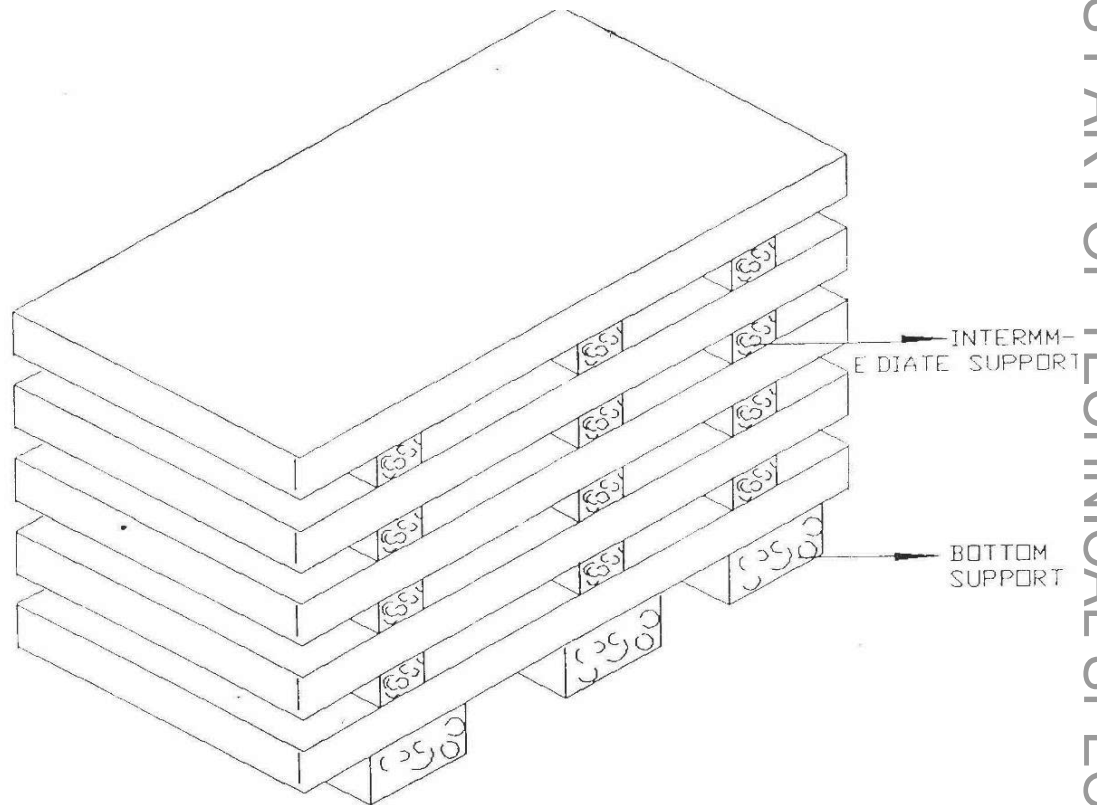


Figure – 1 – PLATE STACKING ARRANGEMENT

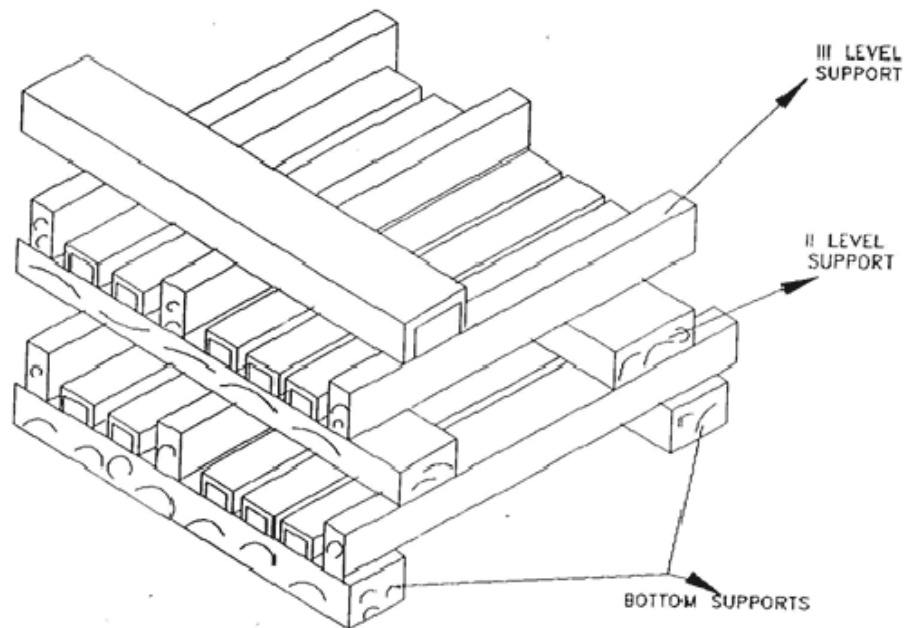


Figure – 2 – STRUCTURAL STEEL STACKING ARRANGEMENT

बी एच ई एल BHEL		TECHNICAL SPECIFICATION 2X800MW DVC KODERMA TPS PHASE II DOUBLE GIRDER EOT CRANES FOR UPTO 100T CAPACITY						PE-TS-519-501-A001					
								Rev. No. 00					
								Date : Sept 2025					
		BILL OF QUANTITY											
A	SUPPLY:												
	S. No.	Description	75T BC Bay BFP handling Double Girder crane 1		75T BC Bay BFP handling Double Girder crane 2		50T CWPB Double Girder crane with 2T EH		30T Heavy Material store Double Girder crane		Common for all Double Girder cranes		
			Qty	UOM	Qty	UOM	Qty	UOM	Qty	UOM	Qty	UOM	
	1	Bridge girders along with walkway, platform, handrails, CT stoppers etc.	2	Nos.	2	Nos.	2	Nos.	2	Nos.	----	----	
	2	End carriages											
	a	End carriages structure with walkway, platform, handrails, LT buffers etc.	1	set	1	set	1	set	1	set	----	----	
	b	Long Travel Mechanism (Motor, gear box, shaft couling, wheels, brakes, bearings etc.)	1	set	1	set	1	set	1	set	----	----	
	3	Crab (trolley)											
	a.	Crab (trolley) structure with CT rails, platform, handrails, CT buffers etc.	1	set	1	set	1	set	1	set	----	----	
	b	Main Hoist Mechanism (Motor, Gear box, Rope drum, Rope Upper block, Lower block, hook, couplings, shaft, brakes, bearings etc.)	1	set	1	set	1	set	1	set	----	----	
	c.	Aux Hoist Mechanism (Motor, Gear box, Rope drum, Rope Upper block, Lower block, hook, couplings, shaft, bearings, brakes etc.)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	d.	Cross Travel Mechanism (Motor, gear box, shaft couling, wheels, brakes, bearings etc.)	1	set	1	set	1	set	1	set	----	----	
	4	LT End stopper	4	Nos.	4	Nos.	4	Nos.	4	Nos.	----	----	
	5	Storm Brake	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	6	LT rail along with accessories	2x42.5	m	2x42.5	m	2x57	m	2x41	m	----	----	
	7	LT PVC insulated shrouded bus bar conductor type DSL with accessories and junction boxes as required	42.5	m	42.5	m	57	m	41	m	----	----	
	8	Operator's cabin along with operator's seat, gong, fan and other accesories	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	9	Main hoist limit switch (Rotory gar + Gravity)	1+1	Nos.	1+1	Nos.	1+1	Nos.	1+1	Nos.	----	----	
	10	Aux hoist limit switch (Rotory gar + Gravity)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	11	CT lever type limit switch (one way/two way)	2/1	Nos./No.	2/1	Nos./No.	2/1	Nos./No.	2/1	Nos./No.	----	----	
	12	LT lever type limit switch (one way/two way)	2/1	Nos./No.	2/1	Nos./No.	2/1	Nos./No.	2/1	Nos./No.	----	----	
	13	Power cables, control cables etc. along with cable tray/conduits etc.	1	set	1	set	1	set	1	set	----	----	

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	14	Temporary cable: 3.5 Core Power copper flexible cable of suitable size as per load calculation for commissioning, testing & operation of EOT Crane till such time the DSL is charged.	NA	NA	NA	NA	NA	NA	NA	NA	NA
	15	Main Isolating switch	1	No.	1	No.	1	No.	1	No.	----
	16	Protective Panel along with Control transformers, lighting transformers, 415/24 V (DC) transformer, contactors, switches, fuses relays and other	1	No.	1	No.	1	No.	1	No.	----
	17	Main Hoist Panel along with VVFD, contactors, switches, fuses relays and other accessories	1	No.	1	No.	1	No.	1	No.	----
	18	Aux Hoist Panel along with VVFD, contactors, switches, fuses relays and other accessories	NA	NA	NA	NA	NA	NA	NA	NA	NA
	19	Cross Travel Panel along with VVFD, contactors, switches, fuses relays and other accessories	1	No.	1	No.	1	No.	1	No.	----
	20	Long Travel Panel along with VVFD, contactors, switches, fuses relays and other accessories	1	No.	1	No.	1	No.	1	No.	----
	21	Master Controller	NA	NA	NA	NA	NA	NA	NA	NA	NA
	22	Lighting for cranes (including illumination in cabin (if applicable), over bridge and under bridge) along with	1	set	1	set	1	set	1	set	----
	23	Portable 40 W hand lamp with minimum half of baylength length flexible cable for inspection	1	set	1	set	1	set	1	set	----
	24	Fire extinguisher	1	No.	1	No.	1	No.	1	No.	----
	25	Maintenance cage	1	No.	1	No.	1	No.	1	No.	----
	26	Mechanical overload protection (Load cell) for hoist mode with digital display	1	No.	1	No.	1	No.	1	No.	----
	27	Radio Remote control with transmitter unit, receiver unit, batterg etc.	1	set	1	set	1	set	1	set	----
	28	Additional isolating switches for maintenance of cranes	NA	NA	NA	NA	NA	NA	NA	NA	NA
	29	Lifting beam & its slings	NA	NA	NA	NA	NA	NA	NA	NA	NA
	30	Anti collision device	NA	NA	NA	NA	NA	NA	NA	NA	NA
	31	Centralized grease lubrication system to be provided with hand pumps located at crab and both end carriages for all grease lubricated bearings of crane.	1	set	1	set	1	set	1	set	----
	32	DSL Phase indicating lamps (RYB)	2	Sets	2	Sets	2	Sets	2	Sets	----
	33	Earthing strips	1	set	1	set	1	set	1	set	----
	34	First fill of lubricants i.e. oils, grease, servo fluids, cadmium compounds etc. till one year after commissioning	1	set	1	set	1	set	1	set	----
	35	E-Learning Package	1 set common for both BC Bay handling crane				----	----	----	----	----

		TECHNICAL SPECIFICATION 2X800MW DVC KODERMA TPS PHASE II DOUBLE GIRDER EOT CRANES FOR UPTO 100T CAPACITY					PE-TS-519-501-A001 Rev. No. 00 Date : Sept 2025					
	36	Load testing sling, cradles and any other item required by the vendor during the load testing at site on returnable basis	----	----	----	----	----	----	----	----	1	set
	38	Electric hoist including panel, trailing cable/DSL, hoisting limit switch, brakes, wire rope, cross travel limit switch, VVVF drive etc.	NA	NA	NA	NA	1	set	NA	NA	NA	NA
	39	Maintenance tools & tackles										
	a.	Complete set of ring spanners	1	set	1	set	1	set	1	set	----	----
	b.	Complete set of screwdrivers (Min. 6 Nos., Indicate the sizes)	1	set	1	set	1	set	1	set	----	----
	c.	Adjustable Spanner	1	no.	1	no.	1	no.	1	no.	----	----
	d.	Insulated plier	1	no.	1	no.	1	no.	1	no.	----	----
	e.	Wrench spanner	1	no.	1	no.	1	no.	1	no.	----	----
	f.	Grease Gun	1	no.	1	no.	1	no.	1	no.	----	----
	g.	Oil Gun.	1	no.	1	no.	1	no.	1	no.	----	----
	h.	Hand Lamp.	1	no.	1	no.	1	no.	1	no.	----	----
	i.	Line tester	1	no.	1	no.	1	no.	1	no.	----	----
	j.	O&M Manual	1	no.	1	no.	1	no.	1	no.	----	----
	k.	Steel box to place above tools & manual	1	no.	1	no.	1	no.	1	no.	----	----
	40	Erection & Commissioning Spares (to be supplied as per requirement)	1	set	1	set	1	set	1	set	----	----
	41	Any other item/s for completion of scope of work	1	set	1	set	1	set	1	set	----	----

		TECHNICAL SPECIFICATION 2X800MW DVC KODERMA TPS PHASE II DOUBLE GIRDER EOT CRANES FOR UPTO 100T CAPACITY				PE-TS-519-501-A001		
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B	MANDATORY SPARES:		Qty for both 75T BC Bay BFP handling Double Girder cranes		50T CWPB Double Girder crane		30T Heavy Material store Double Girder crane	
	S. NO.	ITEM DESCRIPTION	Qty	UOM	Qty	UOM	Qty	UOM
	1.1	Mechanical:						
	(a)	Bearings for long travel wheels	1 Set (Requirement for one Crane)		-----	-----		
	(b)	Bearings for cross travel wheels	1 Set (Requirement for one Crane)					
	(c)	Bearings for Gear Boxes for each type of Hoist & travel (Main and aux hoist(if applicable), LT and CT travel))	1 Set (Requirement for one Crane)					
	(d)	Brake Liner for all the brakes (main and aux hoist(if applicable), LT and CT travel))	2 Sets (Requirement for two Crane)					
	(e)	Hydraulic thruster for all Brakes (Main and aux hoist (if applicable), CT and LT travel)	1 Set (Requirement for one Crane)					
	(f)	Oil Seals (both main and aux hoist (if applicable), CT and LT)	2 Sets (Requirement for two Crane)					
	(g)	Brake springs for all brakes (both main and aux hoist (if applicable), LT and CT travel)	1 Set (Requirement for one Crane)					
	(h)	Wire Rope for Main Hook	1	No.				
	1.2	Electrical:						
	i)	Solenoid Coils for Brakes	2	sets				
	ii)	MCBs/MCCBS/Fuse links for the whole crane	1	set				
	iii)	Contactors and overload Relays of each type, size & rating for Motors of the EOT	1	set				
	iv)	Timers of each type, size & rating	1	set				
	v)	Limit Switches for						
	a	Main Hoist	1	set				
	b	Aux. Hoist	1	set				
	c	Cross Travel	1	set				
	d	Long Travel	1	set				
	vi)	Master Controller for Aux. Hoist	1 set each					
	vii)	Drive for MH, AH, CT & LT of each tpe and rating	1	No.				

बी एच ई एल BHEL		TECHNICAL SPECIFICATION 2X800MW DVC KODERMA TPS PHASE II DOUBLE GIRDER EOT CRANES FOR UPTO 100T CAPACITY						PE-TS-519-501-A001					
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1.3	MECHANICAL		----										
i)	Bearings for long travel wheels	----							----	----	----	1	set
ii)	Bearings for cross travel wheels	----							----	----	----	1	set
iii)	Brake liners for all the Brakes	----							----	----	----	1	set
iv)	Hydraulic thrusters for Brakes	----							----	----	----	1	set
v)	Wire rope for Crane	----							----	----	----	1	length
vi)	Bearings for hoist	----							----	----	----	1	set
vii)	Electrical Items of Crane	----							----	----	----		
a	Carbon brushes and brush holders for motors	----							----	----	----	1 set of each rating/Size	
b	Solenoid coils for all brakes	----							----	----	----	1 set of each rating/Size	
c	Contactors and Overload relays for motors	----							----	----	----	1 set of each rating/Size	
d	Set of MCB/MCCB/fuses/Fuse links for the whole crane	----							----	----	----	1	set
e.	Limit switches for main hoist, long travel & Cross travel	----							----	----	----	1	set
f.	Motors of the EOT	----							----	----	----	1no. of each type, size & rating	
g.	Timers of each type, size & rating	----							----	----	----	1	set
h.	Master Controller for Aux. Hoist,	----							----	----	----	1	set
i.	Resistance Box	----							----	----	----	1 No of each type	
j.	Overload relays for motors	----							----	----	----	1	set
viii)	Mono-rail Hoist Assembly	----							----	----	----		
a	Bearings	----							----	----	----	1	set
b	Brake liners for all the Brakes	----							----	----	----	1	set
c	Wire rope for Hoist	----							----	----	----	1	length
d	Electrical Items of monorail hoist												
d.1	Solenoid coils for all brakes	----							----	----	----	1	set
d.2	Overload relays for motors	----							----	----	----	1	set
d.3	Limit switches	----							----	----	----	1	set
d.4	Motors	----							----	----	----	1no. of each type, size & rating	
C	SERVICES		75T BC Bay BFP handling Double Girder crane 1		75T BC Bay BFP handling Double Girder crane 2		50T CWPB Double Girder crane		30T Heavy Material store Double Girder crane				
i)	Unloading, handling, transportation to site.		1	set	1	set	1	set	1	set			
ii)	Assembly, erection & commissioning including Performance guarantee tests at site.		1	set	1	set	1	set	1	set			
iii)	Final handing over to Customer		1	set	1	set	1	set	1	set			

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DOCUMENTATION REQUIREMENT

DRAWINGS & DOCUMENTS TO BE SUBMITTED BY ALL THE BIDDERS ALONG WITH THE BID	
Sl. No.	DOCUMENT TITLE
1	PQR CREDENTIALS
2	COMPLIANCE SHEET
3	"NO DEVIATION" CERTIFICATE DULY STAMPED AND SIGNED.

DRAWINGS & DOCUMENTS TO BE SUBMITTED BY SUCCESSFUL BIDDER AFTER AWARD OF CONTRACT ALONG WITH SUBMISSION SCHEDULE				
S.N.	BHEL drawing No.	Title	Approval category	Schedule date of submission (in weeks from date of LOA)
BASIC ENGINEERING DRAWING / DOCUMENTS				
1	PE-V0-519-501-A401	Manufacturing Quality Plan with sub vendor list For Double Girder EOT cranes upto 100T	A	3
2	PE-V0-519-501-A404	Mechanism Sizing Calculation Including storm brake calculation for Double Girder EOT cranes upto 100T	A	3
3	PE-V0-519-501-A405	General arrangement for Double Girder EOT cranes upto 100T with CT DSL details	A	3
4	PE-V0-519-501-A412	Structural calculations For Double Girder EOT cranes upto 100T (including structural calculation for crab structure)	I	4
5	PE-V0-519-501-A417	"Schematic circuit diagram of a) Protective panel, Main and lighting circuit & BOM b) Main hoist panel & BOM c) Aux. hoist panel & BOM d) Cross Traverse & BOM e) Long Traverse & BOM Including earthing diagram For Double Girder EOT cranes upto 100T"	A	5
BALANCE ENGINEERING DRAWING / DOCUMENTS				
1	PE-V0-519-501-A403	Data sheet of motors for Double Girder EOT cranes upto 100T	I	6
2	PE-V0-519-501-A406	Crab sub assembly for Double Girder EOT cranes upto 100T with CT wheel assembly	A	3
3	PE-V0-519-501-A408	General arrangement for PVC shrouded DSL for Double Girder EOT cranes upto 100T	I	6
4	PE-V0-519-501-A409	Main and Auxiliary hook block assembly with details of hook, nut and check plate Double Girder EOT cranes upto 100T	I	3
5	PE-V0-519-501-A410	Long travel Machinery Assembly with LT wheel assembly For Double Girder EOT cranes upto 100T	I	4
6	PE-V0-519-501-A432	Gantry Rail installation for Double Girder EOT cranes upto 100T	A	4

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7	PE-V0-519-501-A414	O & M Manual For Double Girder EOT cranes upto 100T	A	12
8	PE-V0-519-501-A427	Data sheet of Double Girder EOT cranes upto 100T with painting details	A	8
9	PE-V0-519-501-A418	General Arrangement of a) Protective panel, b) Main hoist panel c) Aux. hoist panel d) Cross Travel panel e) Long Traverse travel panel f) Pendant g) Remote Radio Control For Double Girder EOT cranes upto 100T	A	5
10	PE-V0-519-501-A419	Cable Sizing and cable schedule For Double Girder EOT cranes upto 100T	A	6
11	PE-V0-519-501-A450	Crane lubrication drawing For Double Girder EOT cranes upto 100T	I	6
C	Bidder to submit following additional document also.			
1	PE-V0-519-501-A423	Mandatory spare parts list For Double Girder EOT cranes upto 100T	A	16
2	PE-V0-519-501-A425	Erection procedure For Double Girder EOT cranes upto 100T	I	8
3	PE-V0-519-501-A420	Crane Operational write up For Double Girder EOT cranes upto 100T	I	5
4	PE-V0-519-501-A430	Electrical load for Double Girder EOT cranes upto 100T	I	8
5	PE-V0-519-501-A460	Field Quality Plan	I	20
6	PE-V0-519-501-A421	Type test certificate (for motors) For Double Girder EOT cranes upto 100T (Applicable for above 100 KW rating motors)	A	10
7	PE-V0-519-501-AXXX	Any other documents if required during detail engineering	-	-
LEGENDS				
A= Approval category				
I= Information category				

Notes:-

1	Bidder to follow the following the drawing submission schedule: i) 1st submission of drawings from date of LOA as per the submission schedule. ii. Every revised submission incorporating comments – within 10 days. iii. BHEL & Customer Comment/ Approval -18 days
2	Bidder to submit revised drawings complete in all respects incorporating all comments. Any incomplete drawing submitted shall be treated as non-submission with delays attributable to bidder's account. For any clarification/ discussion required to complete the drawings, the bidder shall himself depute his personal to BHEL for across the table discussions/ finalizations/ submissions of drawings.

DRAWINGS & DOCUMENTS TO BE SUBMITTED AS FINAL/AS-BUILT DOCUMENT

Sl. No.	DOCUMENT TITLE	No. of hard copy prints (sets)	No. of portable hard disk
1	APPROVED DOCUMENTS	6	2
2	AS BUILT DRAWINGS/ DOCUMENTS	6	2
3	ERECTION MANUAL	6	2
4	O&M MANUAL	6	2
5	PERFORMANCE AND FURNITIONAL GUARANTEE TEST REPORTS	6	0



**TECHNICAL SPECIFICATION
2X800MW DVC KODERMA TPS PHASE II
DOUBLE GIRDER EOT CRANES
FOR UPTO 100T CAPACITY**

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COMPLIANCE CERTIFICATE

The bidder shall confirm compliance with following by signing / stamping this compliance certificate (every sheet) and furnish same with the offer.

1	The scope of supply, technical details, construction features, design parameters etc. shall be as per technical specification & there are no exclusions, other than those mentioned under exclusion.
2	Bidder shall submit Manufacturing Quality Plan(MQP) in the event of order based on the guidelines given in the specification & reference MQP enclosed therein. MQP will be subject to BHEL / CUSTOMER approval & customer hold points for inspection / testing and additional inspection requirement, if any shall be marked in the MQP at the contract stage. Inspection / testing shall be witnessed as per same apart from review of various test certificates/ Inspection records etc. This is within the contracted price without any extra implications to BHEL after award of the contract.
3	All drawings/ data-sheets / calculations etc. submitted along with the offer shall not be taken cognizance off.
4	The offered materials shall be either equivalent or superior to those specified in the specification & shall meet the specified / intended duty requirements. In case the material specified in the specifications is not compatible for intended duty requirements then same shall be resolved by the bidder with BHEL during the pre-bid discussions, otherwise BHEL / Customer's decision shall be binding on the bidder whenever the deficiency is pointed out. For components where materials are not specified, same shall be suitable for intended duty, all materials shall be subject to approval in the event of order.
5	All sub vendors shall be subject to BHEL / CUSTOMER approval in the event of order.
6	Guarantee for plant/ equipment shall be as per relevant clause of GCC / SCC / Other Commercial Terms & Conditions.
7	In the event of order, all the material required for completing the job at site shall be supplied by the bidder within the ordered price even if the same are additional to approved billing break up, approved drawing or approved Bill of quantities within the scope of work as tender specification. This clause will apply in case during site commissioning, additional requirements emerges due to customer and / or consultant's comments. No extra claims shall be put on this account.
8	Schedule of drawings submissions, comment incorporations & approval shall be as stipulated in the specifications. The successful bidder shall depute his design personnel to BHEL's / Customer's / Consultant's office for across the table resolution of issues and to get documents approved in the stipulated time.
9	As built drawings shall be submitted as and when required during the project execution.

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10	The bidder has not tempered with this compliance cum confirmation certificate and if at any stage any tempering in the signed copy of this document is noticed then same shall be treated as breach of contract and suitable actions shall be taken against the bidder.		
11	Document approval by customer under Approval category or information category shall not absolve the vendor of their contractual obligations of completing the work as per specification requirement. Any deviation from specified requirement shall be reported by the vendor in writing and require written approval. Unless any change in specified requirement has been brought out by the vendor during detail engineering in writing while submitting the document to customer for approval, approved document (with implicit deviation) will not be cited as a reason for not following the specification requirement.		
12	In case vendor submits revised drawing after approval of the corresponding drawing, any delay in approval of revised drawing shall be to vendor's account and shall not be used as a reason for extension in contract completion.		

Signature of authorised Representative

Name and Designation :

Name & Address of the Bidder

Date

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PRE QUALIFICATION REQUIREMENT (TECHNICAL)			
1	The Bidder should have designed, manufactured, erected and commissioned Double Girder EOT/Gantry/Semi-Gantry crane of minimum 30T capacity with span of 10 Metres or more and having/ability to have in house facility for testing of Double girder EOT crane with actual capacity required for the tender.		
2	The Bidder has to submit following supporting documents meeting above mentioned prequalifying requirement Copy of minimum one (1) performance certificate (in English) from end user along with copy of related Purchase Order (PO) or Letter of intent (LOI) or Letter of Award (LOA) or Work Order (WO) specifying that the product/equipment is running successfully for one (1) year from date of commissioning meeting the minimum pre-qualifying requirement.		
3	Bidder shall submit design documents to substantiate technical parameters specified in clause 1 & 2 above, if the same is not mentioned in performance certificate/purchase order		
Note			
a	Bidder to submit all supporting documents in English. If documents submitted by bidder are in language other than English, a self-attested English translated document should also be submitted.		
b	Minimum one (1) no. Purchase order shall be submitted which should not be more than seven (7) years old as on date of bid submission, for establishing continuity in business.		
c	Notwithstanding anything stated above, BHEL/CUSTOMER reserves the right for physical assessment of the capabilities and capacity of the bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of BHEL/CUSTOMER. Bidder to furnish details as per Annexure A- "Sub-Vendor Questionnaire".		
d	Consideration of offer shall be subject to Customer's approval of bidders, if applicable.		
e	After satisfactory fulfilment of all the above criteria/ requirement, offer shall be considered for further evaluation as per NIT and all the other terms of the tender.		

CORPORATE QUALITY ASSURANCE

SUB-VENDOR QUESTIONNAIRE

i.	Item/Scope of Sub-contracting		
ii.	Address of the registered office 	Details of Contact Person (Name, Designation, Mobile, Email) 	
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured 	Details of Contact Person: (Name, Designation, Mobile, Email) 	
iv.	Annual Production Capacity for proposed item/scope of sub-contracting		
v.	Annual production for last 3 years for proposed item/scope of sub-contracting		
vi.	Details of proposed works		
1.	Year of establishment of present works		
2.	Year of commencement of manufacturing at above works		
3.	Details of change in Works address in past (if any)		
4.	Total Area		
	Covered Area		
5.	Factory Registration Certificate	Details attached at Annexure – F2.1	
6.	Design/ Research & development set-up (No. of manpower, their qualification, machines & tools employed etc.)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design) Details attached at Annexure – F2.2 (if applicable)	
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc.)-	Details attached at Annexure – F2.3	
8.	After sales service set up in India, in case of foreign sub-vendor (Location, Contact Person, Contact details etc.)	Applicable / Not applicable Details attached at Annexure – F2.4	
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any	Details attached at Annexure – F2.5	
10.	Sources of Raw Material/Major Bought Out Item	Details attached at Annexure – F2.6	
11.	Quality Control exercised during receipt of raw material/BOI, in-process, Final Testing, packing	Details attached at Annexure – F2.7	
12.	Manufacturing facilities	Details attached at Annexure – F2.8	

CORPORATE QUALITY ASSURANCE

SUB-VENDOR QUESTIONNAIRE

	<i>(List of machines, special process facilities, material handling etc.)</i>					
13.	Testing facilities <i>(List of testing equipment)</i>			Details attached at Annexure – F2.9 & Details of load testing facility of Work/s to be submitted in Annexure B		
14.	If manufacturing process involves fabrication then-			Applicable / Not applicable		
	List of qualified Welders			Details attached at Annexure – F2.10		
	List of qualified NDT personnel with area of specialization			(if applicable)		
15.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses			Applicable / Not applicable Details attached at Annexure. –F2.11 (if applicable)		
16.	Supply reference list including recent supplies			Details attached at Annexure – F2.12 (as per format given below)		
Project/ package	Customer Name	Supplied Item (Type/Rating/Model /Capacity/Size etc)		PO ref no/date	Supplied Quantity	Date of Supply
17.	Product satisfactory performance feedback letter/certificates/End User Feedback			Attached at annexure - F2.13		
18.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) Note:- Reports need not to be submitted			Applicable / Not applicable Details attached at Annexure – F2.14 (if applicable)		
19.	Statutory / mandatory certification for the proposed product			Applicable / Not applicable Details attached at Annexure – F2.15 (if applicable)		
20.	Copy of ISO 9001 certificate (if available)			Attached at Annexure – F2.16		
21.	Product technical catalogues for proposed item (if available)			Details attached at Annexure – F2.17		
Name:		Desig:		Sign:		Date:

Company's Seal/Stamp:-

Details of Testing facility of Work/s

Annexure -B

Details of Testing facility of works

Annexure - B

PACKAGE	DOUBLE GIRDER EOT CRANES UPTO 100T			
Bidder name				
Bidder works address				
S. NO.	FACILITY	DETAILS REQUIRED	DATA TO BE FURNISHED	REMARKS
1 a)	Handling facilities in the test bay/ shop	Number & capacity of cranes available		Layout drawing of the testing / bay shed to be furnished.
1 b)		Maximum capacity of load that can be handled with shed/testing bay cranes handle (individually or in tandem)		
1 c)		Clear height from floor level to the Hook level of the crane of testing bay/ shed		
2 a)	Stand/frame for supporting the crane bridge girders during load/ overload testing of crane at works	Number of stands available		Documentary proof i.e previous load testing report of similar capacity and span or structural calculations for justifying the load bearing capacity of the crane.
2 b)		Load bearing capacity of each stand		
2 c)		Height of stand		
3 a)	Load Pit	Dimensions		Pit drawing/photograph to be furnished.
3 b)		Maximum capacity of the load that can be accomodated in load pit		Calculations / drawing to be furnished for justification of maximum load claimed to be accomodated in the avaiable test pit dimensions.
4 a)	Calibrated Dead Load	Maximum dead load (calibrated) along with cradle available		In case of unavailability of sufficient calibrated dead load, whether supplier makes any alternate arrangement i.e type of dead load, availabilty of suitable capacity load cells with display etc
4 b)		Dimensions		Dimensions of individual load block, as available, to be furnished.
Note: Details of testing facility shall be submitted for justification of capability of testing.				

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PRE QUALIFICATION REQUIREMENT (FINANCIAL)



PRE - QUALIFYING REQUIREMENTS

PROJECT: 2 X 800 MW DVC KODERMA

PACKAGE: D/G EOT CRANES UP TO 100T

CRITERIA FOR EVALUATION - FINANCIAL :

	Amount (in Rs.)
Average annual financial turnover value during any three out of last six Financial Years as on tender due date should not be less than	71,00,000

Rs. Seventy One Lakh only

Notes:-

a) The bidder has to submit financial accounts (audited, if applicable comprising of Audit report, Balance Sheet, Profit & Loss A/c Statement and Notes/Schedules pertaining to Turnover/Sales/Revenue), for any three out of last six Financial Years (or from the date of incorporation, whichever is less) as on tender due date to review the above criteria. In case the incorporation of vendor is less than 3 years, average annual financial turnover shall be calculated based on available information as below:-

i) If the accounts are available for ≤ 1 Financial Year, the Average Annual Turnover shall be calculated based on available information divided by 1 (One).

ii) If the accounts are available for >1 but ≤ 2 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 2 (Two).

iii) If the accounts are available for >2 but ≤ 3 Financial Years, the Average Annual Turnover shall be calculated based on available information divided by 3 (Three).

b) Foreign bidder is to submit a latest report from reputed third party business rating agency like Dun & Bradstreet, Credit reform etc. in addition to the documents mentioned at point (a) above for review of above criteria.

c) Other Income shall not be considered for arriving at Annual Turnover/Sales. For evaluation purpose, turnover figure excluding taxes shall be considered.

d) For evaluation of foreign bidder, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered.

e) Bidder who is 50% or above subsidiary of any other company including those registered outside India and does not meet any of the above Financial Criteria, such bidder may be qualified based on credentials of its holding company provided such holding company meets the above PQR criteria. In such case, the Bidder would be required to furnish a Letter of Support from its Holding Company, pledging unconditional and irrevocable financial support for the execution of the Contract by the Bidder in case of award.

f) In cases where audited results for the last financial year as on the date of Techno Commercial bid opening are not available, a Certificate would be required from CEO/CFO stating that the financial results of the Company are under audit as on the date of Techno-commercial bid opening and are not available.

PRICE ADJUSTMENT FORMULA FOR MAIN SUPPLY FOR DOUBLE GIRDER EOT CRANES UPTO 100T
PACAKGE FOR 2X800MW DVC KODERMA TPS PHASE II

- (1) The price adjustment formula is defined for price components related to Main Supply package.
- (2) The amount of price adjustment shall be computed as under:

$$EC = EC1 - EC0$$

EC1 will be computed as follows:

$$EC1 = EC0 \times \{F + a \times (0.8 \times A_1 / A_0 + 0.2 \times B_1 / B_0) + L_b \times L_1 / L_0\}$$

Where

EC = Adjustment in Ex-Works supply Price.

EC1 = Adjusted Amount of Ex-Works supply Price.

EC0 = Ex-Works supply Price as per LOA/PO.

- (i) 'F' shall be fixed portion of the Ex-Works supply price and shall be considered as 0.15.
- (ii) 'a' shall be co-efficient which shall be considered as 0.55
- (iii) 'A₁' & 'A₀' shall be Wholesale Price Index for "MANUFACTURE OF BASIC METALS" as published in RBI Bulletin 21, Sl.no. 1.3.14, Base: 2011-12 = 100
- (iv) 'B₁' & 'B₀' shall be Wholesale Price Index for "MANUFACTURE OF ELECTRICAL EQUIPMENT" as published in RBI Bulletin-21, Sl.no. 1.3.17, Base: 2011-12 = 100
- (v) 'L_b' shall be co-efficient for labour component in the Ex-Works Component of the supply Price which shall be considered as 0.3.
- (vi) (v) 'L₁' & 'L₀' shall be consumer price index for industrial workers as published by RBI in RBI Bulletin 19, S.N. 1, Base year 2016=100 (Extract of website is pasted below for reference).

For the indices,

Subscript '0' refers to indices of Base Month for PVC which shall be taken as the month before the month of the price bid opening.

Subscript '1' refers to indices of the month of reckoning the variated price which shall be the month before the month in which dispatch is made.

The latest available indices are to be extrapolated to the above defined month wrt the base month.

Source link of RBI bulletin: https://rbi.org.in/Scripts/BS_ViewBulletin.aspx

Note:

- 1) The price adjustment i.e. either increase or decrease shall be applicable up to the contractual date of completion of supplies. Contractual delivery/dispatch date would mean the delivery/dispatch date mentioned in the order including amendments in delivery/dispatch date (if any). PVC will not be applicable for the period beyond the contractual delivery/dispatch date where delay is attributable to supplier.
- 2) The price adjustment shall be limited to (+) 10% of Ex-Works Price. There is no ceiling on negative PVC.

**PRICE ADJUSTMENT FORMULA FOR SERVICE PART (E & C) FOR DOUBLE GIRDER EOT
CRANES UPTO 100T PACAKGE FOR 2X800MW DVC KODERMA TPS PHASE II**

- (1) The price adjustment formula is defined for price components related to Service part (E&C) as per price break-up furnished by the Contractor.
- (2) The amount of price adjustment shall be computed as under:

$$ER = ER1 - ER0$$

ER1 will be computed as follows:

$$ER1 = ER0 \times \{F + Lb \times L_1 / L_0\}$$

Where

ER = Adjustment in Service part (E&C Prices, without taxes & duties).

ER1 = Adjusted Amount of Service part (E&C Prices, without taxes & duties).

ER0 = Service part (E&C Prices, without taxes & duties) as per LOA/PO.

(i) 'F' shall be fixed component and shall be considered as 0.15.

(ii) 'Lb' shall be co-efficient for labour component in the Ex-Works Component of the service part price which shall be considered as 0.85

(vii) 'L' shall be consumer price index for industrial workers as published by RBI in RBI Bulletin 19, S.N. 1, Base year 2016=100 (Extract of website is pasted below for reference).

(viii) For the indices,

Subscript '0' refers to indices of Base Month for PVC which shall be taken as the month before the month of the price bid opening.

Subscript '1' refers to indices of the month of reckoning the varied price which shall be the month before the month in which Service part (E&C) is carried out.

The latest available indices are to be extrapolated to the above defined month wrt the base month.

Source link of RBI bulletin: https://rbi.org.in/Scripts/BS_ViewBulletin.aspx

Note:

- 1) The price adjustment i.e. either increase or decrease shall be applicable up to the contractual date of completion of work. Contractual work completion date would mean the Completion date mentioned in the order including amendments in work completion date (if any). PVC will not be applicable for the period beyond the contractual work completion date where delay is attributable to supplier.
- 2) The price adjustment shall be limited to (+) 10% of Service part (E&C Prices, without taxes & duties). There is no ceiling on negative PVC.

**PRICE ADJUSTMENT FORMULA FOR MANDATORY SPARES PORTION FOR DOUBLE GIRDER
EOT CRANES UPTO 100T PACAKGE FOR 2X800MW DVC KODERMA TPS PHASE II**

- (1) The price adjustment formula is defined for price components related to Mandatory Spares Portion.
- (2) The amount of price adjustment shall be computed as under:

$$EC = EC1 - EC0$$

EC1 will be computed as follows:

$$EC1 = EC0 \{F + a \times A1bco / A0bco + Lb \times L1 / L0\}$$

Where

EC = Adjustment in Ex-Works supply Price.

EC1 = Adjusted Amount of Ex-Works supply Price.

EC0 = Ex-Works supply Price as per LOA.

(i) 'F' shall be fixed portion of the Ex-Works supply Price and shall be considered as 0.15.

(ii) 'a' shall be co-efficient which shall be considered as 0.6

(iii) A1bco & A0bco are as per "ALL COMMODITIES" as published in RBI Bulletin 21, Sl. No. 1 respectively, Base: 2011-12 = 100

(iv) 'Lb' shall be co-efficient for labour component in the Ex-Works Component of the supply Price which shall be considered as 0.25

(v) 'L' shall be consumer price index for industrial workers as published by RBI in RBI Bulletin 19, S.N. 1, Base year 2016=100 (Extract of website is pasted below for reference).

(vi) For the indices,

Subscript '0' refers to indices of the Base Month which shall be taken as the month before the month of the price bid opening.

Subscript '1' refers to indices of the month before the month in which delivery is required to be made as per the Purchase Order or its amendments issued.

The latest available indices are to be extrapolated to the above defined month w.r.t. the base month.

Source link of RBI bulletin: https://rbi.org.in/Scripts/BS_ViewBulletin.aspx

Note:

- 1) The price adjustment i.e. either increase or decrease shall be applicable upto the contractual date of completion of supplies. Contractual delivery/dispatch date would mean the delivery/dispatch date mentioned in the order including amendments in delivery/dispatch date (if any). PVC will not be applicable for the period beyond the contractual delivery/dispatch date where delay is attributable to supplier.
- 2) The price adjustment shall be limited to (+) 10% of Ex-Works Mandatory Spares Price. There is no ceiling on negative PVC.

Annexure-B to NIT

CONCILIATION

Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure as per BHEL Conciliation Scheme 2018. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in - "Procedure for conduct of conciliation proceedings" (as available in www.bhel.com)).

Note: Ministry of Finance has issued OM reference No. 1/2/24 dated 03.06.2024 regarding "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement. In the said OM it has been recommended that Government departments/ Entities/agencies are to encourage mediation under the Mediation Act. 2023. The said Act has not yet been notified by the Government. Therefore, the clause "Settlement of Disputes" shall be modified accordingly as and when the Mediation Act 2023 gets notified.

ARBITRATION

- i. Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 2.21.1 herein above or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, refer the disputes to Arbitral Institution i.e. **"India International Arbitration Centre (IIAC) Delhi" for PSNR & PSER / "Mumbai Centre for International Arbitration (MCIA), Mumbai" for PSWR / "Nani Palkhivala Arbitration Centre (NPAC) Chennai" for PSSR** and such dispute to be adjudicated by Sole Arbitrator appointed in accordance with the Rules of said Arbitral Institution.
- ii. A party willing to commence arbitration proceeding shall invoke Arbitration Clause by giving notice to the other party in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice') before referring the matter to arbitral institution. The Notice shall be addressed to the **Head of the Region, Power Sector/ Unit, BHEL, executing the Contract** and shall contain the particulars of all claims to be referred to arbitration with sufficient detail and shall also indicate the monetary amount of such claim including interest, if any.
- iii. After expiry of 30 days from the date of receipt of aforesaid notice, the party invoking the Arbitration shall submit that dispute to the Arbitral Institutions and that dispute shall be adjudicated in accordance with their respective Arbitration Rules. The matter shall be adjudicated by a Sole Arbitrator who shall necessarily be a Retd. Judge having considerable experience in commercial matters to be appointed/nominated by the respective institution. The cost/expenses pertaining to the said Arbitration shall also be governed in accordance with the Rules of the respective Arbitral Institution. The decision of the party invoking the Arbitration for reference of dispute to a specific Arbitral institution for adjudication of that dispute shall be final and binding on both the parties and shall not be subject to any change thereafter. The institution once selected at the time of invocation of dispute shall remain unchanged.
- iv. The fee and expenses shall be borne by the parties as per the Arbitral Institutional rules.

- v. The Arbitration proceedings shall be in English language and the seat and venue of Arbitration shall be Delhi for PSNR/ Kolkata for PSER/ Nagpur for PSWR/ Chennai for PSSR.
- vi. Subject to the above, the provisions of Arbitration & Conciliation Act 1996 and any amendment thereof shall be applicable. All matters relating to this Contract and arising out of invocation of Arbitration clause are subject to the exclusive jurisdiction of the Court(s) situated at Delhi for PSNR/ Kolkata for PSER/ Nagpur for PSWR/ Chennai for PSSR.
- vii. Notwithstanding any reference to the Designated Engineer or Conciliation or Arbitration herein, a. the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree. Settlement of Dispute clause cannot be invoked by the Contractor, if the Contract has been mutually closed or 'No Demand Certificate' has been furnished by the Contractor or any Settlement Agreement has been signed between the Employer and the Contractor.
- viii. The Mechanism of resolution of disputes through arbitration shall be available only in the cases where the value of the dispute is less than Rs. 10 Crores.
- ix. In case the disputed amount (Claim, Counter claim including interest is Rs. 10 crores and above, the parties shall be within their rights to take recourse to remedies other than Arbitration, as may be available to them under the applicable laws after prior intimation to the other party. Subject to the aforesaid conditions, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof as amended from time to time, shall apply to the arbitration proceedings under this clause.
- x. In case, multiple arbitrations are invoked (whether sub-judice or arbitral award passed) by any party to under this contract, then the cumulative value of claims (including interest claimed or awarded) in all such arbitrations shall be taken in account while arriving at the total claim in dispute for the subject contract for the purpose of above clause. Disputes having cumulative value of less than 10 crores shall be resolved through arbitration and any additional dispute shall be adjudicated by the court of competent jurisdiction.

Annexure-C to NIT					
Safety Item List and Rates					
Sl. No.	Name of Safety Item	UOM	Koderma Site		
			Qty	Supply Price	Unit Rate
1	Safety Net (10 Mtr x 5 Mtr)	Nos.	240	₹ 8,19,120	₹ 3,413
2	Rope grab fall arrestor with karbiner	Nos.	200	₹ 2,48,000	₹ 1,240
3	Anchorage Line (30 Mtr)	Nos.	90	₹ 1,53,000	₹ 1,700
4	Anchorage Line (40 Mtr)	Nos.	30	₹ 64,500	₹ 2,150
5	Wire rope (life line)- (25 Mtr)	Nos.	90	₹ 3,88,800	₹ 4,320
6	Wire rope (life line)- (40 Mtr)	Nos.	40	₹ 2,75,760	₹ 6,894
7	Ladder (Vertical)	Nos.	200	₹ 34,00,000	₹ 17,000
8	Full body safety harness double lanyard with shock absorber	Nos.	395	₹ 5,01,650	₹ 1,270
9	Industrial Safety Helmet	Nos.	1575	₹ 3,30,750	₹ 210
10	Industrial Safety Shoes	Nos.	1575	₹ 6,69,375	₹ 425

Construction Power:

1. Construction power (three phase, 415 V/ 440 V) shall be provided by BHEL free of cost at one point near the site at a distance of approx. 500M from the date of start of work. Further, distribution shall be arranged by the contractor at his own cost and services. However, contractor has to deploy DG Sets to meet power requirement in case of delay in availability of single source or any kind of power interruptions during the course of the project at no extra cost to BHEL. 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 shall be responsible for fulfilment of all requirements including statutory requirements in this regard.
2. Contractor shall deploy and install required energy meter, cables, fuses, distribution boards, switchboards, bus bars, earthing arrangements, protection devices and any other installation as specified by statutory authority/act.
3. Sufficient power factor compensation equipment 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.
4. 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.
5. 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.
6. 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 labour, extension of time etc. The Contractor shall adjust his working shift accordingly and deploy additional manpower, if necessary, so as to achieve the target.
7. Contractor to note that till construction power is made available by BHEL; 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.
8. 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.
9. 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.
10. 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

11. 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.

Construction water:

1. BHEL shall provide water supply free of cost (at single point source) for construction purpose. Contractor has to make arrangement of further distribution. However, contractor shall make alternate arrangement of construction water till the same is made available by BHEL.
2. The Contractor should make arrangements for storage of sufficient quantity of water required for work. The agency should also construct sumps (if required) of suitable size for storage of construction water as per their requirement for use in batching plant and construction purposes.
3. Contractor to satisfy himself that the water drawn by him is fit for construction / consumption and adequately treat such water at his cost when it is not found fit for the said purposes.

CORRIGENDUM – 1

TO

GENERAL CONDITIONS OF CONTRACTS

GCC – BOP (Rev No. 00)

wef 14/08/2024



BHARAT HEAVY ELECTRICALS LIMITED

GCC BOP Cl. No.	Existing clause	Read as
Clause no 16.1 of GENERAL COMMERCIAL TERMS & CONDITIONS (Page 15 of 31)	Timely dispatch/delivery and completion of other schedules as stipulated in Order/Contract shall be the essence of Order/Contract. If the Seller/Contractor fails to complete the dispatch/delivery and other schedules within the time period stipulated in Order/Contract, or within any extension of time granted by Purchaser, it shall be lawful for purchaser to recover damages for breach of Order/Contract and hereunder.	Timely dispatch/delivery, Erection & commissioning and completion of other schedules as stipulated in Order/Contract shall be the essence of Order/Contract. If the Seller/Contractor fails to complete the dispatch/delivery, Erection & commissioning and other schedules within the time period stipulated in Order/Contract, or within any extension of time granted by Purchaser, it shall be lawful for purchaser to recover damages for breach of Order/Contract and hereunder.
Clause no 16.2.1 (a) of GENERAL COMMERCIAL TERMS & CONDITIONS (Page 15 of 31)	a) LD on mandatory spares portion where delivery for mandatory spares is defined separately in the NIT. LD shall be applicable @ ½ percent and applicable GST thereon, of the total mandatory spares portion contract value excluding GST per week or part thereof, limiting to 10% of total contract value of mandatory spares excluding GST.	a) LD on mandatory spares - Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages if dispatch/delivery of the mandatory spares is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract and not by way of penalty, a sum equivalent to half (½) percent of the total contract price (mandatory spares) per week or part thereof, limited of ten (10) percent of the total contract price (mandatory spares) excluding GST.
Clause no 16.2.1 (b) of GENERAL COMMERCIAL TERMS & CONDITIONS (Page 16 of 31)	(b) LD on Supply and E&C- Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half (½) percent and applicable GST thereon, of the total contract price (main supply and E&C) excluding GST per week or part thereof, subject to a maximum of ten (10) percent of the total contract price (main supply and E&C) excluding GST, if E&C completion of the package is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract. Liquidated Damages will not be deducted from supply payment for delay in supply. LD on Mandatory spares shall be dealt as per clause (a) above.	(b1) LD on Supply- Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages if dispatch/delivery of the package (Main supply) is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract and not by way of penalty, a sum equivalent to half (½) percent of the total contract price (main supply) per week or part thereof, limited of ten (10) percent of the total contract price (main supply) excluding GST. (b2) LD on E&C- Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages if E&C completion of the package is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract and not by way of penalty, a sum equivalent to half (½) percent of the total contract price (supply+ E&C) per week or part thereof, limited to ten (10) percent of the total contract price (supply + E&C) excluding GST. However, total LD for delay in supply and E&C shall be limited to 10% of total contract price (supply + E&C) excluding GST.

GCC BOP Cl. No.	Existing clause	Read as
Clause no 16.2.1 (c) of GENERAL COMMERCIAL TERMS & CONDITIONS (Page 16 of 31)	c) LD on service portion (PG test, O&M, AMC, etc.) where delivery for services are defined separately in the NIT. LD shall be applicable @ ½ percent and applicable GST thereon, of the total service portion contract value excluding GST per week or part thereof subject to a maximum of ten (10) percent of the total contract value of service portion excluding GST.	c) LD on service portion (PG test, O&M, AMC, etc.) where delivery for services are defined separately in the NIT. LD shall be applicable @ ½ percent of the total service portion contract value per week or part thereof limited to ten (10) percent of the total contract value of service portion excluding GST.
NOTE of clause no. 16.0 of GENERAL COMMERCIAL TERMS & CONDITIONS (Page 16 of 31)	(i) Liquidated Damages will not be deducted from supply payment for delay in supply.	Stands deleted

GENERAL CONDITIONS OF CONTRACTS

GCC – BOP (Rev No. 00)

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BHARAT HEAVY ELECTRICALS LIMITED

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	DEFINITION OF TERMS
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DEFINITION OF TERMS

Throughout the Tender Documents including the Enquiry Letter, the following words shall have the meanings assigned to them herein, unless the subject matter or the context requires otherwise.

- 1 **Purchaser / Buyer** means Bharat Heavy Electricals Limited (the term "Purchaser/Buyer" may hereinafter also be referred to as 'BHEL') incorporated under the Companies Act, 1956 having its registered office at BHEL House, Siri Fort, New Delhi-110049, India and inter alia having a Unit/ Region/ Division at any place in India and abroad The term 'Purchaser/Buyer' shall be deemed to include its successors and assigns.
- 2 **Owner** shall mean the **Customer** or **Client** for whose project the enquiry is issued by Purchaser and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 3 **Consultant** shall mean the agency appointed by Owner or Purchaser to provide consultancy services for the project and shall include its successors and assigns as well as authorized officer(s)/ representative(s).
- 4 **Tenderer** shall mean the Person(s) / HUF/ AOP (Association of Persons)/ Firm / Company / a Joint Venture/ Consortium or any such other Organization/ Enterprise which quotes against the Tender Enquiry issued by **Purchaser/ Buyer**. It may also be referred as **Bidder** or **Vendor**.
- 5 **'Order / Contract'** shall mean and include the **Purchase/ Work Order** along with bid/ tender/ offer, the bidding conditions, clarifications issues by the buyer as regards the tender or the bidding conditions, covering letter, letter of intent / acceptance / award, specific agreement, the General Conditions of Contract and Special Conditions of Contract for commercial conditions of Purchase, specific agreement on technical conditions, special technical conditions and technical conditions/ specifications, Inspection/ Quality Plan, Schedule of Prices and Quantities, Drawings, if any enclosed or to be provided by the Buyer or his authorized nominee, Integrity pact (as and when if applicable), and any subsequent amendments hereto as may be mutually agreed upon, (It may also be referred to as the "Order"). Any conditions or terms stipulated by the bidder in the tender/offer or subsequent letters shall not form part of the Contract unless specifically accepted in writing by BHEL before award of the order. 'Parties to the Contract' shall mean the Seller and the Buyer as named in the main body of the Purchase Order.
- 6 **Seller/ Contractor** shall mean the Firm/ Company/ Organization with whom the Order/ Contract is made and shall be deemed to include its successors, representatives, heirs, executors, administrators and assigns *as agreed between parties to the contract*, as the case may be. It may also be referred as **Supplier or Vendor**.
- 7 **Sub-Contractor/ sub-vendor** shall mean the person/ firm/ company/ organization to whom any part of the work has been sub-contracted by Seller/ Contractor, with the written consent of Purchaser, and shall include sub-contractor's heirs, executors, administrators, representatives and assigns *as agreed between Seller and BHEL*.

Note - The terms used in this document like Tenderer/ Bidder/ Vendor/ Seller/ Contractor/ Supplier can be used interchangeably. In the same way the terms used in this document like Purchaser/Buyer/BHEL can be used interchangeably.

- 8 **Engineer** shall mean the authorized officer of Purchaser to act as the engineer on its behalf for the purpose of the Order/ Contract.
- 9 **Site** shall mean and include the land and place on which the project station related facilities are to be constructed and any adjacent land which may be allocated or used by Owner, *buyer* or Seller/ Contractor in performance of the Order/ Contract.
- 10 **Acceptance Tests** shall mean such tests as prescribed in specifications and/ or tests mutually agreed upon by Purchaser and Seller/ Contractor, to be performed by Seller/ Contractor during the process at vendors'/ sub vendors'

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	DEFINITION OF TERMS
works and after/ <i>during the erection/ commissioning</i> of equipment to establish its satisfactory operation as per specifications. 11 Commissioning shall mean all activities inter alia successful/ satisfactory completion of Initial Operation and readiness of the contracted/ ordered package / plant and materials unit wise/ set wise/ lot wise/ individual sub-system etc. including associated stand by for TRIAL operation. This will include all consumables and inputs required for pre-commissioning. (Refer Annexure-XII) 12 Trial Operation or Reliability Run shall mean continuous integrated operation of the contracted/ ordered package / plant and materials unit wise/ set wise/ lot wise/ individual sub-system etc. Under varying loads as proof of satisfactory operation for a specified period for further beneficial use in power plant/Unit. The procedure to be agreed during detailed engineering (Refer Annexure-XII). 13 Inspection Agency (IA) shall mean person(s) authorized by Purchaser / Owner to inspect the stores as per Order/ Contract at <i>Vendor's/ Contractor's/ Sub-Contractor's</i> works. Vendors to raise inspection call on BHEL – CQS website. 14 Month shall mean calendar month and week shall mean 7 days. 15 Consignee shall mean the official(s)/ person(s) to whom the stores are required to be delivered in the manner indicated in the Order/ Contract. 16 Plant/ Equipment/ Stores shall mean the goods, machinery, components, parts, spares etc. required to be supplied by Seller/ Contractor as per Order/ Contract. 17 Contract Engineer (CE) shall mean the official who signs the Order/ Contract on behalf of Purchaser. 18 Site Engineer shall mean official authorized by owner to receive and verify the in-coming stores, and issue Material Receipt Certificate (MRC)/ Stores Receipt Voucher (SRV). 19 Site Inspection Agency (Site IA) shall mean person(s) authorized by Purchaser/ Owner to inspect the stores/ works included in Order/ Contract at the Project Site. 20 Performance Guarantee Test: A test to be conducted by the vendor and witnessed by owner/ purchaser, as per procedure submitted by the vendor and approved by owner/ purchaser describing the objective of the test, detailed procedures to test the guaranteed parameters, obligations as per the order/ contract, results presentation procedure and verification and acceptance criterion (Refer Annexure-XII) 21 Technical Specification / Specification shall mean the all the Specifications wherein detailed description of the design and materials based on which project is to be delivered by Supplier. 22 Wherever term 'Due date and time' is referred, it implies Indian Standard Time and date. 23 HANDING OVER package wise definition in line with Annexure-XII 24 GENERAL - The words incorporating singular shall include plural and vice-versa, the words incorporating masculine gender shall include feminine gender and vice-versa, and the words incorporating persons shall include bodies, corporate, limited liability companies, partnership and other legal entities.			

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ABBREVIATIONS
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ABBREVIATIONS

AWB	Airway Bill
AMC	Annual Maintenance Contract
BG	Bank Guarantee
BL	Bill of Lading
BOCW	The Building and other Construction Workers (Regulation of Employment & Conditions of Service) Act
BOQ	Bill of Quantity
CAN	Cargo Arrival Notice
C&F/ CFR	Cost and Freight
CFS	Container Freight Station
CIF	Cost, Insurance and Freight
COO	Certificate of Origin
CQ	Corporate Quality
DDP	Delivery Duty Paid
DMS	Document Management System
EMD	Earnest Money Deposit
E&C	Erection and Commissioning
FCA	Free Carrier
FCL	Full Container Load
FIR	First Information Report
FOB	Free on Board
FOR	Free on Rail/ Road
FTL	Full Truck Load
GCC	General Conditions of Contract
GR	Goods Receipt
GST -	CGST/IGST/UTGST Central/ Integrated/ Union Territory Goods and Services Tax
H1 Bidder	Bidder quoting highest cost to BHEL
HSE	Health Safety and Environments Guidelines
HQ/ Hqrs	Headquarter
HUF	Hindu Undivided Family
ICC	International Chamber of Commerce
IGM	Import General Manifest
IP	Integrity Pact
IEM	Independent External Monitor
L1 Bidder	Bidder quoting lowest cost to BHEL
LC	Letter of Credit
LD	Liquidated Damages
LOA / LOI	Letter of Award / Letter of Intent
LR	Lorry Receipt
MCE	Marine cum Erection

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ABBREVIATIONS
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MDCC	Material Dispatch Clearance Certificate
MRC	Material Receipt Certificate
MSMED	Micro Small and Medium Enterprises Development
NCR	National Capital Region
NIT	Notice Inviting Tender
NND	Non Negotiable Document
OBL	Ocean Bill of Lading
O&M	Operation & Maintenance
ORC	Over run charges
PBG	Performance Bank Guarantee
PEM	Project Engineering Management
P&ID	Process & Instrumentation Diagram
PO	Purchase Order
PQR	Pre-Qualification Requirement
PTL	Part Truck Load
PVC	Price Variation Clause
QA	Quality Assurance
QS	Quality Surveillance
RA	Reverse Auction
RBI	Reserve Bank of India
RFQ	Request for Quotation
RR	Railway Receipt
SBI	State Bank of India
SCC	Special Conditions of Contract
SCE	Storage cum Erection
T&P	Tools & Plants
TReDS	Trade Receivables Discounting System
IEC	Independent Experts Committee

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	INSTRUCTIONS TO BIDDERS
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1.0 GENERAL INSTRUCTIONS

- 1.1 Tenderers are advised to study all the tender documents carefully. Any submission of tender by the tenderer shall be deemed to have been done after careful study and examination of the tender documents and with full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon in 'Deviation' sheet (refer annexure-II-Cost of Withdrawal) by the tenderer in his offer. Non-compliance with any of the requirements and instructions in the Tender Enquiry may result in rejection of the tender.
- 1.2 The general terms of business or sale of the bidder shall not apply to the Buyer or the Contract unless specifically agreed to otherwise in the Contract. Any other terms and conditions of the bidders attached/ referred in the bid of the Bidder against the tender enquiry will be treated as rejected by the Buyer unless specifically agreed to in the Contract.
- 1.3 Any deviations from or additions to these 'General Conditions of Contract' require Buyer's express written consent before awarding the order/ contract.
- 1.4 Acceptance, receipt of shipments or services or effecting payment as regards any such shipments or services shall not mean that the general terms of business or sale of the seller have been accepted. Any additional and new terms & conditions mentioned in any of the document submitted by vendor after award of contract shall have no effect.
- 1.5 Purchase orders/ Work orders/ Contracts, agreements and amendments thereto shall be binding if made or confirmed by the Buyer in writing. Only the Purchasing/ *Contracting* department of the Buyer is authorized to issue the Purchase Order (Contract/Work Order) or any amendment thereto. Any document purporting to be a Contract/Order or an amendment thereto issued by any person not from the Purchasing Department of the Buyer will not be binding on the Buyer and will not be deemed to create any mutual rights and obligations for the Buyer and the Seller/Bidder.
- 1.6 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following order of precedence:
 - i. Amendments to Purchase Order/ Work Order/ Framework Agreement
 - ii. Purchase Order/ Work Order/ Framework Agreement
 - iii. Letter of intent (LOI)/ Letter of Award (LOA)
 - iv. Clarifications agreed between Buyer and Seller as regards to the tender or the bidding conditions
 - v. The final set of deviations acceptable to purchaser with loading as specified in relevant section.
 - vi. Corrigenda to NIT, with those of later date having precedence over those of earlier date
 - vii. Enquiry letter and annexures except documents listed in point no (vii) to (ix) below
 - viii. Technical specifications
 - ix. Special Conditions of Contract (SCC)
 - x. General Conditions of Contract (GCC)
- 1.7 In the GCC, wherever references are being made for any particular web links, bidder to properly apprise itself about these web links before submission of the bid.

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2.0 PROCEDURE FOR SUBMISSION & OPENING OF TENDERS

- 2.1 Bids shall be submitted strictly in accordance with the requirements of tender documents. Incomplete offers are liable to be rejected.
- 2.2 Tenders shall be submitted in **Two parts** (or as specified in NIT) on or before the Due Date and time indicated in the NIT/ RFQ.

PART – I: Techno-Commercial Bid

comprising of Technical Offer, Annexure-I of GCC, Commercial Terms & Conditions, Unpriced copy of Price Bid & Annexure II of GCC, PQR documents (if applicable) in two sets or as specified in NIT.

PART – II: Price Bid

Containing Prices, cost of withdrawal of deviation as per Annexure-II of GCC, to be submitted in original, strictly, as per Price Schedule of BHEL for complete scope of Tender Enquiry.

NOTE:

Offers are liable to be rejected for changes made by bidders in the Price Schedule, except those specified in the unpriced bid and accepted by Purchaser.

Where-ever it is specified in NIT that the bids are to be submitted on BHEL e-procurement portal, bidder to upload the bid documents on specified portal and no paper bids are required to be submitted.

- 2.2.1 PART-I (Techno-Commercial bid) shall be opened on Due Date and time specified in the NIT/ RFQ, or extension thereof, in presence of bidders who may like to attend. In case of e-bid, system generated intimation of bid opening to bidders will be applicable (i.e. presence of bidders is not applicable in case of e-bid). Incomplete offers are liable to be rejected. Purchaser reserves the right to open both Part-I and Part-II together.
- 2.2.2 PART-II containing prices shall be submitted along with Part-I but in a separate sealed cover. Corrections/ amendments shall be properly authenticated; else the offer is liable to be rejected. Intimation for Part-II opening shall be given to all the techno-commercially acceptable bidders and opening of bids shall be done in presence of tenderers who may like to attend. In case of e-bid, system generated intimation of bid opening to bidders will be applicable (i.e. presence of bidders is not applicable in case of e-bid).
- 2.2.3 Any discount/ revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer submission. The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
Unsolicited discounts/revised offers given after due date and time of offer submission shall not be accepted.

In case there is no change in the technical scope and/or specifications and/or commercial terms & conditions, the bidder/s shall not be allowed to change his/their price bids after the due date, within the validity period.

In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. A cut-off date and time shall be given to all the techno-commercially acceptable bidders to submit the impact on their price bids.

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In the event of any bidder, after finalizing the technical specification & scope of supply, opting to revise and submit their latest price bid instead of submitting impact on their price bid asked by BHEL, then their original price (i.e. the previous bid) shall also be opened.

Price Impact/ Discount/ Revised Price Bid shall be duly superscribed as:

“Price Impact / Discount/ Revised Price Bid (Part-II) (delete whichever is not applicable), Revision No. against Tender Enquiry No. _____ dated _____”

2.3 After technical & commercial examination of the offers received and clarifications obtained (if required), Part-II (Revised Price Bid/ Original Price Bid along with Price Impact and Discount, if any) shall be opened, for which the date and time shall be intimated to technically and commercially acceptable bidders in case of public opening. BHEL may opt to finalize the prices through Reverse Auction amongst technically and commercially acceptable bidders. BHEL reserves the right to open the earlier price bids, if any, submitted by the bidder(s), if required.

2.4 No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

2.5 Only one representative of the bidder will be permitted to be present for tender opening. The representative to be present for tender opening should have proper authentication/ Photo Identity Proof which needs to be produced on demand by BHEL.

2.6 Purchaser may negotiate the tender with L1 bidder after price bid opening.

2.7 **BID SUBMISSION**

2.7.1 **E- Bid**

2.7.1.1 Bidders shall have to visit BHEL E-Procurement web site and have to upload their quotation on BHEL e-bid portal in line with NIT requirement by due date and time.

2.7.1.2 For uploading Bids, bidders have to use their organization's authorized Digital signature (DSC class-III/ applicable class for bidding). In case the same is not available with the bidder then such bidder has to arrange as per the existing provisions of BHEL E procurement portal and ensure timely submission of the bids.

2.7.1.3 Bidders to note that hard copy of the bid is not required to be submitted and Bid is to be uploaded on BHEL e-bid portal only. In case paper bids are received from any of the bidder against e-bid, same shall be ignored

2.7.2 **Paper Bid:**

2.7.2.1 Bid/ Quotation must be enclosed in sealed cover(s) as per requirements of the tender enquiry, on which the tender enquiry number and the due date MUST BE written. Covering letter of tender submission shall be as per Annex I.

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MARKING ON ENVELOPES

2.7.2.2 Following shall be superscribed on the envelopes which shall be addressed by name and designation to the official inviting tender:

PART-I: 1. TENDER ENQUIRY No. AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "TECHNO-COMMERCIAL BID".

PART-II: 1. TENDER ENQUIRY No. AND ITEM DESCRIPTION
 2. DUE DATE FOR OPENING
 3. "PRICE BID".

2.7.2.3 Both Parts - I & II shall be submitted in separate sealed covers duly superscribed as indicated above and shall be enclosed further in a main cover duly sealed and superscribed as:

"TENDER FOR _____ AGAINST TENDER ENQUIRY NO. _____ DUE ON _____
CONTAINING PART-I & PART-II BIDS"

2.7.2.4 Envelope not marked with tender enquiry number is liable to be ignored and may not be opened.

2.7.2.5 Tenders shall be sent to BHEL officials by name & designation as given in NIT.

2.7.2.6 Tenders can either be deposited in tender room in person or sent by Courier/ Registered or Speed Post to the above mentioned address. It shall be bidders' responsibility to ensure that tenders are delivered in time.

2.7.2.7 Name of vendor's dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.

2.7.2.8 Tenders received after the Due Date and Time of submission shall be rejected.

2.7.2.9 Unsolicited tenders will not be entertained.

Note: Bid should be free from Erasure, cutting, overwriting, whitener or 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

3.0 MINIMUM E&C CHARGES AND SUPERVISION OF E&C CHARGES

3.1 **Total Erection & Commissioning charges** (excluding GST) should be minimum 20% (or as specified in NIT) of the total quoted price of main equipment supply (including freight & excluding GST) and erection & commissioning (excluding GST); failing which the break-up of prices shall be adjusted accordingly for ordering. However, while doing adjustments, vendor quoted prices for mandatory spares, PG test charges, O&M spares, O&M charges, etc. will not be changed.

3.2 **Supervision of E&C charges, if applicable** should not exceed 2% of the total contract value, failing which the quoted amount shall be restricted (2% of the total contract value) by BHEL at the time of evaluation and ordering.

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4.0 **AUTHORITY FOR TENDER SIGNING**

A person signing the tender or any other document in respect of Order/ Contract on behalf of the tenderer, without disclosing his authority to do so shall be deemed to warrant that he has the authority to bind the tenderer. If it is discovered at any time that the person so signing had no authority to do so, the Purchaser may, without prejudice to any other right or remedy, cancel the Order/ Contract and make or authorize the purchase of the stores at the risk and cost of such tenderer and hold such tenderer liable to Purchaser for all costs and damages arising from cancellation of the Order/ Contract including any loss which Purchaser may sustain on account of such purchase.

Notes:

- a) Bids of Indian supplier shall be in Indian Rupee only.
- b) Bids of foreign suppliers shall preferably be USD.
- c) An authorized representative/ agent can represent only one bidder for the given package.

5.0 **CLARIFICATIONS REQUIRED BY BIDDERS**

Technical and commercial clarifications required before submission of the tender should be addressed to the official(s) inviting the tender.

6.0 **DEVIATIONS - LISTING**

Tenders shall be submitted strictly in accordance with the requirements of tender documents. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviation in the Annexure-II (i.e. in cost of withdrawal sheet). Any deviation not mentioned in deviation sheet and shown separately or found hidden in offer, will not be taken cognizance of.

7.0 **VALIDITY OF OFFER**

Vendors' offers shall be submitted with the following validity periods:

- i. Original offer shall be valid for six months from Part-I opening date unless specified otherwise in NIT.
- ii. If revised price bid/ price impact is asked by BHEL, the validity of the same shall be two months from the date of price bid opening or six months from Part-I opening, whichever is later.
- iii. In case where Reverse auction (RA) is conducted, the validity of the same shall be two months from the date of successful RA completion or six months from Part-I opening, whichever is later.
- iv. In case of negotiation, validity of offer shall be two months from receipt of revised price /negotiated final price or six months from Part-I opening, whichever is later.
- v. Offers with shorter validity than above are liable to be rejected
- vi. Prices of Recommended Spares, O&M Spares and Mandatory Spares (wherever these are Optional items) shall be valid till three years from the date of PO (for placement of order) unless specified otherwise in NIT.
- vii. Unit prices for scope addition/ deletion shall be valid till three years from the date of PO (for amendment of PO).

8.0 **LANGUAGE & CORRECTIONS**

- i. The Bid shall be in English language. All correspondence and documents relating to the bid exchanged between the bidder and the purchaser shall also be in ENGLISH language. However, any technical document/ literature

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etc. printed in a language other than English shall be accompanied by its true English translation duly signed for its correctness. Any document submitted with the bid but not in English language shall not be treated as part of the bid document. The responsibility for the correctness of the translations if any solely rests on the bidder and purchaser shall not be responsible for any loss/likely loss arising out of error in translation whatsoever. In such cases, for the purpose of interpretation of the bid, the English translation shall prevail.

- ii. Tenderer shall quote the rates in English language and Indo-Arabic numerals only. Total Price shall be entered in figures as well as in words. For the purpose of tender, metric system of units shall be used.
- iii. All entries in the tender shall either be typed or written legibly in ink. Cancellations, corrections, insertions, erasements, over-writing (if unavoidable) shall be authenticated with signature and seal by the bidder.

9.0 **PRICE DISCREPANCY**

Following shall be considered for evaluation and ordering for non-conformities/ errors/ discrepancies in price bid:

- i. Bidders should quote total price in “figures” with corresponding words in price bid format.
- ii. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly., unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
- iii. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
- iv. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (ii) and (iii) above.
- v. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date up to which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the Purchaser, the bid is liable to be ignored.

10.0 **TENDERER TO INFORM HIMSELF FULLY**

- 10.1 Tenderer shall closely peruse all clauses, specifications & drawings etc. indicated in tender documents before quoting. In case of any doubt about meaning of any portion of tender specifications or discrepancies or omissions in drawings/ tender document or clarifications regarding scope of work etc., tenderer shall contact the official(s) inviting the tender for clarifications, before submitting the offer.
- 10.2 Tenderer shall make independent enquiries as to conditions and circumstances affecting cost estimates, and possibility of executing supplies/ works as described. Tenderer shall be deemed to have inspected and examined the site and its surroundings and to have satisfied himself as to the form and nature of the site, the quantities and materials necessary for completion of the work and means of transport and access to the site, the accommodation required, general labor position at site and to have quoted prices taking into consideration the risks, contingencies and other circumstances which may influence or affect execution of the Order/ Contract.

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- 10.3 It is the responsibility of tenderer to keep himself informed about all taxes & duties applicable on materials/ services as prevailing at the time of tendering. If the rates assumed by tenderer are less than the tariff rates prevailing at the time of tendering, the tenderer will be himself responsible for such under quotations.

11.0 ETHICS IN BUSINESS DEALINGS/ SUSPENSION OF BUSINESS DEALINGS

In order to protect the commercial interests of BHEL, it becomes necessary to take action against bidders/ sellers/ suppliers / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other misconduct or formation of cartels so as to influence the bidding process or influence the price etc. Suspension of Business Dealings could be in the form of "Hold" or "Banning" a bidders/ sellers/ suppliers / contractors. Detailed guidelines are available at www.bhel.com / www.pem.bhel.com. Bidders should get themselves acquainted with these guidelines.

12.0 INTEGRITY PACT (IP)

IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. A panel of Independent External Monitors (IEMs) have been appointed by BHEL with the approval of CVC. The names of the IEMs in panel are mentioned in NIT.

Integrity Pact (IP) will be applicable for all tenders/ contracts valuing more than a specific value as specified in NIT/ RFQ.

The IP as enclosed as per annexure-VIII (as enclosed in NIT) is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this pact would be a preliminary qualification. (Refer Annexure-VIII for Integrity pact).

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 the any of the IEMs mentioned in the NIT. All correspondence with the IEMs shall be done through email only.

"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 officials whose contact details are provide in NIT".

12.1 INTEGRITY COMMITMENT:

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

12.1.1 Commitment by BHEL:

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

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12.1.2 Commitment by Bidder/Seller:

- The Bidder/Seller commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which it is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of Indian penal code, 1860 or any other law in force in India.
- The Bidder/Seller 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.
- The Bidder/Seller will perform/execute the contract as per the contract terms & conditions and will not default without reasonable causes, which causes loss of business/money/reputation, to BHEL.

If any Bidder/Seller during Pre-tendering/tendering/post tendering/award/execution/post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct of formation of cartel so as to influence the bidding process or influence the price 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/Seller as per the extent guidelines of the company (Fraud Prevention Policy, suspension of Business dealings with suppliers/contractors etc.) available on www.bhel.com and/or under applicable legal provisions.

13.0 MODE OF FINALIZATION OF PRICES (REVERSE AUCTION OR PRICE BID OPENING)

Mode of finalization of prices (through reverse auction/ price bid opening) of all techno-commercially qualified bidders shall be as specified in NIT.

Detailed terms and conditions for RA are available on www.bhel.com. Business Rules for RA shall be sent to the bidders before conducting RA.

14.0 REJECTION OF TENDER AND OTHER CONDITIONS

14.1 Acceptance of tender will rest with Purchaser and does not bind him to accept the lowest or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever:

- To reject any or all the tenders.
- To increase or decrease the quantities.
- To reject any commercial or technical deviation given in offer.
- To split the work amongst two or more bidders.
- To award the work in parts.

14.2 Standard pre-printed conditions of tenderer attached to offer will not be accepted.

14.3 Purchaser will not be bound by any new power of attorney granted by tenderer or by changes in composition of the firm made subsequent to award of Order/ Contract. Purchaser may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Seller/ Contractor concerned.

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- 14.4 If tenderer gives wrong information/furnishes false documents/certificates etc., whether during the bidding stage or subsequent to award of contract then the purchaser reserves the right to reject such an offer at any stage or cancel the Order/ Contract, if awarded, and forfeit the security deposit and bank guarantee. Such actions/omission may also invite action by BHEL as per extant guidelines for suspension of business dealing with supplier/contractor (as available on www.bhel.com)

DEALING WITH BIDDERS UNDER SUSPENSION

The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firm is available on BHEL web site www.bhel.com

15.0 DEVIATIONS FROM NIT

Deviations (Commercial as well as Technical) from NIT are generally not acceptable. In case of deviations from NIT, the tenderer shall give cost of withdrawal of such deviations as per Annexure-II.

16.0 LOADING FOR COMMERCIAL DEVIATION (WHERE COST OF WITHDRAWAL NOT GIVEN)

For deviations w.r.t. Payment terms, Liquidated damages, if a bidder chooses not to give any cost of withdrawal of deviation, loading as per Annexure-VII will apply.

17.0 INTEREST RATE FOR LOADING

Interest Rate for loading will be taken as Base rate of SBI on the date of bid opening; (Techno-commercial bid, in case of 2 part bids) + 6% for the period of relaxation sought by the bidders. If the bid opening day happens to be non-working day for SBI, then previous bank working day shall be considered.

18.0 DISCOUNT

Discount offered by any bidder in the original price bid, against the present Tender Enquiry, which is also indicated to be applicable to any other Enquiry, shall be considered against the present Tender Enquiry only. In case only percentage discount is indicated, the same shall be applicable to optional prices also. Discount offered shall be valid for full duration of offer validity. Any conditional discount shall not be considered for evaluation.

19.0 EVALUATION CRITERIA

19.1 TENDER EVALUATION

Techno-commercial evaluation shall be carried out on the basis of technical specifications, commercial terms and conditions and PQR (if applicable) specified in the tender documents and changes/clarifications thereof, if any.

Bidders (other than cases of single part bids) shall be given an opportunity to withdraw the deviations/ furnish clarifications/ documents by appropriate cut-off date by authorized purchase executive.

If the bidder does not withdraw its deviation(s) and the deviation(s) is/are acceptable to BHEL, loading of offers shall be done as per the loading criteria mentioned in this document/NIT.

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If no loading criteria is defined for any deviation it will be derived and communicated to the Bidder. If the Bidder does not withdraw its deviation(s) and the deviation(s) is/are not acceptable to BHEL, the bid will be liable to be rejected.

In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, techno-commercially acceptable bidders shall be asked to submit the impact (either positive or negative, as decided by BHEL) of such changes on their price bid on or before the cut-off date. If the bidder submits impact opposite of the asked for (positive or negative), the impact will be considered as ZERO for evaluation as well as ordering. If BHEL does not specify the type of impact (positive or negative), bidders shall be free to quote the impact in positive or negative. Bidder's query/correspondence etc. with respect to this tender shall not be entertained after opening of Price bid, except from L1 bidder. The offers of the bidders who are under suspension by BHEL and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site www.bhel.com. Please also see clause no. 11 and other provisions in GCC.

19.2 **COST EVALUATION**

Tenders will be evaluated on the basis of total cost to BHEL, taking into consideration loadings, if any, and all available financial advantages, including those available from Owner, taxation authorities etc.

For evaluation, exchange rate (TT selling rate of State Bank of India) as on date of tender opening (Part-I bid in case of two part bid) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

In case of foreign bidders for supply packages, the quoted C&F price shall be loaded by following factors to arrive at total evaluation price:

- a) Insurance for evaluation purposes shall be @ 0.1 % of quoted C&F price.
- b) Port handling/clearing charges @1% of C&F value
- c) Custom duty with applicable cess as per special conditions of contract-as prevailing on date of tender opening (Part-I).
- d) Inland freight (Indian port to project site) @ 3% of C&F value

20.0 **FOREIGN SUPPLIERS & INDIAN AGENTS OF FOREIGN SUPPLIERS**

Please refer our website www.pem.bhel.com , www.bhel.com for details.

21.0 **MICRO, SMALL & MEDIUM ENTERPRISES**

Extant regulations of Govt. of India will be applicable.

Preferences as mentioned in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" shall be given to Micro and Small enterprises. Payment to MSEs will be governed as per the prevailing Act. MSE Bidders/ as defined by the MSMED Act as amended from time to time can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate/ Udyog Aadhar Memorandum certificate having deemed validity (five years from the date of issue in acknowledgement in EM III Udyog Aadhar) or valid NSIC certificate or EM III Udyog Aadhar Memorandum certificate along with attested copy of a CA certificate (Format enclosed as per Appendix I where deemed validity of EM II certificate/Udyog Aadhar Memorandum certificate of five years have expired) applicable for the relevant financial year (latest audited) or such other document as may be stipulated in the MSMED Act or its rules/regulations as amended from time to time and/or by the Buyer. The deemed validity will be assessed on the date of bid opening (Part 1 in case of two part bid). Non submission of such documents as stipulated hereinbefore will lead to consideration of their bids at par with other Bidders. No benefit shall be applicable for the concerned for the tender enquiry, if any

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deficiency in the above required documents is not submitted before the 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. This provision for MSE will apply subject to the condition that the participating MSE meets the tender requirements.

In case of any change in the MSE status of the Bidder, it shall be the responsibility of the Bidder to notify the change as a part of the bid document. If at a later date it comes to the knowledge of BHEL, that the change in the status has not been intimated by the Bidder and the order was obtained under the premise of an MSE then BHEL may reject the bid or, as the case may be, cancel the order and take necessary steps for suspension of the business dealing against the Bidder as per the extant guidelines for suspension of business dealings with suppliers/ contractors of BHEL (as available on www.bhel.com). In case if all the items being procured under the enquiry fall under category of reserved items as defined in "Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012" and if any of the MSE bidder(s) is techno-commercially qualified then the price bids of only MSE bidders shall be opened. If no MSE bidder is techno-commercially qualified, then price bids of all techno-commercially qualified Bidders shall be opened.

22.0 **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. BHEL Fraud prevention policy is also uploaded on www.pem.bhel.com & www.bhel.com

23.0 **TENDERING COST**

Tender documents are free of cost. However, Bidder shall bear all costs associated with the preparation and submission of its bid at its end. BHEL, shall in no case, be responsible or liable for these costs, regardless of the conduct or the outcome of the bidding process.

24.0 **AVAILABILITY OF SPARES**

Vendor to keep BHEL informed by giving six-month (or specified in SCC) advance notice for discontinuation of manufacturing of the spares, mentioned/ required in the order.

25.0 **SPLITTING OF ORDER**

BHEL reserves the right to award tendered quantities to one or more Bidders. In case splitting is desired, the ratio of splitting shall be as mentioned in NIT, subject to acceptance of L1 price by L2, L3 etc., in order of their ranking.

If no splitting is mentioned in the NIT but it is later discovered that the quantity needs to be distributed on more than one Bidder the intention and manner of splitting shall be disclosed to all the techno-commercial acceptable bidders before price bid opening.

However extant Guidelines/ Instructions of Govt. of India shall prevail.

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26.0 MAKE IN INDIA

For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 16.09.2020 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of the NIT but before finalization of contract/ PO/WO against the NIT. In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and / or local content in respect of this procurement, same shall be applicable. Vendors are requested to go through the above mentioned orders and furnish the required documents as specified in the NIT.

27.0 START UP VENDORS

MSME / Start up vendors to submit applicable documents along with their offer for availing the benefits as per GOI guidelines.

28.0 TReDS PLATFORM

BHEL is registered with TreDS platform. MSME Bidders are requested to get registered with TReDS platform to avail the facility as per the GOI guidelines.

29.0 EXPORT ADMINISTRATION REGULATIONS

If a delivery includes such technology and / or supply that is subject to the export regulations, the Seller shall obtain due permissions, approvals, license etc. as applicable from time to time under laws in force.

30.0 AGENCY AGREEMENT: - For Indian agents of foreign principals:

- i. BHEL shall deal directly with foreign bidders/vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines- which require mandatory submission of an Agency Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.
- v. Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.
- vi. In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representative/ associate/ consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.
- vii. The "Guidelines for Indian Agents of Foreign Suppliers" (refer www.bhel.com) shall apply in all such cases.

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- viii. The supply and execution of the Purchase Order (including indigenous supplies / service) shall be in the scope of the OEM / foreign principal. The OEM / foreign principal should submit their offer inclusive of all indigenous supplies / services and
- ix. evaluation will be based on 'Total cost to BHEL'. In case OEM / foreign principal recommends placement of order(s) towards indigenous portion of supplies / services on Indian supplier(s) / agent on their behalf, the credentials / capacity / capability of the Indian supplier(s) agent to make the supplies / services shall be checked by BHEL as per the extant guidelines of Supplier Evaluation, Approval & Review Procedure (SEARP), before opening of price bids (if required as per NIT). It will be the responsibility of the OEM / foreign principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on www.bhel.com.

The responsibility for successful execution of the contract (including indigenous supplies / services) lies with the OEM/ foreign principal. All bank guarantees to this effect shall be in the scope of the OEM/ foreign principal.

BHEL prefers to deal directly with the manufacturers. In case any Manufacturer insists for submission of offer from their agent and subsequently placement & execution of PO through their agent:

- i. Agent should submit authorization letter from the manufacturer, clearly indicating name and address of Manufacturer & agent. The authorization letter should be tender specific and clearly define that the manufacturer has authorized only the referred agent for participating in the tender. Manufacturer, should take responsibility for Quality and Guarantee. In case offer of one Manufacturer received from more than one agent (i.e. Manufacturer authorizing more than one agent), all such offer will be ignored.
- ii. Manufacturer should necessarily meet PQR defined in NIT for manufacturers in either case (i.e. In case of Submission of Offer Directly by manufacturer or Participating through agent). Offers of Manufacturers forwarded by their agent (i.e. Offer are of manufacturer and agent is only forwarding their offer with their covering letter), should be treated as direct offer from manufacturer.
- iii. The C&F price quoted will be deemed to be inclusive of Indian Agency commission. Agency commission if payable shall be converted to Indian Rupees at TT buying rates of exchange ruling on tender opening date which shall not be subjected to any further exchange rate variation, as disclosed by the bidder in his quoted C&F price will be paid in Indian Rupees on receipt & acceptance of Materials or it's installation at destination, as the case may be. The TT buying rate prevailing on the date of technical bid opening shall be considered for computation of Agency commission.
- iv. In a tender either the Indian Agent on behalf of Principal / OEM or the Principal / OEM itself can bid, but both cannot bid simultaneously for same item / product in the same Tender. If both OEM and its authorized agent submit their bids separately in that case only the offer of OEM can be considered.

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1.0 **ISSUANCE OF PURCHASE ORDER AND RECTIFICATION OF ERRORS**

Issuance of LOI / LOA / Purchase order by the Purchaser shall result in a binding contract between the Seller/ Contractor and Buyer. Seller/Contractor shall acknowledge the LOI /LOA/ Purchase Order issued by BHEL (Purchaser) within 7 days of its receipt. Seller/ Contractor should examine the LOI / LOA/ Purchase Order immediately upon receipt and bring to the notice of BHEL, within 7 days of receipt, any discrepancy/errors with regard to scope of work, rates, taxes & duties, agreed terms & conditions etc. for due rectification. If the Seller/ Contractor fails to give such acknowledgement within seven days, LOI /LOA/ Purchase order issued shall be deemed as *having no discrepancy/ errors. In case of any clerical error in the LOI /LOA/ Purchase order with respect to agreed Terms & Conditions, BHEL reserves the right to issue correction(s) as and when noticed.*

2.0 **INTENT OF CONTRACT**

Nothing in this document, unless otherwise specified, is intended to, or shall be deemed to, establish any partnership or agency between the parties.

3.0 **PRICES**

Prices shall be with PVC for the entire scope of work in line with the tender documents and subsequent clarifications/ confirmations till completion of contract.

While, total price will be considered for evaluation, as per provision of tender, separate orders will be placed for (i) Engineering, (ii) Main supply, (iii) E&C, (iv) Mandatory spares and (v) O&M, as applicable and as per price schedule.

4.0 **TAXES AND DUTIES**

4.1 **GST is defined and includes CGST/ SGST/ UTGST/ IGST**

4.1.1 Seller/ Contractor is required to ensure that the quoted price should be exclusive of GST (or specified in NIT).

4.1.2 It is the responsibility of the seller/contractor to issue the Tax Invoice strictly as per the format prescribed under the relevant applicable GST law. Vendor to indicate the proper GSTN Registration/ HSN/SAC code in their tax invoice.

4.1.3 **State wise GST registration code of purchaser units / regions as per annexure no XI.**

4.1.4 Seller/contractor is required to mention the GST registrations number as per POWO or as informed by respective region/site/unit of BHEL.

4.1.5 In general, GST shall be paid at actuals against Tax Invoice in case BHEL is able to take the input tax credit. Decision of BHEL in this regard will be final and binding on the seller/contractor

4.2 **OTHER TAXES & LEVIES**

All taxes/ duties/ Cess ~~BOCW~~ / *seignior age fee* other than GST shall be deemed to be included in the Ex-Works prices. No variation for such taxes and levies shall be paid in any circumstance unless specifically agreed upon even if the same are mentioned anywhere in the bids by the bidders.

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Note : For BOCW, please refer SCC/NIT.

4.3 **CUSTOM DUTY**

- 4.3.1 Applicable Customs Duty/ IGST/ Goods and Services Compensation Cess under Goods and Services Tax (Compensation to States) Act, 2017 element for imported items shall be included in the Ex-Works prices unless specified in the price format of the NIT.
- 4.3.2 Seller/ Contractor shall arrange for his own import license, if required, since Purchaser will not provide any import license. Therefore, Seller/ Contractor alone shall be responsible for any delay in getting import license or non-availability of the same or completion of other related formalities. Purchaser shall not be responsible for any financial liability, whatsoever, on this account.
- 4.3.3 For items where CIF is available, as specified in NIT- Essentiality Certificate or Project Authority Certificate (PAC) as per Import Policy, if required to avail concessional customs duty, shall be clearly mentioned in the offer. Import content (CIF value in rupees) with list of items, quantity, foreign currency, Country of origin etc., shall be submitted by the bidder as part of Price bid.

4.4 **DIRECT TAX**

- 4.4.1 Seller is required to update himself on its own and comply with provisions of Indian Income Tax Act as notified from time to time. Purchaser shall not be liable towards liability of income tax accruing to the Seller of whatever nature including variations thereof, arising out of this Order/ Contract, as well as tax liability of the Seller/ Contractor and his personnel.
- 4.4.2 Deductions of Tax at source at the prevailing rates shall be effected by the Purchaser before release of payment, as a statutory obligation, if applicable. TDS certificate will be issued by the Purchaser as per statutory provisions. The Seller/Contractor has to mention their Permanent Account Number (PAN) and GSTIN in all invoices.

4.5 **GST COMPLIANCES**

- 4.5.1 The bidder should be registered with the appropriate authority under relevant GST laws.
- 4.5.2 **The bidder to specify in their offer (part 1 bid) the category of registration under GST i.e. registered dealer and composite dealer.**
- 4.5.3 **In the event of any GST quoted by a bidder (registered as a composite dealer), the GST shall be considered for evaluation and ordering purpose.**
- 4.5.4 **In the event of any change in the status of vendor from composite to regular dealer after the submission of the bid but before the supply, no reimbursement of additional GST will be made. However, the vendor has to raise the invoice strictly, as per the law, by adjusting their ex-works price.**
- 4.5.5 **Vendor/Supplier will share the Tax invoice along with LR/RR (as applicable) to BHEL immediately on removal of goods from vendor/supplier works.**
- 4.5.6 All payments against Tax Invoice to vendors/contractors shall be released only after:

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- i. Vendor/ contractor declaring such invoice in GSTR-1/GST-ANX-1 as per the relevant GST Act.
- ii. The tax component charged by the vendor in the invoice should match with the details uploaded by vendor in GSTR-1/GST-ANX-2.
- iii. Confirmation of payment of GST thereon by vendor on GSTN portal. In case, any GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry to timeline prescribed in the relevant GST Act for availing such ITC, or any other reasons not attributable to BHEL, tax amount shall be recoverable from the vendor/contractor along with interest levied/ leviable on BHEL.

4.5.7 Wherein GST liability arises on BHEL under reverse charge, any interest levied/leviable due to any reasons not attributable to BHEL shall be recovered from the vendor/contractor.

4.5.8 The applicable TDS under GST/ Goods and Services (Compensation to States) Act will be deducted from the payments.

5.0 **STATUTORY VARIATION**

5.1 In general, Statutory variation for GST is payable to the Seller during currency of the contract between Buyer and Seller. Further, for period beyond the currency of the contract, BHEL will reimburse the actual applicable tax even if the same is higher than the amount applicable within the contractual period in case BHEL is able to take the input tax credit. However, the decision of BHEL in this regard will be final and binding on the seller/contractor otherwise vendor/contractor has to bear the differential upward increase in tax and ex- works price is to be adjusted accordingly

5.2 No other variations such as on Custom Duty, exchange rate, minimum wages, prices of controlled commodities, any other input etc. shall be payable by the purchaser unless specifically agreed upon.

6.0 **VARIATION OF CONTRACT VALUE**

Prices shall be with PVC (as specified in NIT) for any increase or decrease in the Order/ Contract value (Ex-works) as per annexure-XIII (for any amendment) within three years from the date of original PO unless specified otherwise in NIT. The Purchaser shall have the right to increase or decrease quantities and scope up to the above extent of value and Seller/ Contractor shall be bound to accept the same at the contracted prices without any escalation.

Note:

- i. In case of package *broken into Purchase Orders of main supply, services and spares, quantity variation clause shall be applicable on cumulative sum of such individual Purchase Orders.*
- ii. Quantities (within PO/permissible quantity contract price variation) shall be released within **three** years from the date of purchase order/ LOI / LOA, unless mentioned otherwise in NIT/SCC specifically.

7.0 **ENGINEERING DOCUMENTS SUBMISSION**

All engineering document submission by vendors after award of contract shall be online, using BHEL Document Management System (DMS) (as applicable). Comments would also be conveyed to vendors

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through DMS. This would ensure enhanced engineering coordination and speedy approval of documents.

For facilitating submission of documents online, vendors shall submit details as per format available on line (select Vendor Login Creation form link available at https://www.pem.bhel.com/Bhel_vendor_section.aspx) to concerned Dealing Engineer in Purchase Dept. of BHEL-PEM for creation of login account in PEM's DMS.

- i. Internet explorer version –Internet Explorer 11 or above
- ii. Internet speed – 2 mbps
- iii. Pop up from <https://www.pem.bhel.com/> should not be blocked
- iv. Vendor's internal proxy setting should not block DMS application's link <https://www.pem.bhel.com/wrenchweb>

Procedure for uploading comments, viewing comments etc. is available at https://www.pem.bhel.com/Dms_Manuals.html.

8.0 **TRANSPORTATION & FREIGHT CHARGES**

All dispatches shall be through road carriers, on freight pre-paid basis. Road Permit/E-way bill, if required, will be arranged by Supplier.

9.0 **TERMS OF PAYMENT**

9.1 **MANDATORY SPARES**

9.1.1 **INDIAN VENDORS**

Payment of 90% of basic price of materials supplied along with 100% freight and taxes & duties (as applicable), shall be paid against receipt of material (receipted LR) at site on prorata basis.

Balance 10% of basic price of materials supplied will be released on pro – rata basis on receipt of Material Receipt Certificate (MRC) / Store Receipt Voucher (SRV) from project site engineer of purchaser/customer.

9.1.2 **FOREIGN VENDORS**

Payment of 80% of C&F price of materials supplied, shall be paid against Bill of lading/ AWB on pro-rata basis. Balance 20% of C&F price of materials supplied will be released on pro – rata basis, as detailed below:

Balance 10% of C&F price of materials shall be paid against Import General Manifest (IGM)/ Bill of Entry on pro-rata basis.

Balance 10% of C&F price of materials shall be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) / Store Receipt Voucher (SRV) from project site engineer of Purchaser/customer.

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9.2 SUPPLY PAYMENT

9.2.1 INDIAN VENDORS

Payment of 80% of basic price of materials supplied, as per approved billing schedule, along with 100% freight, taxes and duties (as applicable), shall be paid against receipt of material (receipted LR) at site on pro-rata basis.

10% of basic price of materials supplied will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Purchaser.

Collection of Material Receipt Certificate from Site and its submission for claiming the payment shall be the responsibility of the Seller/ Contractor.

10 % of basic price of materials supplied shall be released against (2.5% against each activity) the completion of: (a) Trial run of the system/ package; (b) Successful completion of the PG test/ demonstration test of the system/ package, as applicable; (c) Submission of final documents, e.g. As-built drawings, O&M manual etc. as applicable and (d) Liquidation of Punch Point.

BHEL site(s) / ISG / REGION HQ, at discretion, may further split up the above percentages and effect payment to suit the site condition, project cash flow requirement, according to the progress of work. In case of Turnkey package-After successful TRIAL operation of package vendor shall obtain FINAL SUPPLY time extension and claim these retention payments

List of packages with PG Test applicability is as per Annexure-IX. List of documents required for FINAL bill payment (i.e RETENTION payment) shall be issued by BHEL site(s) / ISG / REGION HQ during detailed PO/VO.

Note: - In case PG test/ demonstration test of the system/ package, as applicable cannot be completed within one year after completion of Trial run, for reasons not attributable to the contractor, payment for PG Test/ demonstration test of the system/ package, as applicable can be released on submission of BG of equivalent amount, valid initially for 6 months & to be revalidated till completion of PG test/ demonstration test of the system/ package, as applicable.

However, contractor has to fulfil all formalities for final billing/ contract closing, prior to drawing this payment.

9.2.2 FOREIGN VENDORS

Payment of 75% of the C&F price of materials supplied, as per approved billing schedule, along with 100% taxes and duties (as applicable) and inland freight, shall be paid against Bill of lading/ AWB on pro-rata basis.

10% of C&F price of material supplied shall be released against Import General Manifest (IGM)/ Bill of Entry on pro-rata basis.

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5% of C&F price of material supplied shall be released after submission of Material Receipt Certificate (MRC) from project site engineer of Purchaser.

Collection of Material Receipt Certificate from Site and its submission for claiming the payment shall be the responsibility of the Seller/ Contractor.

10 % of C&F price of materials supplied shall be released against (2.5% against each activity) the completion of: (a) Trial run of the system/ package; (b) Successful completion of the PG test/ demonstration test of the system/ package, as applicable; (c) Submission of final documents, e.g. As-built drawings, O&M manual etc. as applicable and (d) Liquidation of Punch Point.

BHEL site/ Region Hqrs/ ISG, at discretion, may further split up the above percentages and effect payment to suit the site condition, project cash flow requirement, according to the progress of work.

List of packages with required final documents and PG Test applicability is as per Annexure-IX.

Note: - In case PG test/ demonstration test of the system/ package, as applicable cannot be completed within one year after completion of Trial run, for reasons not attributable to the contractor, payment for PG Test/ demonstration test of the system/ package, as applicable can be released on submission of BG of equivalent amount, valid initially for 6 months & to be revalidated till completion of PG test/ demonstration test of the system/ package, as applicable.

However, contractor has to fulfil all formalities for final billing/ contract closing, prior to drawing this payment.

9.3 **ERECTION & COMMISSIONING PAYMENT**

80 % (Eighty percent) of contract E&C price along with taxes (as applicable) shall be released on pro-rata erection of item/ material, on submission of protocol, duly signed by BHEL site official(s)/ customer, as per approved billing schedule.

10 % (Ten percent) of contract E&C price along with taxes (as applicable) shall be released on pro-rata commissioning of individual sub-system, on submission of protocol, duly signed by BHEL site official(s) and customer, as per approved billing schedule.

10 % (Ten percent) of contract E&C price along with taxes (as applicable) shall be released against (2.5% against each activity)

(a) Trial run of the system/ package; (b) Successful completion of the PG test/ demonstration test of the system/ package, as applicable; (c) Submission of final documents, e.g. As-built drawings, O&M manual etc. as applicable and (d) Liquidation of Punch Point and handing over.

BHEL site/ Region Hqrs / ISG, at discretion, may further split up the above percentages and effect payment to suit the site condition, project cash flow requirement, according to the progress of work. After successful TRIAL operation of package vendor shall obtain FINAL E & C time extension and claim these retention payments.

List of packages with PG Test applicability is as per Annexure-IX. List of documents required for FINAL bill payment (i.e RETENTION payment) shall be issued by ISG/REGION during detailed PO/WO.

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9.4 PAYMENT OF SERVICE(S) CHARGES: DEMONSTRATION CHARGES, SUPERVISION OF ERECTION / COMMISSIONING CHARGES, ENGINEERING CHARGES, O&M CHARGES (IF APPLICABLE, AS SEPARATE LINE ITEM OF PRICE FORMAT)

100% payment shall be released after successful completion of the activity on pro rata basis, on Site certification/ certification by engineering as applicable. Payment of O&M on quarterly basis after completion of each activity or as specified in NIT, on Site certification/ certification by engineering as applicable.

Note:- Engineering design, if applicable is defined as separate line item in NIT BOQ, same shall not be more than 5% of main supply (excluding freight and GST) failing which breakup shall be adjusted accordingly from supply price for ordering.

9.5 RELEASE OF PAYMENT

Vendors shall submit billing documents for payment directly to BHEL. Payment will be released within 60 days after submission of complete documents as per clause no 9.6.2 – 9.6.5 below or as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act).

Notes:

- i. Vendors are required to issue Tax Invoice inclusive of PVC value (if applicable) wherever indices are available. In case PVC indices not available, vendors to submit PVC invoices on availability of applicable indices.
- ii. Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment.
- iii. Payment for supply for Foreign vendors will be released within 90 days from date of Bill of Lading/AWB against payment clause no 9.1.2 and 9.2.2.

9.6 DOCUMENTS TO BE SUBMITTED BY VENDOR

9.6.1 FOR RECOGNITION OF DISPATCH

Copy of the following documents by e-mail/ fax immediately on dispatch:

- i. GST compliant invoice
- ii. LR for Indian Vendors (indicating Invoice No., no. of boxes, PTL (if applicable) etc.) / Bill of Lading or AWB for foreign vendor
- iii. Packing List: Must be indicating No. of boxes, Packing size, Gross weight and net weight of each package, Contents of the package with cross reference to BoM item code no. or item serial no. and Quantity of each item separately
- iv. Insurance Intimation to underwriter through email/fax
- v. Dispatch Clearance

Note: - Above list is tentative in nature and will be finalised at the time of PO.

9.6.2 A) FOR CLAIMING PAYMENTS (UNDER CLAUSE 9.1.1, 9.2.1 (Original + 1 copy)

- i. GST compliant invoice
- ii. PVC Calculation and copy of all applicable indices, if PVC applicable.
- iii. Receipted LR (signed & stamped)

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- iv. Packing List: Must be indicating No. of boxes, Packing size, Gross weight and net weight of each package, Contents of the package with cross reference to BoM item code no. or item serial no. and Quantity of each item separately
- v. Guarantee Certificate
- vi. Duty drawback (if applicable) documents: As per applicable law

B) FOR CLAIMING PAYMENTS (UNDER CLAUSE 9.1.2, 9.2.2) (Original + 1 copy)

- i. Invoice
- ii. Bill of Lading or AWB
- iii. Packing List: Must be indicating No. of boxes, Packing size, Gross weight and net weight of each package, Contents of the package with cross reference to BoM item code no. or item serial no. and Quantity of each item separately
- iv. Guarantee Certificate
- v. COO - Certificate of Origin

9.6.3 FOR CLAIMING MRC PAYMENT

- i. Invoice for claiming MRC payment
- ii. Copy of MRC

9.6.4 FOR CLAIMING PAYMENT FOR SERVICES

- i. GST compliant invoice
- ii. Respective documents as specified in clause 9.3 & 9.4.

9.6.5 FOR CLAIMING RETENTION PAYMENT:

- i. Activity completion certificate (i.e TRIAL operation/PG test/Final drawing/documents/liquidation of punch points as applicable) from BHEL/Customer as applicable.
- ii. FINAL time extension.
- iii. HR compliances, store NOC and any other documents checklist Shall be issued by REGION/ISG during detailed POWO. Compliance of these is required before 1st retention payment release.

9.7 LOADING DETAILS IN CASE OF DEVIATIONS

Loading details in respect to deviations in Payment Terms, LD, PVC indicated in Annexure – VII

9.8 BHEL'S BANKERS

Please refer ISG / REGION HQ "website for details.

9.9 MODE OF PAYMENT/ NON PAYMENT OF INTEREST

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Payments shall be made directly to the Seller/ Contractor by E-transfer. Seller/ Contractor to provide necessary information for the same as per Annexure – VI.

Note: Option of payment through TReDS is also available to MSME vendors.

- 9.10 Notwithstanding anything to the contrary contained in any other document comprising the contract, no interest shall be payable by the Purchaser to the Seller/Contractor on any money or balances including but not limited to the security amount, bank guarantee amount, EMD, retention money, any bills or any amount withheld which may become due owing to difference or misunderstanding or any dispute between the Purchaser and the Contractor, or any delay on the part of Purchaser in making periodical or final payment or any other aspects incidental thereto.

10.0 **RECOVERY OF OUTSTANDING AMOUNT**

In event of any amount of money being outstanding at any point of time against the Seller/ Contractor due to excess payment, imposition of liquidated damages, invocation of risk and cost clause or any other reason whatsoever, in the present order/ contract or any other order/ contract from any BHEL Unit, the outstanding amount shall be recovered from the payments due to the Seller/ Contractor from the following:

- i. Dues available in the form of bills payable to Seller, Security Deposit (SD), BGs against the same contract,
- ii. Dues payable to Seller against other contracts including SDs, BGs in the same Region/Unit/Division of BHEL.
- iii. Dues payable to Seller against other contracts including SDs, BGs in the different Region/Unit/Division of BHEL.
- iv. Any other mode as deemed fit by the Purchaser at its sole discretion.

11.0 **CONTRACT PERFORMANCE BANK GUARANTEE (CPBG)**

- 11.1 Vendor shall submit Separate bank guarantee (Engineering Charges, Main supply, services, mandatory spares etc.) for Orders / POs values (value excluding taxes, duties and freight) (as per Annexure-III) for 5% (or specified in NIT / order / PO) of Order value (excluding taxes, duties & freight) within 30 days from the date of purchase order to cover the due performance of Order / Contract and to fulfill the guarantee conditions stipulated in the Order / Contract.

Note: BG value can be proportionately reduced after completion of Guarantee Period/Defect liability Unit-wise/ Lot wise/ Stage-wise/Set-wise, subject to the units/lots/sets/stages being explicitly specified in the contract.

- 11.2 Value of the Bank Guarantee (at the time of submission) shall remain unchanged for any subsequent variations in order/ contract value up to 20%. Beyond this, the Seller/ Contractor shall arrange to enhance or reduce the value of the Bank Guarantee accordingly.
- 11.3 Validity of the Bank Guarantee shall be for the entire Guarantee/Defect liability period or Package performance guarantee test acceptance (as applicable) whichever is later. Initially, it should be at least 18 months, later extended to cover the above period, one months before its expiry.

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- 11.4 Purchaser reserves the right to encash the bank guarantee and forfeit the amount in the event of any default, failure or neglect on part of the Seller / Contractor in fulfillment of performance of the Order/ Contract or in the event GST credit is delayed / denied to BHEL due to non/delayed receipt of goods and / or tax invoice or expiry to timeline prescribed in the relevant act for availing such Input Tax Credit or any other reasons not attributable to BHEL.
- 11.5 Equivalent amount along with interest shall be recovered from payment due to the Seller/ Contractor, before releasing any payment, in absence of a valid bank guarantee.
- 11.6 Bank Guarantees shall be from Consortium Bank as per list and directives on [www. pem.bhel.com](http://www.pem.bhel.com).
- 11.7 The expiry of claim period should be kept min. of three months after BG validity.
- 11.8 In case of private sector banks, a clause to be incorporated in the text of bank guarantee that it can be enforced by being presented at any branch of the bank located in the respective PS-region HQs.

Notes-

- (A) In case of delay in submission of performance security (CPBG), enhanced performance security (CPBG), which would include interest (SBI rate + 6%) for the delayed period, shall be submitted by the bidder. Further, if performance security is not submitted till such time the first bill becomes due, the amount of performance security due shall be recovered as per terms defined in NIT / contract, from the bills along with due interest.
- (B) In case, seller/ contractor submits CPBG later for the equivalent amount, recovered amount will be refunded. (Excluding interest penalty amount).

12.0 GUARANTEE FOR PLANT/ EQUIPMENT/ STORES

- 12.1 Seller/ Contractor shall warrant that the plant/ equipment/ stores supplied shall be free from all defects and faults in design & engineering, material, workmanship & manufacture and shall be of the highest grade and consistent with the established and generally accepted standards and in full conformity with the Order/ Contract specifications, drawing or samples, if any.

Guarantee period for packages (excluding mandatory spares) shall be as stipulated in Special Conditions of Contract or otherwise, 12 calendar months from the date of handing over of the system Unit wise/Lot-wise/Stage-wise/Set-wise/ system wise (as applicable) to customer / BHEL, OR PG test of system (if applicable), whichever is later.

Seller/ Contractor's liability in respect of any complaints, defects and claims shall not be limited to supply and installation of replaced parts free of charge, or repair of defective parts to the extent that such replacements are attributable to or arise from faulty workmanship, material or design, in the manufacture, of the plant / equipment / stores but at the option of the Purchaser, to the payment of the value, expenditure and damages as mentioned hereafter, provided defects on being discovered are brought to the notice of the Seller/ Contractor within a period of three (3) months from the date of expiry of the guarantee period.

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	Guarantee period for mandatory spares shall be 18 months from the date of handing over of complete package (as applicable) to customer / BHEL or as stipulated in Special Conditions of Contract.
12.2	All replacements and repairs during the guarantee period shall be delivered and completed promptly and satisfactorily within a period of three months from the time of reporting the defect/ loss/ rejection etc. If the Seller/ Contractor so desires and the Purchaser agrees, subject to import control regulations, the replaced parts can be taken over by Seller/ Contractor or his representative or can be dispatched at Seller/ Contractor's cost. No claim, whatsoever shall be entertained by Purchaser on account of such replaced parts.
12.3	All the replaced and replenished plant/ equipment/ stores shall also be guaranteed as per above clauses.
12.4	Decision of Purchaser with regard to Seller/ Contractor's liability and the amount involved, if any, payable by Seller/ Contractor under the guarantee shall be final, conclusive and binding. However, vendor's maximum liability will be limited to the total contract value including taxes, duties and freight except under the condition of Risk purchase including taxes, duties and freight. This shall not be applicable on the recoveries arising out of Risk and Cost, recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the contractor.
13.0	<u>(A) DELIVERY / COMPLETION SCHEDULE (FOR SUPPLY contract)</u>
13.1	Supply of plant/ equipment/ stores shall not be considered complete until they have been inspected and accepted at the place and destination specified for delivery by the time stipulated under the terms & conditions of the Order/ Contract. Mere payment by itself shall not constitute acceptance of the goods or materials in any manner, whatsoever.
13.2	Terms of delivery shall be FOR dispatch station / project site for indigenous supplies and C&F for foreign supplies.
	<u>(B) DELIVERY / COMPLETION SCHEDULE (FOR Turnkey Packages E&C contract)</u>:- E&C shall be considered completed after completion of TRIAL operation / PG test and Handing over (as applicable) of complete package.
14.0	<u>INSPECTION AND TESTING AT CONTRACTOR'S PREMISES</u>
14.1	Purchaser's nominated Inspection Agency shall have at all reasonable times access to Seller/ Contractor's premises or works and shall have the power at all reasonable times to inspect drawings of any portion of the work or examine the materials and workmanship of the plant/ equipment/ stores during their manufacture, and if part of the plant/ equipment/ stores is manufactured at other premises, the Seller/ Contractor shall arrange for inspection, examination and testing by the Inspection Agency as if the plant/ equipment/ stores is manufactured on the Seller/ Contractor's premises.
	Inspection calls should be raised by the Seller/ Contractor on BHEL CQS Website/CQIR website link.

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Such inspection, examination and testing by itself shall not relieve the Seller/ Contractor from any obligation under the Order/ Contract.

Non-conformance from the contract specifications shall be reported by the Seller/ Contractor as per Part – I of Annexure – IV.

- 14.2 Seller/ Contractor shall give Inspection Agency reasonable notice of any material being ready for testing and the Inspection Agency shall (unless the inspection of tests is voluntarily waived) attend at the Seller/ Contractor's premises within seven (7) days of the date on which the material is notified as being ready. All standard shop tests, physical and chemical tests required by the standards or as may be prescribed or approved as per Order/ Contract shall be conducted by the Seller/ Contractor. Purchaser/ Inspection Agency reserves the right to waive any of the above tests requirements and to prescribe new tests, if found necessary, to complete the work so as to conform to the best practices. Seller/ Contractor shall forthwith forward to the Inspection Agency, duly certified copies of the test certificates in quadruplicate, for approval. Further copies of the shop test certificates shall be bound with the instruction manuals referred to in "Seller/ Contractor's documents, drawings and instruction manuals".

In case of delay in witnessing of inspection beyond stipulated time (i.e. 7 days from the date on which the material is notified as being ready), by BHEL arising due to reasons not attributable to vendor, BHEL will extend the delivery period for such delay in carrying out inspection. If BHEL is not able to witness inspection up to 15 days then in addition to delay beyond stipulated period, extension in delivery time of 7 days' for arranging fresh inspection will be given.

- 14.3 Where the Order/ Contract provides for tests/ inspections at the premises or works of the Seller/ Contractor or any sub-contractor, the Seller/ Contractor, except specified otherwise, shall provide free of charge such assistance, labour, materials, electricity, fuel, water, stores, apparatus, measuring instruments and test equipment including any other facilities as may be reasonably required to carry out such tests efficiently.

14.4 INSPECTION MEASURING AND TEST EQUIPMENT'S

- 14.4.1 Inspection Measuring and Test Equipment (IMTE) whether used by the Seller/ Contractor or sub-contractor shall be calibrated, maintained and controlled. Calibration shall be valid and IMTE maintained in sound condition during usage.

- 14.4.2 In addition to above, Seller/ Contractor shall ensure the following:

- i. Measurement uncertainty is known and consistent with required measurement capability of the IMTE.
- ii. Selection of IMTEs is compatible with the necessary accuracy and precision of required measurement.
- iii. IMTEs are calibrated at the required intervals against certified equipment having known valid relationship to nationally recognized standards, at recognized calibration labs.
- iv. Calibration records are available and traceable to the particular IMTE.
- v. In case, during recalibration, the IMTE is found out of calibration, report on action taken to validate the previous results along with both calibration records of the IMTE to be furnished to Inspection Agency.

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vi. IMTEs are stored, handled and preserved such that accuracy and fitness are maintained and safeguarded from adjustments.

Note -Purchaser's decision on acceptability of the product in such cases shall be binding.

14.4.3 Responsibility of usage of valid and calibrated IMTEs by his sub-contractor(s) shall be of the Seller/ Contractor.

14.4.4 In case, calibration records are required by purchaser, copies of the same shall be furnished.

14.4.5 Seller/ Contractor shall be fully responsible for the Quality of products supplied by sub-contractors.

15.0 MATERIAL DESPATCH CLEARANCE CERTIFICATE (MDCC)

15.1 When the tests have been satisfactorily completed at Seller/ Contractor's works, the Inspection Agency shall issue an inspection report that effect within seven (07) days after completion of the tests, but if the tests were not witnessed by the Inspection Agency or his representative, the material acceptance report would be issued within seven (07) days after receipt of the test certificates by the Purchaser.

15.2 Purchaser will issue MDCC to the Seller/ Contractor within 7 days based on inspection report/ test certificates/Certificate of Conformance as applicable.

In case of delay in issuance of MDCC beyond 7 days stipulated time (i.e. from the date of successful inspection report), by BHEL arising due to reasons not attributable to vendor, BHEL will extend the delivery period for such delay in issuing MDCC. If BHEL is not able to issue MDCC up to 15 days then in addition to delay beyond stipulated period, 7 days' additional time shall be given to the vendor to facilitate the vendor for arranging logistics arrangements.

15.3 Seller/ Contractor shall not dispatch any material before issue of MDCC by Purchaser.

15.4 Satisfactory completion of tests or issue of MDCC shall not bind the Purchaser/ Owner to accept the supply/ equipment should it, on further tests after erection, be found not to comply with the contract provisions.

16.0 DELIVERY FAILURE AND TERMINATION / LIQUIDATED DAMAGES

16.1 Timely dispatch/delivery and completion of other schedules as stipulated in Order/Contract shall be the essence of Order/Contract. If the Seller/Contractor fails to complete the dispatch/delivery and other schedules within the time period stipulated in Order/Contract, or within any extension of time granted by Purchaser, it shall be lawful for purchaser to recover damages for breach of Order/Contract and hereunder.

16.2 DELAYED DELIVERY

16.2.1 a) **LD on mandatory spares portion** where delivery for mandatory spares is defined separately in the NIT. LD shall be applicable @ ½ percent and applicable GST thereon, of the total mandatory spares portion contract value excluding GST per week or part thereof, limiting to 10% of total contract value of mandatory spares excluding GST.

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b) **LD on Supply and E&C-** Purchaser reserves the right to recover from the Seller/ Contractor, as agreed liquidated damages and not by way of penalty, a sum equivalent to half ($\frac{1}{2}$) percent and applicable GST thereon, of the total contract price (main supply and E&C) excluding GST per week or part thereof, subject to a maximum of ten (10) percent of the total contract price (main supply and E&C) excluding GST, if E&C completion of the package is delayed beyond the contractual completion date or extension thereof as per the period stipulated in the Order/ Contract. Liquidated Damages will not be deducted from supply payment for delay in supply. LD on Mandatory spares shall be dealt as per clause (a) above.

c) **LD on service portion** (PG test, O&M, AMC, etc.) where delivery for services are defined separately in the NIT. LD shall be applicable @ $\frac{1}{2}$ percent and applicable GST thereon, of the total service portion contract value excluding GST per week or part thereof subject to a maximum of ten (10) percent of the total contract value of service portion excluding GST.

NOTE:

- i. Liquidated Damages will not be deducted from supply payment for delay in supply.
- ii. LR/RR date for indigenous supplies (Bill of Lading/AWB for Foreign supplies) shall be treated as the date of dispatch for levying LD as per clause 16. However, if receipted LR date for indigenous supply is beyond **30 days for FTL/ 45 days for PTL from the date of LR** (PTL to be clearly mentioned in LR), such excess period shall be considered for LD purpose irrespective of dispatch date. **Import General Manifest (IGM)/Bill of entry date** (whichever is earlier), for foreign supplies, is beyond 90 days from the date of Bill of Lading/AWB, such excess period shall be considered for LD purpose irrespective of dispatch date.
- iii. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s).
- iv. If Order/ Contract involves two or more Units/ Sets/ Lots/ Stages, then Liquidated Damages shall be levied on order/ contract value excluding GST of the delayed Unit/ Set/ Lot/ Stage, provided delivery stipulated in the Order/ Contract is Unit/ Set/ Lot/Stage wise, however total LD amount shall be limited to 10% of total order/ amended order value excluding GST of delayed Unit/ Set/ Lot/Stage. Any subsequent lot released (not envisaged in original contract) due to increase in quantity within permissible quantity variation shall be treated as separate lot for the purpose of LD.
- v. The sum specified above is not a penalty but a genuine pre-estimate of the loss/ damage which will be suffered by purchaser on account of delay on the part of the Contractor/Seller and the said amount will be deductible without proof of actual loss or damage caused by such delay

16.2.2 Purchaser reserves the right to purchase from elsewhere on account of and at the risk and cost of Seller/ Contractor, with notice to Seller/ Contractor, the plant/ equipment/ stores due for delivery but not so delivered, or their equivalent without cancelling the Order/ Contract in respect of plant/ equipment/ stores not yet due for delivery. The manner and method of such purchase shall be at the discretion of the Purchaser.

16.2.3 Purchaser reserves the right to cancel the Order/ Contract or a portion thereof for the plant/ equipment/ stores not so delivered at the risk and cost of the Seller/ Contractor and the Seller/ Contractor shall be liable to the Purchaser for any excess cost thereof.

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16.2.4 Seller/ Contractor shall continue performance of the Order/ Contract, under all circumstances, to the extent not cancelled.

17.0 INSURANCE

17.1 It is the entire responsibility of the successful bidder to insure their workmen against accident and injury while at work as required by the relevant rules and to pay compensation, if any, to their workmen as per statutory act. The successful bidder shall also insure their staff against accident/ injury with Workmen's compensation policy, group personal insurance, etc., as may be applicable.

17.2 The successful bidder shall take insurance covering for all materials (excluding plant material), tools & plants, manpower, workers, etc., required to be provided & deployed for the job by the bidder.

17.3 These insurance covers have to be taken prior to start of work and they shall make available the policy to Construction Manager, BHEL for necessary verification before start of work. However, irrespective of such verification/ acceptance, sole responsibility to maintain adequate insurance cover at all times during the period of contract shall lie with The successful bidder. Regarding aforesaid insurance cover, The successful bidder shall directly deal with the insurance company for all matters regarding the insurance in his scope.

17.4 BHEL/ customer shall arrange comprehensive insurance policy for total supply & services for main equipment/ system covering transit risks & loss, destruction or damage during handling at site, storage, civil works, erection, testing and commissioning up to trial operation/ completion of unit(s) including theft, sabotage, fire, lightning and other natural calamities.

17.5 Successful bidder shall timely intimate dispatches/ discrepancy during contract operation, to the underwriter. The name of the underwriter and Policy No shall be intimated in due course of time.

17.6 The successful bidder will take necessary precautions/ due care to protect the material at project site, while in their custody from any damage/ loss till the same is handed over to BHEL/ customer at project site. For lodging/ processing of insurance claim The successful bidder will submit necessary documents. BHEL reserve the right to recover the loss from The successful bidder in case the damage/ loss is due to negligence/ carelessness on the part of The successful bidder. In case of theft of material under Successful bidder's custody, the same shall be reported to police by The successful bidder immediately and copy of FIR and subsequently police investigation report shall be submitted to BHEL/ customer for taking up with insurance. However, this will not relieve The successful bidder of their contractual obligation for the materials in his custody.

17.7 In case the damage/ loss/ theft of materials are attributable to negligence/ failure in discharging the duties and obligations of The successful bidder, the expenses incurred for repair/ replacement of such components in excess of the amount realized from the underwriters, limited to Normal Excess (Deductible Franchise) shall be recovered from The successful bidder.

17.8 In case the claim is summarily rejected by the underwriters due to WILFUL NEGLIGENCE of The successful bidder, the entire cost of repair/replacement will be recovered from The successful bidder.

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17.9 It will be responsibility of The successful bidder to replenish the items lost/ damaged in time without hampering the schedule of work and without waiting for settlement of insurance claim. Amount received from the underwriters on settlement of insurance claim shall be passed on to The successful bidder as and when available.

18.0 **INTER-CHANGEABILITY AND CHANGES** (Applicable for spares and replacements)

18.1 All similar components or parts of similar equipment supplied by Seller/ Contractor shall be interchangeable with one another.

18.2 Even though all the work and materials necessary for satisfactory completion of the works may not be detailed in the specifications and schedules, the cost will be considered to be within the contract price and no extra charges shall be payable. However, if there are substantial changes in the specifications of the plant/ equipment/ stores, consequential changes in prices shall be mutually agreed between Purchaser and Seller/ Contractor.

19.0 **PACKING**

19.1 Packing shall be in conformity with specifications and shall be such as to ensure prevention of damages, corrosion, deterioration, shortages, pilferage and loss in transit or storage.

19.2 In case of shipment by sea, the packing shall be sea-worthy and of international standards.

19.3 Packing List shall be submitted as per standard format along with advance set of documents for claiming payment which must indicate:

- i. No. of boxes
- ii. Packing size.
- iii. Gross weight and net weight of each package.
- iv. Contents of the package with cross reference to BoM item code no. or item serial no.
- v. Quantity of each item separately.

The Packing list must cover all the BoM items and supplier to give the following undertaking in the Packing List:

“The Packing List provided herewith is as per the BoM approved under PO No.-.....dated-”

19.4 **PACKING FOR SPARES**

Different types of spares i.e. start-up/ commissioning spares and initial spares (Mandatory spares and recommended O&M spares) are to be packed separately. Mandatory and Recommended Spares shall not be packed with main equipment but shall be packed separately.

Packing of Mandatory Spares/Recommended spares should have a Red color band all around the container / package and words “MANDATORY / RECOMMENDED SPARES” written in red color. Project, Package description, BHEL’s PO No. and date s also be clearly mentioned on the box. One copy of laminated packing slip shall be placed inside the container and one copy shall be pasted on the cover of the container.

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19.5 COLOUR CODING OF TAGS/ MARKING/ STICKERS

19.5.1 Aluminum stickers are required to be attached to large components but plastic sheet tags should be tied with small components, giving details like purchase order, description of the component, quantity etc.

19.5.2 Tags should be of the color as mentioned below:

Main equipment	: Yellow or White tag
Mandatory spares	: Pink or Red tag
Start-up/ Commissioning spares	: Blue tag
O&M spares	: Green tag

19.5.3 Similar color scheme to be followed wherever stickers are pasted on components.

20.0 STORAGE INSTRUCTIONS

Successful tenderer shall be required to submit detailed instructions for storage of supplies within three months of date of issue of LOI /LOA/ Order/ Contract. In case storage instruction available in technical specification of the tender, same shall be followed by the vendors.

21.0 MATERIAL RECEIPT CERTIFICATE

Seller/ Contractor shall arrange Material Receipt Certificate from the project site, duly signed by Purchaser/ Owner Site Engineer after receipt & physical verification of the material at site.

22.0 CONSIGNEE'S RIGHT OF REJECTION

22.1 Notwithstanding any approval of Purchaser or Engineer in respect of plant/ equipment/ stores or materials or other particulars or work or workmanship involved in performance of order/ contract (with or without any test carried out by Seller/ Contractor or Inspection Agency or under direction of Contract Engineer), and notwithstanding delivery of the plant/ equipment/ stores where so provided to the consignee, it shall be lawful for the consignee, on behalf of the Purchaser, to reject the plant/ equipment/ stores or any part/ portion of consignment thereof, within 60 days after actual delivery at the stipulated place or destination, if such plant/ equipment/ stores or part/ portion of consignment thereof is not in conformity with terms and conditions of order/ contract whether on account of any loss, storage, deterioration or damage before dispatch or otherwise, whatsoever.

22.2 Rejected goods or materials shall be removed by Seller/ Contractor within a period of 30 days from the date of receipt of notice of such rejection. The expenses to be incurred in respect thereof shall be borne entirely by the Seller/ Contractor.

23.0 RISK IN STORES (FOR TURNKEY CONTRACTS)

Seller/ Contractor shall perform the order/ contract in all respects in accordance with terms and conditions thereof. Stores and every constituent part thereof, whether in possession or control of the Seller/ Contractor, his agents or servants, or a carrier, or in joint possession of Seller/ Contractor, his agent or servants and Purchaser, his agents or servants, shall remain in every respect at the risk of Seller/ Contractor until their actual delivery to consignee at the stipulated place or destination or where so provided in acceptance of offer, until their delivery to a person specified by Purchaser as interim

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consignee for the purpose of dispatch to the consignee. Seller/ Contractor shall be solely responsible for all losses, destructions, damages or deterioration to the plant/ equipment/ stores from any cause whatsoever, while the plant/ equipment/ stores await dispatch after approval by the Inspection Agency.

24.0 SHORTAGES / DAMAGES

Any shortages or damages during unloading, storage and handling at site, including at the time of erection and commissioning, shall be made good by the Seller/ Contractor at his risk and cost, to meet the project schedule. In case of faults/ discrepancies in any material, component, sub-assembly, assembly, etc., the same shall be supplied/ replenished free of cost to enable the equipment to be put to service.

25.0 CONFIDENTIALITY

Seller/ Contractor shall, at all times, undertake to maintain complete confidentiality of all data, information, software, drawings & documents, etc. belonging to the Purchaser and also of systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/ or finalized during the course of execution of order/ contract. i.e. Seller/Contractor shall in no way share or use such intellectual property of BHEL/purchaser to promote his own business with others. Purchaser reserves the right to claim damages from the Seller/Contractor, or take appropriate penal action as deemed fit against the Seller/Contractor, for any infringement of the provisions contained herein.

26.0 INTELLECTUAL PROPERTY & LICENSES

If any patent, design, trademark, trade secret or any other intellectual property rights apply to the delivery or accompanying documentation/drawings, Buyer or its customer shall be entitled to the legal use thereof free of charge by means of a non-exclusive, assignable, transferrable, sub-licensable, worldwide, perpetual license. All intellectual property rights that arise due to the execution of the delivery by the Seller and by its employees or third parties involved by the Seller for the performance of the contract shall be promptly notified by the Seller to the Buyer and shall be deemed to belong to the Buyer. The Seller shall be obligated to cooperate with the Buyer and do everything necessary to obtain or perfect the above mentioned rights in favor of the Buyer.

The Seller represents and guarantees that the delivery does not infringe on any of the intellectual property rights of third parties. In the event a third party makes a claim, the Seller shall also be obligated to do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of any (alleged) claims by third parties.

The Seller agrees to indemnify, defend and hold harmless the Buyer, its officers, employees, agents, representatives, successors, assignees or any of the Buyer's customers buying or using the goods or services specified herein, against any actual or alleged infringement of such intellectual property interests, claims by third parties in this regard and shall pay to the Buyer merely on demand without demur and without requiring the Buyer to furnish any proof of such claim, such sum as indicated in the demand towards any liabilities, damages, penalties, injuries, claims, demands, actions, cost and expenses etc. suffered as a result thereof.

The Seller agrees that its liability under this clause shall be unlimited

27.0 DEFAULT/ BREACH OF CONTRACT, INSOLVENCY AND RISK PURCHASE

27.1 In case of delays (beyond the maximum late delivery period as per LD clause) in completion of works or non-fulfilment of any other terms and conditions of the Contract as enumerated subsequently in this

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clause, then, without prejudice to its right to recover any expenses, losses or damages to which the Buyer may be put to incur or sustain by reason of the Seller/Contractor's default or breach of Order/Contract or to suspend business dealings with the Seller/Contractor in terms of the Buyers' Guidelines for Suspension of Business Dealings as applicable from time to time, the Buyer shall also be entitled to cancel the Order/ Contract either in whole or portion thereof without compensation to Seller. On the occurrence of any of the acts/omissions mentioned below, the Buyer may if it so desires, procure upon such terms and in such manner as deemed appropriate, plant/ equipment/ stores not so delivered or others of similar description where plant/ equipment/ stores exactly complying with particulars are not, in the opinion of the Buyer (which shall be final), readily procurable, at the risk and cost of the Seller.

The Seller shall be liable to the Buyer for any excess costs incurred thereof and the Seller shall continue the performance of the Order/Contract to the extent not cancelled under the provisions of this clause. The Seller shall on no account be entitled to any gain on such repurchases. If the Bidder does not agree to this Risk Purchase clause, BHEL reserves the right to reject the bid/offer of the Bidder.

The order/contract may be cancelled in whole or part thereof and Risk & Cost Clause in line with terms and conditions of PO/Contract may be invoked by the Buyer in any of the following cases:

- i. If the Seller/Contractor fails to deliver the goods or materials or any installment thereof within the period(s) fixed for such delivery or the Seller's poor progress of the supply/services vis-à-vis delivery/execution timeline as stipulated in the contract, backlog attributable to the Seller including unexecuted portion of supply does not appear to be executable within balance period available;
- ii. delivers goods or materials not of the contracted quality and failing to adhere to the contract specifications/execution methodology;
- iii. withdrawal from or repudiation/abandonment of the supply/services by the Seller before completion as per contract or if the Seller refuses or is unable to supply goods or materials covered by the order/Contract either in whole or in part or otherwise fails to perform the Order/Contract.
- iv. Non supply by the Seller within scheduled completion/delivery period as per contract or as extended from time to time for reasons attributable to the Seller;
- v. Termination of Contract on account of any other reason(s) attributable to the Seller.
- vi. Assignment, transfer, sub-letting of Contract without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
- vii. If the Seller be an individual or a Sole Proprietorship, in the event of death or insanity of the Seller.
- viii. If the Seller/Contractor being an individual or if a partnership firm thereof, shall at any time be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any assignment of the order/Contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm dissolved under the Partnership Act;
- ix. If the Seller/Contractor being a Company is wound up voluntarily or by order of a Court or a Receiver, Liquidator or Manager on behalf of the debenture holders and creditors is appointed or circumstances have arisen which entitles the Court of debenture holder and creditors to appoint a receiver, liquidator or manager
- x. Non- Compliance to any contractual condition or any other default attributable to the Seller.

Such defaulting vendor/Seller shall not be eligible to participate in re-tendering conducted on account of risk purchase made due to fault of such vendor/Seller.

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27.2 BHEL's right to go for Risk and Cost, Calculation of Risk and Cost amount & LD, recovery options to BHEL are given in detail in Annexure-V hereto.

28.0 **TERMINATION OF CONTRACT**

28.1 Purchaser shall have the right to cancel Order/ Contract, wholly or in part, in case they are obliged to do so on account of any decline, diminution, curtailment or stoppage of their business / customer requirement and in that event, the Seller/ Contractor compensation claim shall be settled mutually.

Purchaser shall have the right to cancel order/ contract at the risk and cost of Seller/ Contractor in case either the Seller/ Contractor himself or any of his representative or agent is found to have been a previous employee (rank of Executive Director or General Manager Incharge having powers of Executive Director or General Manager having powers of Executive Directors) of the Purchaser immediately before retirement and has within a period of one years of such retirement accepted the employment of the Seller/ Contractor either as a Seller/ Contractor or as an employee without having obtained prior permission of Purchaser.

28.2 In case of cancellation of main supply order/ contract, all other associated orders/ contracts like mandatory spares/ recommended spares/ E&C/ supervision of E&C would also get cancelled.

29.0 **TRANSFER, SUB-LETTING/ ASSIGNMENT/ SUB-CONTRACTING**

29.1 Seller/ Contractor shall not sublet, transfer or assign order/ contract or any part thereof or interest therein or benefit or advantage thereof save with the prior consent in writing of Purchaser. In the event of Seller/ Contractor sub-letting, transferring or assigning order/ contract or any part thereof or interest therein or benefit or advantage thereof without such permission, the Purchaser shall be entitled to cancel the Order/ Contract and to purchase the plant/ equipment/ stores from elsewhere at risk and costs of Seller/ Contractor and the Seller/ Contractor shall be liable for any loss or damage which Purchaser may sustain in consequence of or arising out of such risk purchase.

29.2 If Seller/ Contractor is an individual or proprietary concern and the individual or the proprietor dies or the partnership is dissolved or substantially affected, then unless the Purchaser is satisfied that legal representative of individual seller/ contractor or proprietor of proprietary concern and surviving partners of partnership firm are capable of carrying out and completing the order/ contract, the Purchaser shall be entitled to cancel the order/ contract as to its incomplete portion and without being in any way liable to payment of any compensation to estate of seller/ contractor and/ or to surviving partners of seller's/ contractor's firm on account of cancellation of the order/ contract.

29.3 Decision of Purchaser that legal representatives of deceased seller/ contractor or surviving partners of the seller's/ contractor's firm cannot carry out and complete the order/ contract shall be final and binding on the parties hereto.

29.4 Terms and Conditions shall not get affected in case of merger/ amalgamation/ takeover/ re-arrangement etc.

29.5 However, engagement of a labors supply contractor for providing labors for execution of work shall not be considered as transfer/ sub-letting of the job. No prior approval from BHEL for the same shall be required.

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30.0 **FORCE MAJEURE**

- 30.1 Notwithstanding anything contained in the contract, neither the Seller nor the Buyer shall be held responsible for total or partial non execution/non- performance of any of the contractual obligations, in case such execution/performance is impeded/prevented due to occurrence of a 'Force Majeure' event not within the reasonable control of the party affected, which materially interferes or directly affects the performance of the obligations or duties under the contract.

Force Majeure event means an event beyond the control of the parties to the contract including but not limited to war, Military operations of any nature, Act of God, earthquakes, floods, fire, quarantine restrictions, acts of public enemy, blockades, civil war, explosion, epidemics, insurgency, change in law or government policy etc.

- 30.2 The party claiming to be affected by such Force Majeure event shall notify/inform the other party in writing without delay within a reasonable period of the occurrence and cessation of such event specifying the Force Majeure event and its effect on performance of contractual obligations. In the event of the parties hereto not agreeing that a force majeure event has occurred, the parties shall submit the dispute(s) for resolution pursuant to the provisions hereunder, provided that the burden of proof as to whether a force majeure event has occurred shall be upon the party claiming such an event.
- 30.3 If it is agreed between the parties that a Force Majeure event has occurred and its effect continues for a period of 36 months, then either party shall be free to cancel the contract. However, if the effect of such event ceases within this period of 36 months, the performance of the obligations put on hold shall be resumed immediately.
- 30.4 Notwithstanding the above provisions, Purchaser shall reserve the right to cancel the Order/ Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of delivery and other schedules.
- 30.5 If a war like situation has developed in a country where Sellers's works (of this PO) is located or there is political instability or civil war and Indian Embassy located in that country/Indian Government forbids or advises for not having any business dealings in that country/ region/zone, then BHEL reserves the right to cancel the order/Contract without incurring any liability for any kind of payment or compensation to the Seller on that account.

31.0 **INDEMNIFICATION**

Seller/ Contractor shall fully indemnify and keep indemnified the Purchaser against all claims /losses/damages/demands/expenses of any nature of whatsoever nature arising during the course and out of the execution of this Order/ Contract on in connection of this contract.

32.0 **SETTLEMENT OF DISPUTES**

- 32.1 Except as otherwise specifically provided in the Order/ Contract, all disputes concerning questions of the facts arising under the Order/ Contract, shall be decided by Purchaser, subject to written appeal by the Seller/ Contractor to the Purchaser, whose decision shall be final.
- 32.2 Any dispute or difference shall be, to the extent possible, settled amicably between the parties hereto, failing which the disputed issues shall be settled through arbitration.

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32.3 Seller/ Contractor shall continue to perform the order/ contract, pending settlement of dispute(s).

33.0 **ARBITRATION & CONCILIATION**

33.1 **CONCILIATION**

If at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the agreement, contract), which the Parties are unable to settle mutually, arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee (IEC) to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators under BHEL Conciliation Scheme.

Notes:

- i. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
- ii. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.
- iii. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure (Annexure-X) to this GCC. The Procedure (Annexure-X) together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.
- iv. The Contractor/ supplier hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure (Annexure-X) to this GCC from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure (Annexure-X) with effect from the date as intimated by BHEL to it.
- iv. The venue of conciliation shall be Delhi/ New Delhi/ PO issuing agency city where PO is issued by BHEL Power Sector Regional HQ

33.2 **ARBITRATION**

Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the Parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity of execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the contract, then, either Party may, by a notice in terms of Section 21 of Arbitration & Conciliation Act in writing to the other Party commence arbitration. The notice shall as far as possible contain the particulars of all claims to be referred to arbitration.

The arbitration shall be conducted by Sole Arbitrator to be appointed mutually by the Competent Authority of BHEL (purchaser) & Seller within the statutory period as applicable. As far as practicable, names of 2 or more persons shall be forwarded to the Seller for seeking consent of the Seller to one of the names proposed for appointment as arbitrator in the case. If the parties fail to agree on the name of Sole Arbitrator, then appointment shall be made as per the provisions of section 11 of the Arbitration & Conciliation Act.

The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the Parties. The language of Arbitration shall be English.

Subject as aforesaid, the provisions of Arbitration of Conciliation Act 1996 (India) or statutory modification/ Amendments or re-enactments thereof and the rules made thereunder and for the time

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being in force shall apply to the arbitration proceedings under this clause. The seat and venue of arbitration shall be Delhi/ New Delhi/ PO issuing agency city where PO is issued by BHEL Power Sector Regional HQ

The cost of arbitration shall be borne equally by the parties' subject to the final apportionment of the cost of the arbitration as per the award/order of the arbitrator.

Subject to the arbitration in terms of Clause above, the Courts at Delhi-NCR/ (PO issuing agency city- where PO has been issued by BHEL Power Sector Regional HQ) shall have exclusive jurisdiction over any matter arising out of or in connection with this contract.

Notwithstanding the existence or any dispute or difference and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

33.3 IN CASE OF CONTRACT WITH PUBLIC SECTOR ENTERPRISE (PSE) OR A GOVERNMENT DEPARTMENT & INSTITUTES, THE FOLLOWING SHALL BE APPLICABLE

In the event of any dispute or difference relating to the interpretation and application of the provisions of the commercial contract between Central Public Sector Enterprises(CPSEs)/Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning railways, Income Tax, Customs and Excise Departments) such dispute or difference shall be taken up by either party for resolution through Administrative Mechanism for Resolution of CPSEs Disputes(AMRCD) as mentioned in Department of Public Enterprises(DPE) office Memorandum No. 4 (1)/2013-DPE(GM)/FTS-1835 dated 22.05.2018 as amended from time to time.

A copy of the extant Department of Public Enterprises (DPE) Office Memorandum is available on Govt. of India website and the same shall apply with any amendments as made from time to time.

34.0 LAWS GOVERNING THE CONTRACT

34.1 Contract, including all matters connected with contract, shall be governed by the Indian Law, both substantive and procedural, for the time being in force including modification thereto, and shall be subject to the exclusive jurisdiction of the Indian courts at Delhi-NCR/ (PO issuing agency city- where PO has been issued by BHEL Power Sector Regional HQ).

It shall be responsibility of the vendor to ensure compliance of Labor laws, safety regulations, workmen compensation, insurance, BOCW act or other relevant acts.

34.2 **HEALTH SAFETY AND ENVIRONMENT GUIDELINES (HSE)** of BHEL are available on www.pem.bhel.com vendor section for compliance for erection (composite) contracts.

35.0 JURISDICTION OF COURT

Courts at Delhi-NCR/ (PO issuing agency city- where PO has been issued by BHEL Power Sector Regional HQ) shall have exclusive jurisdiction to decide the dispute, if any, arising out of or in respect of the contract(s) to which these conditions are applicable.

36.0 **HEALTH SAFETY AND ENVIRONMENT GUIDELINES (HSE)** of BHEL are available on www.pem.bhel.com under tenders/EOI > Important instructions to bidders compliance for by supplier/ seller/ contractor at given link- <https://www.pem.bhel.com/Documents/GCC/HSE%20Plan.pdf>

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37.0 SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM

- 37.1.1 A detailed plan/ programme for completion of the contractual scope of work as per the time schedule given in the contract shall be jointly agreed between BHEL and Contractor, before commencement of work. The above programme shall be supported by month/ Quarter wise deployment of resources viz. Manpower, T&P, Consumables, etc. Progress will be reviewed periodically (Monthly/ Quarterly) vis a vis this jointly agreed programme. Joint periodical progress reports monthly/ Quarterly and other reports/information including manpower, consumables, T&P mobilization etc. as applicable shall be made. These progress reports shall also form basis for evaluating agency time extension proposal.
- 37.1.2 Monthly/ Quarterly progress review between BHEL and Contractor shall be based on the agreed program as above, availability of inputs/fronts etc., and constraints if any, as per prescribed formats.
- 37.1.3 The monthly/ Quarterly Joint progress review shall record shortfalls attributable to (i) Contractor, (ii) Force Majeure Conditions, and (iii) BHEL
- 37.1.4 Online performance monitoring system as defined in NIT will be used for quarterly/ overall performance review of the vendors.

38.0 PHYTOSANITARY CERTIFICATE:

- i. As per the Indian Law, all consignments being imported into India by air/sea require a phytosanitary certificate from the country of origin-if articles have been packed with wooden packaging materials. This is mandatory. Please confirm in your offer/dispatch documents that the required phytosanitary certificate will be submitted.
- ii. Packaging material means any kind of material of plant origin used for packing which include, hay, straw wood shavings, wood chips, saw dust, wood waste, wooden pallets, dunnage mats, wooden packages, coir pith, peat or sphagnum moss etc.

39.0 HOLD ON CONTRACT EXECUTION CASES OTHER THAN FORCE MAJEURE

In case of uncertainty regarding lifting of HOLD on contract execution relating to any activity put by Buyer/BHEL (because of any reason other than Force Majeure) or by end customer (cancellation or hold on project), the contract/Purchase Order may be short closed by Buyer/BHEL after 3 years from date of imposition of HOLD without prejudice to any claim of either party with regard to the executed portion of the contract. However, all future obligations of the Buyer and Seller with respect to the contract/Purchase Order shall come to end in case of such short closure.

40.0 NON DISCLOSURE AND INFORMATION OBLIGATIONS

All drawing and technical documents or technical information whether contained in physical form or in electronic form or any oral information that is subsequently transcribed in to physical/electronic form etc. (hereinafter referred to as "Technical Information") relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the disclosing party. Technical Information belonging to one party and received by the other party, shall be treated as Confidential Information and shall not, without the express written consent of such disclosing party, be used by the receiving party or any of its agents, employees, representatives etc., for any other purpose, other than that, for which such Technical Information was

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provided. Such Technical Information shall not, without the prior written consent of the disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to a third party.

The Seller shall provide Buyer with all information pertaining to the delivery in so far as it could be of importance to Buyer. The Seller shall not reveal confidential information (including price) to its own employees not involved with the tender/ Contract & its execution and delivery or to third parties, or to make use of such information pertaining to any data, designs, drawings, specifications and other information furnished to it by the Buyer, unless Buyer has agreed to this in writing beforehand. The Seller shall not be entitled to use the Buyer's name in advertisements and other commercial publications without prior written permission from Buyer.

Upon completion, cancellation or termination of this order, Seller shall return to the Buyer all such data, designs drawings, specifications and other information, including copies made by Seller.

DRAWINGS, PATTERNS & TOOLS: All drawings, patterns & tools supplied by BHEL or made at BHEL's expense are BHEL's property. These cannot be used or referred to any other party and must only be used in the execution of BHEL's orders. These should be preserved at the seller's/ contractor's cost for a period of not less than 5 years. Patterns & tools should be returned to BHEL within 90 days of issue of the same or completion of work, whichever is later.

Bidder/Seller/ Contractor shall, at all times, maintain complete confidentiality of all technical information including data, information, software, drawings & documents, etc. belonging to the Buyer and also of systems, procedures, reports, input documents, manuals, results and any other company documents discussed and/ or finalized during the course of execution of order/ contract.

The Confidentiality obligation of the Seller under this Agreement shall survive the Expiration/early termination of this contract. The above undertaking in this clause shall, however, not apply to Technical Information which:

- i. through no fault of the receiving Party, is or comes in public domain through publication or otherwise, or
- ii. the receiving Party can establish was in its possession, without any restrictions as to its disclosure at the time of its receipt, or
- iii. is subsequently lawfully acquired by the receiving Party independently of the other Party, or
- iv. receiving Party is required to disclose to comply with applicable law, rule, regulation, or court order or other compulsory process of a court or other governmental body.

If the Seller, in order to perform its Contract needs to disclose to a subcontractor or suppliers the Technical Information received from the other Party e.g. for the purpose of use, manufacture, repair, maintenance and purchase, then such first mentioned Party shall have the right to do so to the extent needed for such purpose, but shall first obtain from such subcontractor or supplier a confidentiality undertaking consistent with the provisions of this Clause and submit to BHEL for records. In case of failure of seller to ensure compliance of this clause, he seller shall be liable to compensate BHEL for any damage/ loss whatsoever suffered by BHEL as a result of breach of this clause.

41.0 NON WAIVER OF DEFAULTS

If any individual provision of the Contract is held by a Court or any other Responsible Authority to be unlawful, invalid, void or unenforceable, that provision shall be deemed to be deleted from the Contract and shall be of no force or effect and this Contract shall remain in full force and effect as if such provision had not originally been contained in this Contract and the other provisions shall not be affected. In the event of any such deletion the Parties shall negotiate in good faith in order to agree to terms of a mutually acceptable and satisfactory alternative provision in place of the provision so deleted.

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No waiver shall be effective unless it is communicated in writing to the other party. A waiver accorded on one occasion shall not constitute a continuing waiver in respect of such such/similar breach/event in future and separate waiver shall be necessary for each event/breach.

The failure of BHEL to exercise any contractual right or remedy or to enforce any of the terms and conditions of this Order/Contract or to exercise any right or privilege granted to BHEL under this Contract or under law shall not constitute a waiver thereof or constitute a waiver of any right or remedy arising from any other breach of the Contract nor shall it release the seller from any of the warranties or obligations of the Order/Contract and the same shall continue in full force and effect.

42.0 QUALITY ASSURANCE DOCUMENTS (AS APPLICABLE)

The vendor shall be required to submit the following Quality Assurance Documents (in original + one copy) within 2 weeks after dispatch of the equipment (as applicable).

- a) Test report of components.
- b) Non-destructive examination results/ reports including radiography interpretation reports.
- c) Welder identification list listing welders and welding operator's qualification procedures and welding identification symbols.
- d) Sketches and drawings used for indicating methods of traceability of the radiographs to the location of the equipment.
- e) Stress relief time temperature charts.
- f) Factory test results for testing required as per applicable codes and standards referred to in the specification.
- g) Inspection Report duly signed by QA Personnel of BHEL/ Third Party/and customer and vendor for the agreed inspection hold points. During course of inspection the following will also be recorded:
 - i. When some important work repair work is involved to make the job acceptable.
 - ii. The repair works remain part of the accepted product quality.
 - iii. Letter of conformity certifying that that requirement is in compliance with finalised
 - iv. specification requirements.

43.0 EXTENSION OF TIME FOR COMPLETION

a) If the completion of work as detailed in the scope of work gets delayed beyond the contract/ completion period, the seller/ contractor shall request for an extension of the contract and BHEL at its discretion may extend the contract as per procedure prescribed in clause 43.0 (b), (c) & (d).

Pending finalization of extension of time, payment to vendors for supply/E&C executed during such periods will be done only in excess of maximum LD amount as per LD clause for delayed delivery (clause no 16.1). On finalization of extension of time, payments to vendor shall be regularized in line with approved time extension proposal.

b) Based on the reviews jointly signed as per clause no 37.1, the scope balance at the end of original contract period less the backlog attributable to the seller/ contractor shall be quantified, and the number of months of 'Time extension' required for completion of the same shall be jointly worked out. Within this period of 'Time extension', the seller/ contractor is bound to complete the portion of backlog attributable to the seller/ contractor. Any further 'Time extension' or 'Time extensions' at the end of the previous extension shall be worked out similarly.

c) However, if any 'Time extension' is granted to the seller/ contractor to facilitate continuation of work and completion of contract, due to backlog attributable to the seller/ contractor alone, then it shall be without

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prejudice to the rights of BHEL to impose LD in line with clause no 16.1 for the delays attributable to the seller/ contractor, in addition to any other actions BHEL may wish to take at the risk and cost of seller/ contractor.

d) A joint program shall be drawn for the balance amount of work to be completed during the period of 'Time Extension'. Review of the program and record of shortfall shall be done as per clause no 37.1.

e) During time extension of E&C contract, Time extension for Supply contract shall also be issued based on delay analysis of E&C contract.

44.0 OVER RUN CHARGES (Only for E&C contract): - This shall be applicable only for Erection and commissioning (E&C) contract:

i. In case the E & C scheduled completion time gets extended beyond the period as stated in E&C LOI / LOA due to reasons not attributable to the contractor, the contractor shall be considered for payment of over run charges @1% of E&C contract value (excluding taxes) limiting up to Rs 1,00,000 per month or as defined in SCC subject to total ORC limited to 10% of E&C contract value (excluding taxes) . on fulfilment of following conditions:-

1. Initial mobilisation of manpower, T&P has been completed and Erection work started by agency.
2. Materials worth 80% of supply contract value have been received at site. (20% assumed as ready stock & shelf life items)
3. The reasons for delay in completion of work are not attributable to contractor but however subject to the provisions of clause 30 of GCC related to "Force Majeure".
4. Contractor achieves the month wise targets fixed during the overrun period for which ORC is being claimed. No payment shall be paid for the month, if the targets are not achieved for that month due to reasons attributable to the contractor. Monthly package Joint review shall form basis for such evaluation. In case of dispute about the same, BHEL engineer decision shall be final.
5. The contractor maintains sufficient workforce and other resources required for proper E&C/storage of material already received at site.

45.0 PRICE VARIATION CLAUSE: - PVC (as per SCC / NIT) shall be applicable for Supply, Mandatory Spares & E&C portions, if there is delay beyond original overall completion schedule not attributable to vendor.

46.0 ADVANCE

- i. **ADVANCE:** Normally no advance is payable to the contractor. However, advance payment in exceptional circumstances shall be interest bearing and secured though a Bank Guarantee and shall be limited to a maximum of 5% of contract value. This 'Interest Bearing Recoverable Advance' shall be payable in not less than two instalments with any of the instalment not exceeding 60% of the total eligible advance.
- ii. **ADDITIONAL INTERIM ADVANCE:** In exceptional circumstances, with due justification, Competent Authority of BHEL is empowered to approve proposals for payment of additional interim interest bearing advance against Bank Guarantee, for resource augmentation towards expediting work for project implementation.

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- iii. Bank Guarantee towards 'Interest Bearing Recoverable Advance' shall be at least 110% of the advance so as to enable recovery of not only principle amount but also the interest portion, if so required.
- iv. Contractor shall establish the utilization of advance drawn before the release of next instalment.
- v. Payment and recovery of Interest Bearing Recoverable advance shall be at the sole discretion of BHEL and shall not be a subject matter of arbitration.
- vi. The rate of interest applicable for the above advances shall be the base rate of State Bank of India prevailing on the date of release of advance plus 6%, and such rate will remain fixed till the total advance amount is recovered.
- vii. Unadjusted amount of advances paid shall not exceed 5% of the total contract value at any point of time. Recovery of advances shall be made from the due Bills progressively such that the advance amounts paid along with the interest is fully recovered by the time the contractor's billing reaches 90% of contract value.
- viii. Recovery rate per month shall be the sum of:
 - Not less than 10% of Running Bill amount
 - Simple interest up to the date of due Bill on the outstanding Principle amount/amounts
- ix. Contractor to submit Bank Guarantee as per prescribed formats for each of the advance and shall be valid for at least one year or the recovery duration whichever is earlier. In case the recovery of dues does not get completed within the aforesaid BG period, the contractor shall renew the BG or submit fresh BG for the outstanding amount, valid for at least one year or the remaining recovery duration whichever is earlier.
- x. BHEL is entitled to make recovery of the entire outstanding amount in case the contractor fails to comply with the BG requirement.

47.0 RESTRICTIONS UNDER RULE 144(xi) OF THE GENERAL FINANCIAL RULES (GFRs), 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.
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder from a country which shares a land border with India" for the purpose of this Order 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:

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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 shareholder's 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 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- The above clause shall not be applicable for the bidders from those countries (even if sharing a land order with India) to which the Government of India (GoI) has extended lines of credit or in which the GoI is engaged in development work.

Bidders to submit the certification (as applicable) as per Order issued by Ministry of Finance.



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HEAVY
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LIMITED
(BHEL)**

**GENERAL CONDITIONS
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ANNEXURES

ANNEXURE No.	DESCRIPTION OF ANNEXURES
I	OFFER SUBMISSION AS PER NIT
II	DEVIATION SHEET (COST OF WITHDRAWAL)
III	BANK GUARANTEE FOR PERFORMANCE SECURITY
IV	NON-CONFORMANCE REQUEST (NCR)
V	RISK AND COST CLAUSE
VI	NEFT DETAILS
VII	LOADING CRITERA
VIII	INTEGRITY PACT
IX	LIST OF PACKAGES WITH PG TEST AND REQUIRED FINAL DOCUMENTS
X	PROCEDURE OF CONCILIATION
XI	GSTN CODES OF BHEL
XII	DEFINITION OF SCCCCESSFUL COMMISSIONING, TRIAL OPERATION, HANDOVER, PG TEST & PBG RELEASE CLAUSE
XIII	PACKAGE WISE VARIATION IN CONTRACT VALUE
XIV, XV & XVI	FORMATS FOR MONTHLY/ QUATERLY PROGRESS REVIEW

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ANNEXURE – I

(To be filled up by the Bidder)

Ref. No. :

Date :

M/s Bharat Heavy Electricals Ltd.,
Project Engineering Management,
PPEI Building, HRD & ESI Complex,
Plot No. 25, Sector – 16A,
NOIDA – 201 301 (U.P.)

Attention: Shri

Dear Sir,

1. Having examined the tender documents against your tender Enquiry No. _____ dated _____ and having understood the provisions of the said tender documents and having thoroughly studied the requirements of BHEL related to the work tendered for, in connection with _____ (name of work & project site), we hereby submit our offer for the proposed work in accordance with terms and conditions mentioned in the tender documents, at the prices quoted by us in your price schedule format and as per the indicated delivery schedule.
2. If the work or any part thereof is awarded to us, we undertake to submit security-cum-contract performance bank guarantee as per your requirement.
3. We have annexed to this tender the following documents: -

Part-I (Techno Commercial Bid) - in a properly sealed cover/ uploaded on BHEL e-procurement website

- i) Complete Techno-Commercial Offer (in two sets).
- ii) Unpriced copy of deviation sheet (cost of withdrawal) – annexure -II
- iii) Unpriced copy of Price Schedule using format given by BHEL.
- iv) Any other documents (please specify).

Part-II (Price Bid along with Priced Annexure-II) - in a separate, properly sealed cover, in the format given by BHEL/ uploaded (filled in the online price schedule) of BHEL e-procurement website

Thanking you,

Yours faithfully,

(Signature of the bidder with Name, Designation and Company's Seal)



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ANNEXURE-II: DEVIATION SHEET (COST OF WITHDRAWAL)						
PROJECT:-						
PACKAGE:-						
TENDER ENQUIRY REFERENCE:-						
NAME OF VENDOR:-						
SL NO	VOLUME/ SECTION	PAGE NO.	CLAUSE NO.	TECHNICAL SPECIFICATION/ TENDER DOCUMENT	COMPLETE DESCRIPTION OF DEVIATION	COST OF WITHDRAWAL OF DEVIATION
REFERENCE OF PRICE SCHEDULE ON WHICH COST OF WITHDRAWAL OF DEVIATION IS APPLICABLE						
NATURE OF COST OF WITHDRAWAL OF DEVIATION (POSITIVE/NEGATIVE)						
REASON FOR QUOTING DEVIATION						
TECHNICAL DEVIATIONS						
COMMERCIAL DEVIATIONS						
PARTICULARS OF BIDDERS' AUTHORISED REPRESENTATIVE						
NAME				DESIGNATIONS		SIGN & DATE
NOTES:						
1. Cost of withdrawal of deviation will be applicable on the basic price (i.e. excluding taxes, duties & freight) only.						
2. All the bidders have to list out all their Technical & Commercial Deviations (if any) in detail in the above format.						
3. Any deviation not mentioned above and shown separately or found in other, will not be taken cognizance of.						
4. Bidder shall submit duly filled unpriced copy of above format indicating "quoted" in "cost of withdrawal of deviation" column of the schedule above along with their Techno-commercial offer, wherever applicable. In the absence of same, such deviation(s) shall not be considered and offer shall be considered in total compliance to NIT.						
5. Bidder shall furnish price copy of above format along with price bid.						
6. The final decision of acceptance/rejection of the deviations quoted by the bidder shall be at discretion of the Purchaser.						
7. Bidders to note that any deviation (technical/commercial) not listed in above and asked after Part-I opening shall not be considered.						
8. For deviations w.r.t. Credit Period, Liquidated damages, Firm prices if a bidder chooses not to give any cost of withdrawal of deviation (loading as per Annexure-VII), will apply. For any other deviation mentioned in unpriced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Priced bid, the cost of withdrawal of deviation shall be taken as NIL.						
9. Any deviation mentioned in priced copy of this format, but not mentioned in the unpriced copy, shall not be considered.						
10. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in unpriced copy of this format.						
11. Cost of withdrawal is to be given separately for each deviation. In no event bidder should club cost of withdrawal of more than one deviation else cost of withdrawal of such deviations which have been clubbed together shall be considered as NIL.						
12. In case nature of cost of withdrawal (positive/negative) is not specified it shall be assumed as positive.						
13. In case of discrepancy in the nature of impact (positive/negative), positive will be considered for evaluation and negative for pricing.						

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ANNEXURE-III

CONTRACT PERFORMANCE BANK GUARANTEE

Bank Guarantee No: _____

Date: _____

To,

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited 1 (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at1 through its Unit at..... (name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at2 hereinafter referred to as the 'Vendor/Contractor/Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated3 valued at Rs 4 (Rupees)/ FC (in words) for..... 5 (hereinafter called the 'Contract') and the Vendor/Contractor/Seller having agreed to provide a Contract Performance Guarantee, equivalent to % (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we, , (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer a maximum amount Rs 6 (Rupees) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor/Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor/Contractors/Supplier shall have no claim against us for making such payment.

We the bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

We BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor/Contractor/Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor/Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor/Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor/Contractor/Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor/Contractor/Supplier and notwithstanding any

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security or other guarantee that the Employer may have in relation to the Vendor/Contractor/Supplier 's liabilities.

This Guarantee shall remain in force up to and including..... 7 and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor/Contractor/Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the8 we shall be discharged from all liabilities under this guarantee thereafter.

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a. The liability of the Bank under this Guarantee shall not exceed6
- b. This Guarantee shall be valid up to7
- c. Unless the Bank is served a written claim or demand on or before..... 8 all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We,Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

Dated..... ..

For and on behalf of

Place of Issue..... ..

(Name of the Bank)

1 NAME AND ADDRESS OF EMPLOYER i.e. Bharat Heavy Electricals Limited

2 NAME AND ADDRESS OF THE VENDOR / CONTRACTOR / SUPPLIER.

3 DETAILS ABOUT THE NOTICE OF AWARD/ CONTRACT REFERENCE

4 CONTRACT VALUE

5 PROJECT/SUPPLY DETAILS

6 BG AMOUNT IN FIGURES AND WORDS

7 VALIDITY DATE

8 DATE OF EXPIRY OF CLAIM PERIOD

Note:

1. Units are advised that expiry of claim period may be kept 3-6 months after validity date. It may be ensured that the same is in line with the agreement/ contract entered with the vendor.
2. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Contractor/Supplier/Bank issuing the guarantee.
3. In line with the GCC, SCC and contractual terms, Unit may carry out minor modifications in the Standard BG Formats. If required, such modifications may be carried out after taking up appropriately with the Unit/Region's Law Deptt.
4. In Case of Bank Guarantees submitted by Foreign Vendors-

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- a) From Nationalized Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in the town/ city or at nearest branch where the Unit (New Delhi for POs issued from PEM Noida/ PO issuing agency) is located i.e. Demand can be presented at the Branch located in the town/ city or at nearest branch where the Unit is located.
- b) From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)
- b.1 In such cases, in the Tender Enquiry/ Contract itself, it may be clearly specified that Bank Guarantee issued by **any of the Consortium Banks** only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter- Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It is advisable that all charges for issuance of Bank Guarantee/ Counter- Guarantee should be borne by the Foreign Vendor. The tender stipulation should clearly specify these requirements.
- b 2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 will required to be followed.
- b 3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time). The BG Format provided to them should clearly specify the same.

or & On behalf of Guarantee issuing bank
(Office Seal)

Name:
E-mail ID:
Contact number:

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ANNEXURE – IV

NON-CONFORMANCE REQUEST (NCR) (Granting of NCR does not entitle any increase in price or extension of schedule, to vendor)			
PART-I (TO BE FILLED BY VENDOR)			
NAME OF VENDOR:		NCR NUMBER:	
SPECIFICATION TITLE:		SPECIFICATION NUMBER:	
PROJECT SITE:		LOI/ PO NUMBER:	
DRAWING TITLE:		DRAWING NUMBER:	
DATE BY WHICH DECISION REQUIRED ON NCR:			
SL. NO.	REQUIREMENT AS PER SPECIFICATION/ DRAWING	NON-CONFORMANCE OBSERVED/ REQUESTED	REASON
PROPOSED ACTION:			
FORWARDED ☐ CE ☐ IA TO ☐ SITE IA (2 Copies)			
		SIGNATURE	DATE
		SEAL	

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ANNEXURE – IV (contd.)

NON-CONFORMANCE REQUEST (NCR)

(GRANTING OF NCR DOES NOT ENTITLE ANY INCREASE IN PRICE OR EXTENTION OF SCHEDULE, TO VENDOR)

PART – II (TO BE FILLED BY IA OR SITE IA)

☐ NCR RECOMMENDED
☐ NCR RECOMMENDED AS PER REMARKS BELOW
☐ NCR NOT RECOMMENDED

REMARKS:

ACTION

☐ Returned to Vendor
☐ Forwarded to CE (PEM) (2 Copies)

NAME

SIGNATURE

DATE

PART-III (TO BE FILLED IN BY BHEL)

☐ NCR APPROVED
☐ NCR APPROVED AS PER REMARKS
☐ NCR NOT APPROVED

REMARKS:

A) WITHOUT INCREASE IN CONTRACT PRICE
B) WITH REDUCTION IN CONTRACT PRICE (DETAILS ENCLOSED)
C) WITHOUT AFFECTING PROJECT SCHEDULE

ACTION

☐ Returned to Vendor (in case NCR not approved)
☐ Forwarded to MM/ PG on _____
(For issue of PO amendment)

NAME

SIGNATURE

DATE

NOTE: Project Engineer (PEM) shall approve the NCR after obtaining consent/ approval of affected departments/ agencies and also of SH and DH.

PART- IV (TO BE FILLED BY CONTRACT ENGINEER (PEM))

PO No.

PO Date

PO Amendment No.

PO Amendment Date

DISTRIBUTION: ☐ VENDOR

(1COPY EACH) ☐ SITE IA

☐ IA

☐ PEM-ENGG.

NAME

SIGNATURE

DATE

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ANNEXURE – IV (contd.)

INSTRUCTIONS FOR VENDOR REGARDING NON-CONFORMANCE REQUEST (NCR)

1. Photo-copies of the NCR Form can be used by the Vendor, whenever required.
2. Non-conformances, due to the following and/ or other reasons, shall be raised by the Vendor, in this form, in order to obtain BHEL decision on the same.
 - a) Changes from Bid Specification and Deviations agreed during negotiations.

OR

Changes from Contract Specification required as a result of detailed design and preparation of drawings by the Vendor.

 - b) Changes in Contract Drawings and Documents approved by BHEL.
 - c) Inaccurate workmanship, procedure or practice.
 - d) Use of material other than the size, type of grade as called for in the specification/ drawing.
3. Vendor shall send two copies of the NCR to :
 - a) Contract Engineer (CE) of BHEL/ PEM for non-conformances required as a result of detailed design and preparation of drawings by the Vendor etc.
 - b) Inspection Agency (IA) for all non-conformances during manufacture/ fabrication, assembly etc.
 - c) Site Inspection Agency (Site IA) for all non-conformances during site fabrication, erection and commissioning.
4. Vendor shall mark copies of NCRs and all correspondence, in this respect, to Contract Engineer (CE) of BHEL/ PEM.
5. Names and addresses of Inspection Agency and Site Inspection Agency are given in the Letter of Intent/ Purchase Order.
6. Non-conformances raised in this form only, will be entertained by BHEL.
7. NCRs shall be kept to a minimum.
8. A summary of non-conformances granted, if any, shall be included by the Vendor in the Quality Assurance Document Package to be forwarded to BHEL & Customer, on satisfactory completion of inspection and tests.
9. Granting of NCR by BHEL does not entitle the Vendor to any increase in price or extension of schedule.

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ANNEXURE-V

(RISK AND COST CLAUSE)

1. BHEL reserves the right to terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor *after due notice of a period of 14 days' by BHEL* in any of the following cases:
- i) If the Seller/Contractor fails to deliver the goods or materials or any instalment thereof within the period(s) fixed for such delivery or the Seller's poor progress of the supply/ services vis-a-vis delivery/execution timeline as stipulated in the Contract, backlog attributable to seller including unexecuted portion of supply does not appear to be executable within balance available period;
 - ii) Delivers goods or materials not of the contracted quality and failing to adhere to the contract specifications;
 - iii) Withdrawal from or repudiation/ abandonment of the supply/ services by Seller before completion as per contract or if the Seller refuses or is unable to supply goods or materials covered by the Order/Contract either in whole or in part or otherwise fails to perform the Order/Contract;
 - iv) Non-supply by the Seller within scheduled completion/delivery period as per Contract or as extended from time to time, for the reasons attributable to the Seller;
 - v) Termination of Contract on account of any other reason (s) attributable to Seller.
 - vi) Assignment, transfer, subletting of Contract without BHEL's written permission resulting in termination of Contract or part thereof by BHEL.
 - vii) If the Seller be an individual or a sole proprietorship Firm, in the event of the death or insanity of the Seller;
 - viii) If the Seller/Contractor being an individual or if a firm on a partnership thereof, shall at any time, be adjudged insolvent or shall have a receiving order for administration of his estate made against him or shall take any proceeding for composition under any Insolvency Act for the time being in force or make any assignment of the Order/Contract or enter into any arrangement or composition with his creditors or suspend payment or if the firm dissolved under the Partnership Act;
 - ix) If the Seller/Contractor being a company is wound up voluntarily or by order of a Court or a Receiver, Liquidator or Manager on behalf of the debenture holders and creditors is appointed or circumstances shall have arisen which entitles the Court of debenture holder and creditors to appoint a receiver, liquidator or manager;
 - x) Non-compliance to any contractual condition or any other default attributable to Seller.

1.1 Risk & Cost Amount against Balance Work:

Risk & Cost amount against balance work shall be calculated as follows:

$$\text{Risk \& Cost Amount} = [(A-B) + (A \times H/100)]$$

Where,

A= Value of Balance scope of Work (*) as per rates of new contract

B= Value of Balance scope of Work (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC & ORC, if any.

H = Overhead Factor to be taken as 5

In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).

1.2 * Balance scope of work (in case of termination of contract):

Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work for calculating risk & cost amount.

Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities.

Items for which total quantities to be executed have exceeded the Contract Quantities based on drawings issued to contractor from time to time till issue of Termination letter, then for these items total Quantities as per issued drawings would be deemed to be contract quantities.

Substitute/ extra items whose rates have already been approved would form part of contract quantities for this purpose.

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Substitute/ extra items which have been executed but rates have not been approved, would also form part of contract quantities for this purpose and rates of such items shall be determined in line with contractual provisions.

However, increase in quantities on account of additional scope in new tender shall not be considered for this purpose.

NOTE: In case portion of work is being withdrawn at risk & cost of contractor instead of termination of contract, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work' for calculating Risk & Cost amount.

1.3 **LD against delay in executed work in case of Termination of Contract:**

LD against delay in executed work shall be calculated in line with LD clause no. 16 of GCC, for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work till termination of contract.

Method for calculation of LD against delay in executed work in case of termination of contract" is given below.

- i. Let the time period from scheduled date of start of work till termination of contract excluding the period of Hold (if any) not attributable to contractor = T1
- ii. Let the value of executed work till the time of termination of contract = X
- iii. Let the Total Executable Value of work for which inputs/fronts were made available to contractor and were planned for execution till termination of contract = Y
- iv. Delay in executed work attributable to contractor i.e. $T2 = [1 - (X/Y)] \times T1$
- v. LD shall be calculated in line with LD clause (clause 16) of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

2. **Recoveries arising out of Risk & Cost and LD or any other recoveries due from Contractor**

Without prejudice to the other means of recovery of such dues from the Seller recoveries from the Seller on whom risk & cost has been invoked shall be made from the following:

- a) Dues available in the form of Bills payable to seller, SD, BGs against the same contract.
- b) Dues payable to seller against other contracts, SDs, BGs in the same Region/Unit/ Division of BHEL.
- c) Dues payable to seller against other contracts, SDs, BGs in the different Region/Unit/ division of BHEL.

In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.

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ANNEXURE– VI

NEFT APPLICATION FORM

Name of the Vendor Name of the Bank Address of the Bank Vendor's A/c no

Type of A/c

IFSC Code

RTSG Code

Vendor's e-mail address

Authorized Signatory Seal

ABOVE DETAILS ARE TO BE SUBMITTED ON COMPANY'S LETTERHEAD.

THE DETAILS MAY EITHER BE ATTESTED BY VENDOR'S BANKERS OR ACCOMPANIED BY A CANCELLED CHEQUE LEAF WITH IFSC CODE & A/C NO. PRINTED ON IT.

UNDERTAKING TO REPORT IMMEDIATELY ANY CHANGES IN THE ABOVE TO BE SUBMITTED ON COMPANY'S LETTERHEAD.

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ANNEXURE– VII

LOADING CRITERIA

No deviations in GCC terms and conditions are generally acceptable, and bids with deviations are liable to be rejected. However, in exceptional circumstances, BHEL may accept deviations with Loading as given below:

A) PAYMENT TERMS

Payment will be released generally within 60 days after receipt of material/ services and complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act).

Loading will be done for vendors seeking earlier payment w.r.t. above, for the value and the period of deviation, as per Clause 17.0 of 'Instructions to Bidders'.

Time periods assumed by BHEL/ PEM for a few activities are as follows:

Material Receipt Certificate (MRC) – 120 days from dispatch.

B) BANK GUARANTEE `

Non submission of Bank Guarantee – No deviation is permitted.

C) LIQUIDATED DAMAGES

If maximum limit asked for is on Undelivered Portion – 10% value of the total quoted ex works price & freight (excluding GST).

If maximum limit asked is less than 10 % of contract value loading shall be to the extent to which not agreed by bidder (at offered value).

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ANNEXURE– VIII

INTEGRITY PACT

Between

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

and

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

Preamble

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

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

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

Section 1 – Commitments of the Principal

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

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

2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits

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himself to observe the following principles during his participation in the tender process and during the contract execution.

2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

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

2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.1.4 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 will await their decision in the matter.

Section 3 – Disqualification from tender process & exclusion from future contracts

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

Section 4 – Compensation for Damages

4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/Bid Security.

4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

Section 5 – Previous Transgression

5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

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5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

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

6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain

responsible for any default by his sub-contractors.

6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

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

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

Section 8 –Independent External Monitor(s)

8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.

8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non-disclosure agreement.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.

8.7 The IEMs would examine all complaints received by them and give their recommendations! views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious

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irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.

8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.

8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organization.

8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

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

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

Section 9 – Pact Duration

9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty/ guarantee etc. should be outside the purview of IEMs.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

 For & On behalf of the Principal
 (Office Seal)

 For & On behalf of the Bidder/ Contractor
 (Office Seal)

Place_____

Date_____

Witness: _____
 (Name & Address) _____

Witness: _____
 (Name & Address) _____

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ANNEXURE IX

LIST OF TURNKEY PACKAGES WITH REQUIRED PG TEST & FINAL DOCUMENTS

SL. NO.	PACKAGE NAME	AS BUILT DRAWINGS	O&M MANUAL	FINAL DRAWINGS	INSPECTION DOCUMENTS	PG TEST APPLICABILITY
1	AIRCONDITIONING SYSTEM	Y	Y	Y	Y	Y
2	CHLORINE DIOXIDE DOSING SYSTEM	Y	Y	Y	Y	Y
3	COAL BUNKER DEBLOCKING DEVICES	Y	Y	Y	Y	Y
4	COMPRESSED AIR SYSTEM	Y	Y	Y	Y	Y
5	CONDENSATE POLISHING UNIT	Y	Y	Y	Y	Y
6	CW TREATMENT PLANT	Y	Y	Y	Y	Y
7	D.M. PLANT	Y	Y	Y	Y	Y
8	D/G EOT CRANES ABOVE 100T	N	Y	Y	Y	N
9	D/G EOT CRANES UP TO 100T	N	Y	Y	Y	N
10	EFFLUENT TREATMENT PLANT	Y	Y	Y	Y	Y
11	EFFLUENT/SEWAGE TRANSFER SYSTEM	Y	Y	Y	Y	Y
12	ELECTROLYTIC CHLORINATION PT.	Y	Y	Y	Y	Y
13	ELEVATORS	N	Y	Y	Y	N
14	FUEL OIL HANDLING AND STORAGE SYSTEM	Y	Y	Y	Y	Y
15	GAS CHLORINATION PLANT	Y	Y	Y	Y	Y
16	H2 GEN. PLANT	N	Y	Y	Y	Y
17	HVAC FOR FGD	Y	Y	Y	Y	Y
18	HVAC FOR HYDRO	Y	Y	Y	Y	Y
19	IDCT	Y	Y	Y	Y	Y
20	MILL REJECT SYSTEM (CONVEYOR TYPE)	Y	Y	Y	Y	Y
21	MILL REJECT SYSTEM (PNEUMATIC TYPE)	Y	Y	Y	Y	Y
22	MISC. TANKS(SITE FABRICATED)	N	Y	Y	Y	N
23	NDCT	Y	Y	Y	Y	Y
24	OZONE GENERATION PLANT	N	Y	Y	Y	Y
25	PRETREATMENT PLANT	Y	Y	Y	Y	Y
26	SEWAGE TREATMENT PLANT	Y	Y	Y	Y	Y
27	SIDE STREAM FILTERATION SYSTEM	N	Y	Y	Y	Y
28	SOLID WASTE MANAGEMENT	Y	Y	Y	Y	Y
29	VENTILATION SYSTEM	Y	Y	Y	Y	Y
30	WATER TREATMENT PACKAGES	Y	Y	Y	Y	Y
31	WEIGH BRIDGE	N	Y	Y	Y	N

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ANNEXURE X

BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings. If BHEL is to initiate Conciliation, then, the invitation to Conciliate shall be extended to the concerned Stakeholder in **Format 7** hereto. Where the stakeholder is to initiate the Conciliation, the notice for initiation of Conciliation shall be sent in **Format-8** hereto.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL. The appointment of Conciliator(s) shall be completed and communicated by the concerned Department/Group of BHEL Unit/Division/Region/Business Group to the other party and the Conciliator(s) within 30 days from the date of acceptance of the invitation to conciliate by the concerned party in the **Format-9**. The details of the Claim, and counter-claim, if any, shall be intimated to the Conciliator(s) simultaneously in **Format-5**.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.
7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.
8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.

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10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.
14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.

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21. Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.

22. The proceedings of Conciliation under this Scheme may be terminated as follows:

- On the date of signing of the Settlement agreement by the Parties; or,
- By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
- By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
- By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
- On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.

23. The Conciliator(s) shall be entitled to following fees and facilities:

SI No	Particulars	Amount
1	Sitting fees	Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No.27 herein below.
2	Towards drafting of settlement agreement	In cases involving claim and/or counter-claim of up to Rs 5crores. Rs 50,000/- (Sole Conciliator) In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores.
SI No	Particulars	Amount
		Rs 75,000 (per Conciliator) In cases involving claim and/or counter-claim of more than Rs 10 crores. Rs 1,00,000/- (per Conciliator) Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on the, Signing of the Settlement Agreement after approval of the Competent Authority or

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			Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.
3	Secretarial expenses		Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC. Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC
4	Travel and transportation and stay at outstation Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)		As per entitlement of the equivalent officer (pay scale wise) in BHEL.
	Others		As per the extant entitlement of whole time Functional Directors in BHEL. Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class.
5	Venue for meeting		Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the
SI No	Particulars		Amount
			concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately.
24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings. 25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties. 26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.			

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27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.
28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 4 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.
30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
 - a. Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
 - b. admissions made by the other party in the course of the Conciliator proceedings;
 - c. proposals made by the Conciliator;
 - d. The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.
34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

Format 5 to BHEL Conciliation Scheme, 2018 STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE IEC BY BOTH THE PARTIES

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Claim(s)/Counter Claim(s):

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Sl. No.	Description of claim(s)/Counter Claim	Amount (In INR) or currency applicable in the contract	Relevant contract clause

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

Note– The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.

FORMAT-7

FORMAT FOR NOTICE INVOKING CONCILIATION CLAUSE BY BHEL FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC

To,

M/s. (Stakeholder's name)

Subject: **NOTICE FOR INVOCATION OF THE CONCILIATION CLAUSE OF THE CONTRACT BY BHEL**

Ref: Contract No/MoU/Agreement/LOI/LOA & date _____.

Dear Sir/Madam,

As you are aware, with reference to above referred Contract/MoU/Agreement/LOI/LOA, certain disputes have arisen, which, in spite of several rounds of mutual discussions and various correspondences have remained unresolved. The brief particulars of our claims which arise out of the above- referred Contract/MoU/Agreement/LOI/LOA are reproduced hereunder.

Sl. No.	Claim description	Amount involved

As you are aware, there is a provision in the captioned Contract/MoU/Agreement/LOI/ LOA for referring disputes to conciliation.

In terms of Clause _____ of Procedure i.e., Annexure _____ to the Contract/MoU /Agreement / LOI / LOA, we hereby seek your consent to refer the matter to Conciliation by Independent Experts Committee to be appointed by BHEL. You are invited to provide your consent in writing to proceed with conciliation into the above mentioned disputes within a period of 30 days from the date of this letter along with details of counter-claims, if any, which you might have with regard to the subject Contract/ MoU/ Agreement/ LOI/ LOA.

Please note that upon receipt of your consent in writing within 30 days of the date of receipt of this letter by you, BHEL shall appoint suitable person(s) from the BHEL Panel of Conciliators.

This letter is being issued without prejudice to our rights and contentions available under the contract and law.

Thanking you Yours faithfully

Representative of BHEL

Note: The Format may be suitably modified, as required, based on facts and circumstances of the case.

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FORMAT-8 FORMAT FOR NOTICE INVOKING CONCILIATION CLAUSE BY A STAKEHOLDER FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC

To,

BHEL (Head of the Unit/Division/Region/Business Group)

Subject: **NOTICE FOR INVOCATION OF THE CONCILIATION CLAUSE OF THE CONTRACT BY A STAKEHOLDER**

Ref: Contract No/MoU/Agreement/LOI/LOA & date _____.

Dear Sir/Madam,

As you are aware, with reference to above referred Contract/MoU/Agreement/LOI/LOA, certain disputes have arisen, which, in spite of several rounds of mutual discussions and various correspondences have remained unresolved. The brief particulars of our claims which have arisen out of the above- referred Contract/MoU/Agreement/LOI/LOA are enumerated hereunder:

Sl.No.	Claim description	Amount involved

As you are aware, there is a provision in the captioned Contract/MoU/Agreement/LOI/ LOA for referring inter-se disputes of the Parties to conciliation.

We wish to refer the above-said disputes to Conciliation as per the said Clause of the captioned Contract/MoU/Agreement/LOI/ LOA. In terms of Clause _____ of Procedure i.e., Annexure _____ to the Contract/MoU /Agreement / LOI / LOA, we hereby invite BHEL to provide its consent in writing to proceed with conciliation into the above mentioned disputes within a period of 30 days from the date of this letter along with details of counter-claims, if any, which it might have with regard to the subject Contract/ MoU/ Agreement/ LOI/ LOA and to appoint suitable person(s) as Conciliator(s) from the BHEL Panel of Conciliators.

This letter is being issued without prejudice to our rights and contentions available under the contract and law.

Thanking you Yours faithfully

Representative of the Stakeholder

Note: The Format may be suitably modified, as required, based on facts and circumstances of the case.

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ANNEXURES
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FORMAT-9

FORMAT FOR INTIMATION TO THE STAKEHOLDER ABOUT APPOINTMENT OF CONCILIATOR/IEC

To,

M/s. (Stakeholder's name)

Subject: **INTIMATION BY BHEL TO THE STAKEHOLDER AND CONCILIATOR(S) ABOUT APPOINTMENT OF CONCILIATOR/IEC**

Ref: Contract No/MoU/Agreement/LOI/LOA& date_____. Sir,

This is with reference to letter dated _____ regarding reference of the disputes _____ arising _____ in
connection with the _____ subject Contract No
_____/MoU/Agreement/LOI/LOA to conciliation and appointment of Conciliator(s).

In pursuance of the said letter, the said disputes are assigned to conciliation and the following persons are nominated as Conciliator(s) for conciliating and assisting the Parties to amicably resolve the disputes in terms of the Arbitration & Conciliation Act, 1996 and the Procedure — to the subject Contract
_____/MoU/Agreement/LOI/LOA, if possible. Name and contact details of Conciliator(s)

a)

b)

c)

You are requested to submit the Statement of Claims or Counter-Claims (strike off whichever is inapplicable) before the Conciliator(s) in Format 5 (enclosed herewith) as per the time limit as prescribed by the Conciliator(s).

Yours faithfully,

Representative of BHEL

CC: To Conciliator(s)... for Kind Information please. Encl: As above

Note: The Format may be suitably modified, as required, based on facts and circumstances of the case.

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ANNEXURES
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ANNEXURE XI

STATE WISE GST REGISTRATION CODE OF BHEL

Sl.No	State	Nodal Unit Registered as Supplier of Goods/Services in GST	GSTIN of Nodal Unit
1	Andhra Pradesh	HPVP	37AAACB4146P7Z8
2	Assam	PSER	18AAACB4146P1ZE
3	Bihar	PSER	10AAACB4146P1ZU
4	Chandigarh	PSNR	04AAACB4146P1ZN
5	Chattishgarh	PSWR	22AAACB4146P1ZP
6	Daman & Diu	EDN	25AAACB4146P1ZJ
7	Delhi	TBG	07AAACB4146P1ZH
8	Gujarat	PSWR	24AAACB4146P1ZL
9	Haryana	PSNR	06AAACB4146P1ZJ
10	Himachal Pradesh	PSNR	02AAACB4146P1ZR
11	Jharkhand	PSER	20AAACB4146P5ZP
12	Karnataka	EDN	29AAACB4146P1ZB
13	Kerala	PSSR	32AAACB4146P1ZO
14	Maharashtra	PSWR	27AAACB4146P1ZF
15	Madhya Pradesh	BPL	23AAACB4146P1ZN
16	Punjab	IVP	03AAACB4146P2ZO
17	Rajasthan	PSNR	08AAACB4146P1ZF
18	Tamil Nadu	TRY	33AAACB4146P2ZL
19	Telangana	Hyd	36AAACB4146P1ZG
20	Tripura	PSER	16AAACB4146P1ZI
21	Uttar Pradesh	PSNR	09AAACB4146P2ZC
22	Uttarakhand	HWR	05AAACB4146P1ZL
23	West Bangal	PSER	19AAACB4146P1ZC
24	Mizoram	PSER	15AAACB4146P1ZK
25	Orissa	PSSR	21AAACB4146P1ZR
26	Arunachal Pradesh	PSER	17AAACB4146P17Q

Annexure-XII

Sl.No.	Package	Definition for successful Commissioning	Definition for successful TRIAL operation	Handover	PG test- applicability and retention release (FINAL bill) clause	P&G release clause
1	MISC. TANK (DM, CST/SITE FABRICATED)	First fill of liquid/water/oil (as applicable) in Tank (After painting).	Operation of Tanks with fill of liquid/water/oil (as applicable) in Tank for ONE MONTH for further beneficial use to Plant	After successful TRIAL operation and 1 year defect liability period, package deemed to be handed over to BHEL/customer.	Not applicable. Final bill shall be paid after TRIAL operation completion	After defect liability period completion.
2	FUEL OIL HANDLING/UNLOADING SYSTEM (TANKS WITH FUEL UNLOADING SYSTEM)	First fill of LDO or HFO in TANK with respective unloading pumps.	Operation of all drives /sub systems and equipment's (Drain pump, sump pump, APRDS, panel as per scope) its demonstration through PLC/DCS as applicable.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
3	D/G EOT CRANES UP TO 100T & D/G EOT CRANES ABOVE 100T	Load Test of EOT and statutory certificate/licence/Third party inspection report	trouble free/stable operation of EOT for 1 month for beneficial use in plant	Handover protocol with BHEL/Customer	Not applicable. Final bill shall be paid After Handover	After handover to customer
4	COMPRESSED AIR SYSTEM	Commissioning of compressor stream with air dryer and air receiver	trouble free/stable operation of system including PLC/DCS operation of package for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
5	D.M. PLANT	Demonstration of two cycle of continuous DM water production per stream	trouble free/stable operation of system including PLC/DCS operation of package for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
6	PRETREATMENT PLANT	"1 week generation of treated water including commissioning of chemical dosing system.	trouble free/stable operation of system including PLC/DCS operation of package covering all other sub systems like thickener/sludge disposal (as applicable) for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
7	COOLING TOWER-NDCT	First water Charge of Cooling water and readiness for operation	trouble free/stable operation of system including operation of package covering all other sub systems sump pump, aviation light,elevator, etc. (as applicable) for 1 month beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
8	COOLING TOWER-IDCT	Trial RUN of all CT FANs + First water Charge of Cooling water	trouble free/stable operation of system including PLC/DCS operation of package covering all other sub systems sump pump,hoist for 1 month beneficial use in plant.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
9	ELECTROLYTIC CHLORINATION PLANT	1 week of continuous Chlorine dosing in water (CW,RAW, Potable as applicable)	trouble free/stable operation of system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
10	GAS CHLORINATION PLANT	1 week of continuous Chlorine dosing in water (CW,RAW, Potable as applicable)	trouble free/stable operation of system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
11	CW TREATMENT PLANT	1 week of continuous Chemical dosing in CW	trouble free/stable operation of system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.

Annexure-XII						
Sl.No.	Package	Definition for successful Commissioning	Definition for successful TRIAL operation	Handover	PG test- applicability and retention release (FINAL bill) clause	P&G release clause
12	AC SYSTEM	1 week continuous operation of AC UNIT (Chiller/VAM/AHU,PUMPS etc as involved In ONE Independent AC system.)	trouble free/stable operation of ONE Independent AC system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	UNIT wise/ BUILDING wise PG test of ONE independent UNIT shall be allowed After 12 months operation of such system, that part of package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
13	MILL REJECT SYSTEM (CONVEYOR TYPE) & MILL REJECT SYSTEM (PNEUMATIC TYPE)	Commissioning of all drives and instruments UNIT wise and readiness for Start of "Mill reject conveying/collection.	trouble free/stable operation of system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	UNIT wise PG test of ONE independent UNIT shall be allowed After 12 months operation and that part deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
14	EFFLUENT TREATMENT PLANT	Commissioning of drives/pumps and C&I work scope(Area wise) and its chemical treatment in CMB.	trouble free/stable operation of all sub system for 1 month.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
15	VENTILATION SYSTEM	Demonstration of AIR washer/UAF operation for 1 week.	trouble free/stable operation of ONE Independent AIR washer / UAF system (including PLC/DCS operation of package covering all elect and C&I part.) for 1 month for beneficial use in plant	UNIT wise/ BUILDING wise PG test of ONE independent UNIT shall be allowed After 12 months operation of such system, that part of package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
16	SIDE STREAM FILTRATION SYSTEM	Demonstration of Filtration Plant for 1 week.	trouble free/stable operation of system for 1 month.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
17	ELEVATOR	Load Test of Elevator and statutory certificate/licence/Third party inspection report	trouble free/stable operation of elevator for 1 month.	Handover protocol with BHEL/Customer	Not applicable. Final bill shall be paid After Handover	After defect liability period completion.
18	CONDENSATE POLISHING UNIT	1 cycle operation of each service vessel in respective UNIT including resin regeneration system.	trouble free/stable operation of CPU (including PLC/DCS operation of package covering all electrical and C&I part.) for 1 month for beneficial use in plant	UNIT wise PG test of ONE independent UNIT shall be allowed After 12 months operation and that part deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
19	H2 GENERATION PLANT	1st PESO license for erection and 2nd license for commissioning & operation, 2 week operation of all equipment's (generation skid, purification skid and compressor skid) and availability of H2 at filling station.	2 week trouble free/stable operation of H2 generation system for beneficial use in plant.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
20	OZONE GERATION PLANT			Not Required		
21	SEWAGE TREATMENT PLANT	"1 week operation of all the drives including commissioning of chemical dosing system and generate treated water for final use."	trouble free/stable operation of system for 1 month.	After successful PG test conductance package deemed to be handed over to BHEL/Customer	Final bill shall be paid after successful PG test completion.	After completion of successful PG test OR defect liability period completion, which ever is later.
22	COAL BUNKER DEBLOCKING DEVICES			Not Required		
23	SOLID WASTE MANAGEMENT			Not Required		
24	WEIGH BRIDGE	Load Test of Weigh bridge and statutory certificate/licence/Third party inspection report	trouble free/stable operation of Weigh bridge for 1 month.	Handover protocol with BHEL/Customer	Not applicable. Final bill shall be paid After Handover	After defect liability period completion.



**BHARAT
HEAVY
ELECTRICALS
LIMITED
(BHEL)**

**GENERAL CONDITIONS
OF CONTRACT
GCC - BOP**

Revision no. 00

ANNEXURES

Annexure-XIII

Package wise variation in contract value

S. No.	Package Name	Overall variation in contract value
1	CHLORINE DIOXIDE DOSING SYSTEM	+/- 10%
2	CONDENSATE POLISHING UNIT	+/- 10%
3	SIDE STREAM FILTRATION SYSTEM	+/- 10%
4	CW TREATMENT PLANT	+/- 10%
5	Water Treatment Packages	+/- 10%
6	PRETREATMENT PLANT	+/- 10%
7	MILL REJECT SYSTEM (CONVEYOR TYPE)	+/- 10%
8	MILL REJECT SYSTEM (PNEUMATIC TYPE)	+/- 10%
9	COAL BUNKER DEBLOCKING DEVICES	+/- 10%
10	D.M. PLANT	+/- 10%
11	EFFLUENT TREATMENT PLANT	+/- 10%
12	IDCT	+/- 10%
13	NDCT	+/- 10%
14	FUEL OIL HANDLING AND STORAGE SYSTEM	+/- 10%
15	MISC. TANKS(SITE FABRICATED)	+/- 10%
16	H2 GEN. PLANT	+/- 10%
17	ELECTROLYTIC CHLORINATION PT.	+/- 10%
18	OZONE GENERATION PLANT	+/- 10%
19	GAS CHLORINATION PLANT	+/- 10%
20	SOLID WASTE MANAGEMENT	+/- 10%
21	D/G EOT CRANES UP TO 100T	+/- 10%
22	D/G EOT CRANES ABOVE 100T	+/- 10%
23	ELEVATORS	+/- 10%
24	AIRCONDITIONING SYSTEM	+/- 30%
25	VENTILATION SYSTEM	+/- 30%
26	COMPRESSED AIR SYSTEM	+/- 10%
27	WEIGH BRIDGE	+/- 10%
28	HVAC for Hydro	+/- 30%
29	HVAC FOR FGD	+/- 30%
30	Sewage Treatment Plant	+/- 10%
31	Effluent/Sewage Transfer System	+/- 10%

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ANNEXURES
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CUMULATIVE ENGG PLAN & REVIEW WITH VENDOR

Annexure XIV

LOA date											
Sl. No.	Customer Drawing No.	BHEL Drawing No.	Drawing Title	Scheduled/ Resubmission Date	Submitted Date	Rev. No	Comment Date	APPROVAL Date	Approval Category	Delay in Submission	Remarks
1		Drg 1									
2		Drg 1									
3		Drg 1									
4		Drg 2									
5		Drg 2									
6		Drg 3									
7		Drg 4									
8		Drg 4									
9		Drg 4									
10		Drg 4									
11		Drg 5									

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ANNEXURES
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Annexure XV

PART – B: PLAN(PHYSICAL) FOR THE NEXT QUARTER i.e.

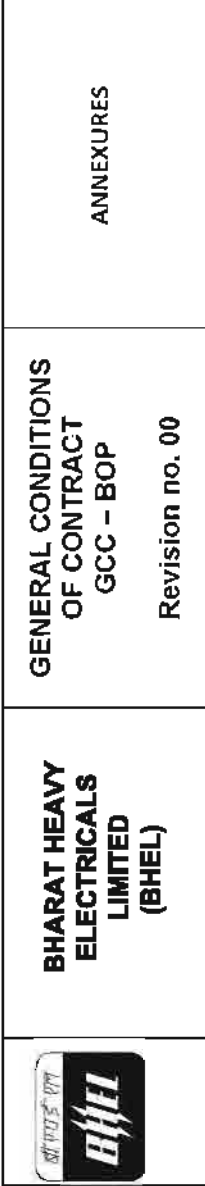
Date of Plan

SN.	Description of Supply	Original Planned Quantity	Planned Quantity (excluding shortfalls attributable to Vendor till date)	Unit of Measurement	REMARKS (Reasons for difference in Original Planned Quantity w.r.t Planned quantity to be given)

Note : “Original Planned Quantity” shall be as per latest jointly agreed programme between BHEL and Vendor before commencement of work or at the time of latest Time Extension, as the case may be.

BHEL
(Sign with name, designation and date)

VENDOR
(Sign with name, designation and date)



WORK PLAN & REVIEW WITH VENDOR

PART-A: PLAN/REVIEW OF WORK FOR THE QUARTER OF

[illegible]

VENDOR
(Sign with name, designation and date)

	BHARAT HEAVY ELECTRICALS LIMITED (BHEL)	GENERAL CONDITIONS OF CONTRACT GCC – BOP Revision no. 00	ANNEXURES
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Annexure XVI

PART – B: PLAN(PHYSICAL) FOR THE NEXT QUARTER i.e.

Date of Plan

SN.	Description of work	Original Planned Quantity	Planned Quantity (excluding shortfalls attributable to Vendor till date)	Unit of Measurement	REMARKS (Reasons for difference in Original Planned Quantity w.r.t. Planned quantity to be given)

Note: “Original Planned Quantity” shall be as per latest jointly agreed programme between BHEL and Vendor before commencement of work or at the time of latest Time Extension, as the case may be.

BHEL
(Sign with name, designation and date)

VENDOR
(Sign with name, designation and date)

APPENDIX – I

(CERTIFICATE BY CHARTERED ACCOUNTANT ON LETTER HEAD)

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) dtd:, Category: (Micro/Small)). (copy enclosed).

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

1. **For Manufacturing Enterprises:** investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722 (E) dated October 5, 2006:
Rs Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs Lacs

(STRIKE OFF WHICHEVER IS NOT APPLICABLE)

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

Or

The company has been graduated from its original category (Micro/Small) (strike off which is not applicable) and the date of graduation of such enterprise from its original category is (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O.No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name-

Membership Number-

Seal of Chartered Accountant-



GUIDELINES FOR REVERSE AUCTION - 2024

(AA:SSP:RA:00 dated 05.12.2024)

ABRIDGED VERSION

BHEL, New Delhi

Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

1.0 Scope

This document describes the guidelines to be followed by BHEL for conducting Reverse Auction (RA) for procurement of material/ works/ services. The RA shall follow the philosophy of English Reverse (No ties).

English Reverse (No ties) is a type of auction where the starting price and bid decrement are announced before start of online reverse auction. The interested bidders can thereupon start bidding in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within a given time frame. The bidding is with reference to the current lowest bid in the reverse auction. All bidders will see the current lowest quoted price and their rank. The term 'No ties' is used since more than one bidder cannot give an identical price, at a given instant, during the reverse auction. In other words, there shall never be a tie in the bids.

3.0 Upfront declaration in NIT

Decision to go for RA would be taken before floating of the tender. In case it is decided to go for RA, same shall be declared upfront in NIT by inserting the following **clause**:

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) 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 price bid along with applicable loading, if any, shall be considered for ranking."

6.0 Business rules for RA

Model Annexure-I is attached.

7.0 Role of Service Provider

- (1) Acknowledge the receipt of mandate from BHEL.
- (2) Contact the bidders, provide business rules and train them, as required.
- (3) Get the process compliance form (annexure III) signed by all the

Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

- participating bidders before RA event.
- (4) Conduct the event as per the contract and business rules.
- (5) Submit the Login Reports, Results, History sheet and authorized final bid from the bidders.
- (6) To obtain price breakup from successful bidder and submit the same to BHEL.

10.0 Reverse Auction Process

- 10.1. Reverse Auction will be conducted if two or more bidders are techno-commercially qualified.
- 10.2. Wherever RA is opted in a tender, the techno-commercially qualified H1 will not be allowed to participate in RA. In case more than one H1 bidder quote the same rate, the Price Offer received last, as per the time log of the Portal, shall be removed first, on the principle of last in, first out by the system.
- 10.3. However, H1 will be allowed to participate in RA in the following cases:
 - a) If number of techno-commercially qualified bidders are only 2 or 3.
 - b) In case Primary product of only one OEM is left in contention for participation in RA on elimination of H1.
 - c) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MSE and H-1 is eligible MSE and H-1 price is coming within price band of 15% of Non-MSE lowest bidder.
 - d) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MII and H-1 is eligible MII and H-1 price is coming within price band of 20% of Non-MII lowest bidder.
- 10.4. Only those bidders who submit the online sealed bid within the scheduled time shall be eligible to participate further in the RA process.
- 10.7. During RA, all bidders will see their rank and current L1 price on the screen. Once the RA is done, the ranking status would be based on the last quoted price of the bidder(s) irrespective of the quote received in RA or sealed price bid.

Guidelines for Reverse Auction – 2024

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- 10.8 No bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

13.0 Others

- 13.2 In case of enquiry through e-Procurement, the sealed electronic price bid (e-bid) is to be treated as sealed price bid.
- 13.3 BHEL will inform bidders the details of service provider who will provide business rules, all necessary training and assistance before commencement of online bidding.
- 13.4 Bidders will be advised to read the 'Business Rules' indicating details of RA event carefully, before reverse auction event.

---XXX---

ABRIDGED VERSION

Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
Dated: 05.12.2024

Business Rules for Reverse Auction

Annexure – I

This has reference to tender no **{tender number....date...}**. BHEL shall finalise the Rates for the supply of **{item name}** through Reverse Auction mode. BHEL has made arrangement with M/s. **{Service provider}**, who shall be BHEL's authorized service provider for the same. Bidders should go through the instructions given below and submit acceptance of the same.

The technical & commercial terms are as per (a) BHEL Tender Enq. No. {...} dated {...}, (b) Bidders' technical & commercial bid (in case of two part bid) and (c) subsequent correspondences between BHEL and the bidders, if any.

1. Procedure of Reverse Auctioning

- i. Price bids of all techno-commercially qualified bidders shall be opened.
- ii. **Reverse Auction:** The 'bid decrement' will be decided by BHEL.
- iii. The lowest bidder in sealed price bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.
- iv. Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become "L1" and this continues as an iterative process. However, no bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.
- v. After the completion of the reverse auction, the Closing Price shall be available for further processing.
- vi. Wherever the evaluation is done on total cost basis, after Reverse Auction, prices of individual line items shall be reduced on pro-rata basis.

2. Schedule for reverse auction: The Reverse Auction is tentatively scheduled on **{date}**: **{start time}**: **{Close Time}**: **}**.

3. Auction extension time: If a bidder places a bid in the last {...} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {...} minutes,

Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
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Business Rules for Reverse Auction

Annexure – I

for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {...} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {...} minutes. In case, there is no bid in the last {...} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.

The above process will continue till completion of Reverse Auction.

Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. {Service provider} with a copy to BHEL within 15 minutes prior to initial closing time of Reverse Auction.

4. **Bid price:** The Bidder has to quote the {...} Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, taxes, duties, freight and insurance as specified in tender document, including loading (if indicated by BHEL due to deviations in technical/ commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of total cost to BHEL (To be specified by Unit as per NIT conditions).
5. **Bidding currency and unit of measurement:** Bidding will be conducted in Indian Rupees per Unit of the material as per the specifications {...}

In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid) shall be considered for conversion in Indian Rupees. If the relevant day happens to be a Bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

6. **Validity of bids:** Price shall be valid for {... days} from the date of reverse auction. These shall not be subjected to any change whatsoever.

Guidelines for Reverse Auction – 2024

Doc. No. AA:SSP:RA:00
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Business Rules for Reverse Auction

Annexure – I

7. **Lowest bid of a bidder:** In case the bidder submits more than one bid, the lowest bid at the end of Reverse Auction will be considered as the bidder's final offer to execute the work.
8. Unique user IDs shall be used by bidders during bidding process. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.
9. **Post auction procedure:** BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.
10. Any commercial/ technical loading shall be separately intimated to respective bidders prior to RA. The excel sheet provided in this regard shall cover all these aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during Reverse Auction. Modalities of loading & de-loading shall be separately intimated to the bidders. The responsibility for correctness of total cost to BHEL shall lie with the bidders.
11. Reverse auction shall be conducted by BHEL (through M/s {Service Provider}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the RA process if a bidder is not able to bid and requests for extension of time by FAX/ email/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained.

In order to ward-off contingent situation of connectivity failure bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {Service provider} is responsible for such eventualities.

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12. Proxy bids: Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process.

The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid.

Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant.

In case of more than one proxy bid, the system shall bid till it crosses the threshold value of 'each lowest proxy bid' and thereafter allow the competition to decide the final L1 price.

Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).

13. Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc from M/s {Service provider}.
14. M/s. {Service provider}, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {Service provider}, shall also explain the bidders, all the business rules related to the

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Reverse Auction. Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance form as enclosed. Without this, the bidder will not be eligible to participate in the event.

15. Successful bidder shall be required to submit the final prices (L1) in prescribed format (Annexure – VI) for price breakup, quoted during the Reverse Auction, duly signed and stamped as token of acceptance without any new condition (other than those already agreed to before start of auction), after the completion of auction to M/s. {Service provider} besides BHEL within two working days of Auction without fail.
16. Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
17. Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. {...} dt. {...}. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines for suspension of business dealings (as available on www.bhel.com).
18. Bidders shall be able to view the following on their screen along with the necessary fields during Reverse Auction:
 - a. Leading (Running Lowest) Bid in the Auction (only total price of package)
 - b. Bid Placed by the bidder
 - c. Start Price
 - d. Decrement value
 - e. Rank of their own bid during bidding as well as at the close of auction.
19. BHEL's decision on award of contract shall be final and binding on all the Bidders.
20. BHEL reserves the right to extend, reschedule or cancel the Reverse Auction process at any time, before ordering, without assigning any reason, with

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intimation to bidders.

21. BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.
22. Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.
23. If there is any clash between this business document and the FAQ available, if any, in the website of M/s. {Service provider}, the terms & conditions given in this business document will supersede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.
24. Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines for suspension of business dealings (as available on www.bhel.com), shall be initiated by BHEL.