



**BHARAT HEAVY ELECTRICALS LIMITED**  
**(A Govt. Of India Undertaking)**  
 POWER SECTOR, EASTERN REGION  
 BHEL BHAWAN, PLOT NO. DJ-9/1, SECTOR II,  
 SALT LAKE CITY, KOLKATA, WEST BENGAL, INDIA  
 Phone: 033-23216130-31, 033-23216130 FAX: 033-23211960

**NOTICE INVITING TENDER (NIT)**

OFFERS are invited from **REPUTED AND EXPERIENCED BIDDERS** (meeting pre-qualification criteria as mentioned) through **E-PROCUREMENT PORTAL** <https://eprocurebhel.co.in> **ONLY** for the subject job by the undersigned on behalf of **BHARAT HEAVY ELECTRICALS LIMITED** as per the tender document. Issue/ forwarding intimation regarding tender to any bidder shall not construe that the bidder is considered to be qualified. Following points relevant to the tender may please be noted and complied with.

**Salient Features of NIT**

SL NO	ISSUE	DESCRIPTION
i	E-TENDER NUMBER	<b>PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024</b>
ii	Broad Scope of job	DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE, UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE).
iii	DETAILS OF TENDER DOCUMENT	
a)	General conditions of contract (GCC)	Applicable
b)	Special Condition of Contract (SCC) (SUPPLY & SERVICE)	Applicable
c)	Technical Specification - PE-TS-457-(571-13000-A)-A002	Applicable
d)	BHEL HSE Plan	Applicable
e)	PRICE BID & UNPRICED PRICE BID	Applicable
f)	No Deviation Certificate	Applicable
g)	Terms & Conditions of Reverse Auction	Applicable
h)	FORMS AND PROCEDURES	Applicable
iv	ISSUE OF TENDER DOCUMENTS	a) Online through e-procurement platform at <a href="https://eprocurebhel.co.in/">https://eprocurebhel.co.in/</a> b) in BHEL website ( <a href="http://www.bhel.com">www.bhel.com</a> , CPP Portal): For tender view purpose only. <b>START DATE: 23/10/2024</b>
v	DUE DATE & TIME OF OFFER SUBMISSION	Date: <b>02/11/2024</b> , Time: <b>14-00 Hrs.</b> (Offer to be submitted online only through e-procurement platform at <a href="https://eprocurebhel.co.in/">https://eprocurebhel.co.in/</a> )
vi	TECHNO-COMMERCIAL BID OPENING OF TENDER	Date: <b>02/11/2024</b> , Time: <b>16-30 Hrs.</b> (online only through e-procurement platform at <a href="https://eprocurebhel.co.in/">https://eprocurebhel.co.in/</a> , participating bidders may witness the same online only)
vii	CURRENCY	<b>INDIAN RUPEES (INR)</b>
viii	EMD AMOUNT	NA [To be submitted in the form and manner as mentioned below]
ix	COST OF TENDER	<b>NIL</b>

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax: (033) 23211960

फोन/Phone: बोर्ड/EPABX: 23398220

x	LAST DATE FOR SEEKING CLARIFICATION	Date: 01/11/2024 (UP TO 12:00 Hrs.)	Applicable
xi	SCHEDULE OF Pre Bid Discussion (PBD)	Not Applicable (In case BHEL decides to conduct PBD, date, time & venue of PBD will be intimated suitably thru TCN).	Not Applicable
xii	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	NA	Not Applicable
xiii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage ( <a href="http://www.bhel.com">www.bhel.com</a> ) → Tender Notifications → View Corrigendums & <a href="#">CPP portal</a> → Tender Notice & E-PROCUREMENT PORTAL ( <a href="https://eprocurebhel.co.in">https://eprocurebhel.co.in</a> ) and not in the newspapers. Bidders to keep themselves updated with all such information.	Shall be intimated to bidder
xiv	Evaluation currency	INDIAN RUPEES (INR)	

1. The offer shall be submitted as per the instructions of tender document. Only One set of tender documents (**in original, downloaded from website**) signed by authorised company rep. of bidder and stamped on each page shall be submitted as detailed further, as given below. Bidders to note specifically that all pages of tender document, including these NIT pages etc. appearing in the website for this particular tender shall be submitted by them (after signing/stamping on each page) as a part of their offer. **Price shall not be mentioned by them anywhere in the techno-commercial portion of offer. Price shall be mentioned in the relevant price schedule only and to be submitted in e-procurement portal/platform in the form and manner mentioned in tender.**

**For E-Procurement Assistance & Training, NIC PORTAL Helpdesk Contacts as per following: -**

For any technical related queries please call at 24x7 Help Desk Number  
**0120-4001 002, 0120-4200 462, 0120-4001 006, 0120-6277 787**

Email Support

Address: A) For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority

Technical - [support-eproc@nic.in](mailto:support-eproc@nic.in)

For any difficulty in downloading the tender from internet website, they should contact this office (Dy. Manager-Purchase or SDGM-Purchase Phone no. 033-23398222/8221/8220). No alteration/changes by bidders is permitted in the tender/NIT appeared in the website.

2. Successful bidder shall have to submit additional set of tender/sign on tender document provided by BHEL, if so decided by BHEL.
3. This is an e-tender floated online through our E-Procurement Site <https://eprocurebhel.co.in>. The bidder should respond by submitting their offer online only in our e-Procurement platform at <https://eprocurebhel.co.in>. Offers are invited in two-parts only. No Hard copy bid or bids through email/ fax shall be accepted. Bids are invited in two parts & shall be submitted as described below:

OFFER DESCRIPTION	DOCUMENTS TO BE UPLOADED & MODALITY OF UPLOADING
TECHNICAL OFFER	<ol style="list-style-type: none"> <li>1. Scanned copy of Covering letter of offer (To be attached in <b>Attachment</b> section)</li> <li>2. Scanned copy of Entire tender documents signed &amp; stamped in each page by authorized representative of the bidder except price bid (To be attached in <b>Attachment</b> section).</li> <li>3. Scanned copy of Techno-Commercial Offer (To be attached in <b>Attachment</b> section)</li> <li>4. Duly filled all annexures except price &amp; unpriced format (To be attached in <b>Attachment</b> section).</li> <li>5. Copy of records notes of Pre-Bid Conference, if applicable/ pre-bid MOM. (To be attached in <b>Attachment</b> section)</li> <li>6. Copy of Tender change notice (TCN), if applicable (To be attached in <b>Attachment</b> section)</li> <li>7. All supporting documents/ Annexures etc. as applicable (To be attached in <b>Attachment</b> section).</li> <li>8. <b>No deviation certificate</b> in bidder's letterhead as per format given in Tender (To be attached in <b>Attachment</b> section).</li> </ol>
PRE-QUALIFICATION PART	9. Pre-qualifying documents with all credentials as per tender. (To be attached in PQ <b>Attachment</b> section)
UNPRICED PRICE BID	10. Price schedule –Unpriced but mentioning only <b>quoted / unquoted</b> against each item as per tender.
PRICE BID	<ol style="list-style-type: none"> <li>11. Duly filled in Price Schedule as per tender.</li> </ol> <p>Any other document uploaded in the price bid, apart from tendered Price schedule, shall not be taken into cognizance for evaluation of offer.</p>

**SPECIAL NOTE:**

A) Your offer & documents submitted with the offer shall be signed and stamped in each page by your authorized representative. No overwriting/correction in tender documents by bidders shall be allowed. However, if correction is unavoidable, the same may be signed by authorized signatory.

B) All documents/annexure submitted with the offer shall be properly annexed and placed in respective places of the offer as per enclosure list mentioned in the covering letter. BHEL shall not be responsible for any missing documents.

4. No deviation with respect to tender clauses and no additional clauses/ suggestions/clarification in Techno-commercial bid/Price bid shall normally be considered by BHEL. Bidders are requested to positively comply with the same. Offers with deviation are liable for rejection.

5. BHEL also reserve the right to reject the bidder with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.

6. BHEL reserves the right to accept or reject any or all offer without assigning any reasons thereof. BHEL also reserve the right to cancel the offer wholly or partly without assigning any reason thereof. BHEL also reserve the right to split/part award the job. Also, BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

7. Bidders are free to visit the site and study the prevailing site condition including law & order etc. before quoting (if applicable). They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of site/machine conditions at the time of bidding.

8. For any clarification on the tender document, you may seek the same in writing or through e-procurement portal/platform as per specified format within the last date of seeking clarification as per tender. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay, and receipt of any query after due date shall not be entertained.

9. BHEL may decide holding Pre-bid Discussion [PBD] with all intending bidders. On such communication from BHEL, the bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Outcome of PBD (if any) shall also form part of tender.

10. In case of absence of any queries from bidder(s), their quoted price will be PRESUMED to be final and complete with reference to the tender documents (including Tender change notes (TCNs), clarifications, corrigendum issued by BHEL, if any). Bidders are requested to study the tender documents in detail and prepare their queries/clarifications accordingly. All such queries / clarifications shall be cleared/replied by BHEL. Such clarification letters, corrigendum and/or Tender change notes (TCNs), if issued by BHEL, shall form part of tender document.

11. In the event of any conflict between requirement of any clause of this specification/ documents /drawings /data sheets etc. or requirements of different codes/ standards specified/ contradictions between any two clauses of tender document, the same to be brought to the knowledge of BHEL by bidders in writing for clarification before due date of seeking clarification, otherwise, more stringent requirement as may be interpreted by BHEL shall prevail and shall be binding on you. Any typing error/missing pages/other clerical errors in the tender documents, noticed by you must be pointed out before submission of offer, or else, BHEL's interpretation shall prevail & binding on you.

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

13. Tender document containing above mentioned volumes shall be signed & stamped in all pages including this covering letter. Price bid shall be furnished in the specified format enclosed with the tender. Any additional copy, if required, may be taken by photocopying from the tender document given in the web.

14. **The Bidder has to satisfy the Pre-Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened, who will qualify for the subject job on the basis of pre-qualification evaluation & Techno-Commercial bids etc. BHEL reserves the right to reject the bidders with unsatisfactory past performance in the execution of a contract. BHEL's decision in this regard shall be final & binding.**

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

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

17. While BHEL reserves the right to open the price bid of the offers in camera, the date & time to open the tender opening shall be intimated to the bidders in case BHEL decides it to be 'Public opening' and in such a case, one authorized representative of the bidder shall be allowed to attend.

18. Validity of the offer shall be for six months from Part-I opening (i.e. **techno-commercial bid opening**).

19. Bidders are required to submit their BEST price as per tender Price Schedule format in e-procurement portal/platform in the form & manner as mentioned in tender.

20. Price Bids shall be evaluated in the manner as prescribed in Price Schedule. However, Unit Rates shall also be furnished if applicable in the Price Schedule.

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

22. Bidders are required to submit price as per tender Price Schedule format in e-procurement portal/platform in the form & manner as mentioned in tender

23. **"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://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 envelope price bid along with applicable**

*loading, if any, shall be considered for ranking."*

24. Bidders are requested to note that the accepted / agreed tender terms (technical, commercial or on Reverse Auction) in their original offer cannot be altered / withdrawn by their own during the processing of tender.

25. Unsolicited discounts received after opening of techno commercial bid shall not be considered for evaluation. However, if the party who has submitted the unsolicited discount/rebate becomes the L-1 party, then the awarded price shall be after considering the discount.

26. **"The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL web site [www.bhel.com](http://www.bhel.com).**

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

1.1 Commitment by BHEL:

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

1.2 Commitment by Bidder/ Supplier/ Contractor:

1.2.1 The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

1.2.2 The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

1.2.3 The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage includes in mal-practices, cheating, bribery, fraud or and other misconduct or 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/ supplier/ contractor as per extant guidelines of the company available on [www.bhel.com](http://www.bhel.com) and/ or under applicable legal provisions"

27. 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.

28. Suspension of Business dealings: BHEL reserves the right to take action against contractors who fail to perform or indulge in malpractices, by suspending business dealings with them as detailed in Annexure-VII.

29. "MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011-MA dtd. 09/11/2016 office of AS & DC, MSME) if they submit along with the offer, attested copies of either Udyam Registration Certificate or EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or Udyog Aadhar Memorandum (UAM) & Acknowledgement or EM II certificate along with attested copy of a CA certificate (Format enclosed at Annexure – V where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

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

Type under MSME	SC/ST owned	Women owned	Others (excluding SC/ST & Women Owned)
Micro			
Small			
Medium			

**Note: -**

1. If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSME category.
2. MSE Purchase Preference shall be given to MSE supplier falling within the price band of (L1+15%) at L-1 price for 100% of the total job, in case L1 bidder is not an MSE as per PPP-MSE Order, 2012.

**30. PREFERENCE TO MAKE IN INDIA:**

For this procurement, the local content to categorize a supplier as a Class-I local supplier/ Class-II local supplier/ Non-Local supplier and purchase preference to Class-I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04-06-2020 issued by DPIIT. In case of subsequent orders issued by the Nodal Ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT".

Duly filled & signed Annexure-III (Format for local content), as applicable, to be submitted by bidders along with their technocommercial offer.

**Note: MII Purchase Preference shall be given to Class-I Local Supplier falling within the price band of (L1+20%), at L-1 price for 100% of the total job, incase L1 bidder is not a Class-I Local Supplier as per PPP-MII order, 2020**

**31. GeMAR and PTS Report ID: GEM/GARPTS/05102024/G7WDQLXGD9KG dtd. 05/10/2024****32. The GeM Seller ID shall be mandatory before placement of order / award of contract for goods and services to the successful bidder(s).****33. In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders.**

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

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

**34. Compliance to Restrictions under Rule 144 (xi) of GFR 2017**

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means: -
  - a. An entity incorporated established or registered in such a country; or
  - b. A subsidiary of an entity incorporated established or registered in such a country; or
  - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or
  - d. An entity whose beneficial owner is situated in such a country; or
  - e. An Indian (or other) agent of such an entity; or
  - f. A natural person who is a citizen of such a country; or
  - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- IV. The beneficial owner for the purpose of (III) above will be as under:

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

**Explanation**

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

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

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

**Note:**

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

35. The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

Bidder shall submit duly filled & signed Annexure-VII along with their techno-commercial offer.

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

- a) they have controlling partner (s) in common; **or**
- b) they receive or have received any direct or indirect subsidy/ financial stake from any of them; **or**
- c) they have the same legal representative/agent for purposes of this bid; **or**
- d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; **or**
- e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; **or**
- f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following:

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

or

- g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; **or**
- h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business."

### 37. **Order of Precedence**

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

- a) Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- b) Notice Inviting Tender (NIT)
- c) Price Bid/Schedule
- d) SPECIAL CONDITIONS OF CONTRACT (SCC)
- e) General Conditions of Contract (GCC)
- f) Forms and Procedures

for BHARAT HEAVY ELECTRICALS LTD.

Dy. Manager (Purchase)

Agency	Contact details
BHEL, PSER, Kolkata	Address      BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR – EASTERN REGION 2ND FLOOR, BLOCK-DJ, PLOT- 9/1, SECTOR, SALT LAKE CITY, KOLKATA – 700 091
	Phone no.      033-23398221, 23398222, 23211690
	FAX no.      033-23211960
	E-mail ID <a href="mailto:a_sarkar@bhel.in">a_sarkar@bhel.in</a> , <a href="mailto:pritam@bhel.in">pritam@bhel.in</a>
NIC E- PROCUREM ENT PORTAL	<p><b>For E-Procurement Assistance &amp; Training, NIC PORTAL Helpdesk Contacts as per following:-</b></p> <p>For any technical related queries please call at 24 x 7 Help Desk Number 0120-4001 002, 0120-4200 462, 0120-4001 005, 0120-6277 787</p> <p>Email Support</p> <p>Address: A) For any Issues or Clarifications relating to the published tenders, bidders are requested to contact the respective Tender Inviting Authority, Technical - <a href="mailto:support-eproc@nic.in">support-eproc@nic.in</a></p>

### Enclosure:

01. ANNEXURE-I: Pre-Qualifying Criteria.
02. ANNEXURE-II: No Deviation Certificate
03. ANNEXURE-III: Format for Self Certification regarding Local content (LC)
04. ANNEXURE-IV: CERTIFICATE (regarding bidder from a country which shares a land border with India)
05. ANNEXURE-V: Certificate by Chartered Accountant
06. ANNEXURE-VI: Format for seeking clarification
07. ANNEXURE-VII: Suspension of business dealing with Suppliers/Contractors
08. ANNEXURE-VIII: Declaration for Relation in BHEL
09. ANNEXURE-IX: Declaration by Bidder.
10. ANNEXURE-B: General Terms & conditions for Reverse Auction.
11. ANNEXURE-X: ARBITRATION & CONCILIATION
12. ANNEXURE-XI: BREACH OF CONTRACT, REMEDIES AND TERMINATION
13. Other Tender documents as per this NIT.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091  
फैक्स/Fax: (033) 23211960      फोन/Phone: बोर्ड/EPABX: 23398220

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PRE QUALIFICATION CRITERIA

JOB	DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE, UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE).
TENDER NO	PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024.

Sr. No.	CRITERIA
1.0	<b>FINANCIAL CRITERIA</b>
(A)	BIDDER SHOULD HAVE AVERAGE MINIMUM ANNUAL FINANCIAL TURNOVER OF <b>Rs 45 Lakh</b> DURING THREE CONSECUTIVE FINANCIAL 2020-21, 2021-22 & 2022-23 AND SHOULD SUBMIT THEIR AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT IN SUPPORT OF THE SAME.
(B)	IN CASE AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT HAS NOT BEEN SUBMITTED FOR THAT THREE CONSECUTIVE YEARS INDICATED ABOVE, THEN THE APPLICABLE FINANCIAL AUDITED STATEMENTS SUBMITTED BY THE BIDDERS AGAINST THE REQUISITE YEARS WILL BE AVERAGED FOR THREE YEARS.
(C)	IF FINANCIAL STATEMENTS ARE NOT REQUIRED TO BE AUDITED STATUTORILY, THEN INSTEAD OF AUDITED FINANCIAL STATEMENTS, FINANCIAL STATEMENTS ARE REQUIRED TO BE CERTIFIED BY CHARTERED ACCOUNTANT.
2.0	<b>TECHNICAL CRITERIA</b>
2.1	Bidder should have designed, supplied, erected and commissioned at least one (1) number of both the following systems: - <ul style="list-style-type: none"> <li>AC system: - Minimum installed capacity of AC system shall be 30 TR (Chiller/Precision package AC/Condensing unit/Package AC/ Ductable Split AC).</li> <li>Ventilation System: - Minimum installed capacity of single UAF / Air Washer / Fan Filtration (With Centrifugal Fan) unit shall be 50,000 CMH for complete Ventilation system.</li> </ul>
2.2	Minimum one (1.0) 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. This is over and above the requirement of PO mentioned of PQR clause at S. No. 2.1 above.

NOTES:

A	The bidder has to submit following supporting documents meeting above mentioned pre- qualifying 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 is running successfully for one (1) year from date of commissioning as on date of bid opening in support of PQR clause at S. No. 2.1 above.
B	Bidder shall submit design documents to substantiate technical parameters specified in PQR, if the same is not mentioned in performance certificate / purchase order.
C	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.
D	Notwithstanding anything stated above, CUSTOMER/BHEL reserves the right to assess the capabilities and capacity of the Bidder to perform the contract, should the circumstances warrant such assessment in the overall interest of the Employer.
E	Bidder shall provide all necessary data such as type, design make, capacity, duty, conditions, date of commissioning operation etc.
F	Consortium bidding / JV bidding is not allowed.

G	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.
H	Bidder should submit valid PAN of India.
I	<p>EXISTING VENDOR/CONTRACTOR TO WHICH ORDER PLACED BY BHEL AGAINST VIDE CONTRACTS MENTIONED BELOW SHALL NOT BE ALLOWED TO PARTICIPATE IN THE SUBJECT TENDER</p> <ul style="list-style-type: none"> <li>PO REF: PSER:PUR:NPGCL:HVAC:2022:P-266:(PO:22:PP:0015:PUR:96) Date: 06/09/2022 FOR SUPPLY OF MAIN PACKAGE ALONG WITH COMMISSIONING SPARES, W.O. REF. : PSER:PUR:NPGCL:HVAC:E&amp;C:2022:P-290:(PO:22:PP:0015:PUR:146) Date: 09/11/2022 FOR ERECTION &amp; COMMISSIONING AND P.O. REF. : PSER:PUR:NPGCL:HVAC:MS:2022:P-292: (PO:22:PP:0015:PUR:151) Date: 09/11/2022 FOR SUPPLY OF MANDATORY SPARES OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR - FGD.</li> </ul> <p>EXISTING VENDOR/CONTRACTOR WILL INCLUDE:</p> <ol style="list-style-type: none"> <li>IN CASE EXISTING CONTRACTOR IS THE SOLE PROPRIETORSHIP FIRM, ANY SOLE PROPRIETORSHIP FIRM OWNED BY SAME SOLE PROPRIETOR.</li> <li>IN CASE EXISTING CONTRACTOR IS THE PARTNERSHIP FIRM, ANY FIRM COMPRISING OF SAME PARTNERS/SOME OF THE SAME PARTNERS (BUT NOT INCLUDING ANY NEW PARTNER); OR SOLE PROPRIETORSHIP FIRM OWNED BY ANY PARTNER(S) AS A SOLE PROPRIETOR.</li> </ol>

ANNEXURE - II

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091  
फैक्स/Fax: (033) 23211960      फोन/Phone: बोर्ड/EPABX: 23398220

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**FORMAT FOR NO DEVIATION CERTIFICATE**(To be submitted in the bidder's letter head)

To,  
 BHARAT HEAVY ELECTRICALS LIMITED,  
 Power Sector - Eastern Region,  
 Plot no 9/1, DJ Block, Sector - II, Salt Lake City,  
 Kolkata – 700 091

SUB	NO DEVIATION CERTIFICATE.		
JOB	<b>DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS &amp; TACKLES, FILL OF LUBRICANTS &amp; CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION &amp; STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION &amp; COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE).</b>		
REF	1.0	TENDER NO: PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56)	DATE: 23/10/2024
	2.0	ALL OTHER PERTINENT ISSUES TILL DATE.	

Dear Sir/Madam,

With reference to above tender, this is to confirm you that we have gone through each and every terms and conditions mentioned in the enquiry (Terms and Conditions) and we offer our unqualified acceptance of the same. This is also to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc.

We also confirm that we have not changed/modified the tender documents as appeared in the website/newspapers and in case of observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and confirm our acceptance to reverse auctioning process and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT.

It is also confirmed that the price has been quoted in the format received with the enquiry. We confirm that, we do not have any objections to splitting the quantity among the different bidders by BHEL and price shall remain firm till the completion supply of full ordered quantity.

Any deviation found subsequently at any time during execution of order shall be treated null and void.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized  
representative of the bidder)

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

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

To,

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

Dear Sir,

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

**Ref :** 1) NIT/Tender Specification No: PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56)      DATE: 23/10/2024,  
2) All other pertinent issues till date

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

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

1. \_\_\_\_\_ 2. \_\_\_\_\_  
 3. \_\_\_\_\_ 4. \_\_\_\_\_  
 ...  
 ...  
 ...

Thanking you,  
Yours faithfully,

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

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

**Note:**

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

**DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017**  
(To be submitted in the bidder's letter head)

---

To,

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

Dear Sir,

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

**Ref:** 1) NIT/Tender Specification No: .....

2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that \_\_\_\_\_ (specify the name of the organization here), is not from such a country or, if from such a country, has been registered with the Competent Authority (attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT), if applicable)

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

Thanking you,

Yours faithfully,

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

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

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)/ Udyam Registration Certificate No. .... dtd: ..... Category: ..... (Micro/Small/Medium)). (Copy enclosed).

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

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722(E) dated October 5, 2006:  
Rs..... 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
3. **For Enterprises** (having EM-II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum): Investment in plant and machinery or equipment is Rs..... Lacs and turnover is Rs. .... Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)
4. **For Enterprises** (Udyam registered under Udyam Registration Portal): Investment in plant and machinery or equipment is Rs..... Lacs and turnover is Rs. .... Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)

**(Strike off whichever is not applicable)**

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

Or

The enterprise has been graduated upward from its original category (micro/small/medium) **(strike off which is not applicable)**, the enterprise shall maintain its prevailing status till expiry of one year from the close of year of registration, as notified vide S.O. No. 2119 (E) dated 26.06.2020 & S.O. 2347 (E), dated 16.06.2021 published in the gazette notification dated 26.06.2020 & 16.06.2021 by Ministry of MSME.

Or

The enterprise has been reverse-graduated from its original category (micro/small/medium) **(strike off which is not applicable)**, the enterprise will continue in its present category till the closure of the financial year and it will be given the benefit of the changed status only with effect from 1<sup>st</sup> April of the financial year following the year in which such change took place, as notified vide S.O. No. 2119 (E) dated 26.06.2020 & S.O. 2347 (E), dated 16.06.2021 published in the gazette notification dated 26.06.2020 & 16.06.2021 by Ministry of MSME.

Date:

(Signature)

Name:

Membership Number:

Seal of the Chartered Accountant

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax: (033) 23211960 फोन/Phone: बोर्ड/EPABX: 23398220

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FORMAT FOR SEEKING CLARIFICATION

ANNEXURE-VI

Job	DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE).			
Tender No	PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024			
Sl. no	Reference clause of tender document	Existing provision	Bidder's query	BHEL's clarification

**SUSPENSION OF BUSINESS DEALINGS WITH SUPPLIERS/ CONTRACTORS**

<b>1.0</b>	<b>Suspension of Business dealings with Suppliers/ Contractors</b>
1.1	BHEL reserves the right to take action against Suppliers/ Contractors who fail to perform or indulge in malpractices, by suspending business dealings with them.
1.2	<p>Suspension of business dealings with Suppliers/ Contractors could be in the form of following:</p> <ul style="list-style-type: none"> <li><b>a. Debarment within the unit for specific item(s)/ material category(ies)/ type of work(s) for six months.</b></li> <li><b>b. Debarment within the unit for all item(s)/ material category(ies)/ type of work(s) for one year.</b></li> <li><b>c. Debarment across BHEL for all items/ material category(ies)/ type of work(s) for two years.</b></li> </ul> <p>The Supplier may be debarred, as detailed hereinafter on the basis of one or more of the category wise reasons as enumerated hereunder:</p>
	<p><b>Debarment within the unit for a specific item(s)/ material category(ies)/ type of work(s) shall be imposed for six months in the following cases, if</b></p> <ul style="list-style-type: none"> <li>i. In the last three consecutive supplies of a specific material category, average quality rating, as provided in the supplier performance rating (SPR) as per SEARP, falls below 80% of the quality weightage. This is irrespective of supplies against PO(s) having single/ multiple delivery schedules.</li> </ul> <p>Note: Not applicable in cases for erection works of Power Sector Regions, where separate guidelines for evaluation of capacity of bidders is being followed.</p> <ul style="list-style-type: none"> <li>ii. Two consecutive delays, for reasons of delay attributed to the Supplier, in execution of the contracts where delay occurred is such that <ul style="list-style-type: none"> <li>a. prescribed maximum LD time limits of the contracts is exceeded or</li> <li>b. delay period has equaled/ exceeded half the original delivery period specified in the contracts whichever among the above is earlier.</li> </ul> </li> <li>iii. <ul style="list-style-type: none"> <li>a. Overall SPR (Supplier Performance Rating) in that particular Unit in line with SEARP falls below 60% of the specific material category.</li> <li>b. Bids of contractors (in PS-MSX portal) shall not be considered (if average score of last six months falls 60% or below as per guidelines for evaluation of capacity of bidders formula).</li> </ul> <p>Note: – for (b), No specific period of Debarment shall be applicable.</p> </li> <li>iv. <ul style="list-style-type: none"> <li>a. Supplier works are under strike/ lockout for a period of more than three months.</li> <li>b. Contractor has resorted to wanton stalling of work, strikes, picketing etc. during currency of the contract.</li> </ul> </li> </ul>

1.2.2	<p><b>Debarment within the unit for all item(s)/ material category(ies)/ type of work(s) shall be imposed for One year in the following cases, if</b></p> <ul style="list-style-type: none"> <li>i. Supplier tampers with tendering procedure affecting ordering process.</li> <li>ii. Supplier has misused BHEL documents/ drawings/ technical information or has breached the confidentiality agreement with BHEL.</li> <li>iii. after placement of order, Supplier fails to execute the contract.</li> <li>iv. within warranty period as per contract, Supplier continues to supply low/ less/ non-performing equipment/ services, repetitive failures, remains non-responsive.</li> <li>v. Wherever any part or full scope of supply/ work/ service has been awarded at the Risk and Cost of the defaulting vendor and the unexecuted value of scope for which the Risk and Cost action taken is more than 5% of the contract value.</li> <li>vi. After price bid opening but before placement of order, Supplier withdraws his offer or varies it in any manner within the validity period.</li> <li>vii. In spite of warnings, the Supplier persistently violates or circumvents the provisions of labour laws/ regulations/ rules or other statutory requirements.</li> <li>viii. Violation of Section 2, read with Section 3 of Integrity Pact, which are not covered in the list of defaults as per guidelines.</li> </ul>
1.2.3	<p><b>Debarment across BHEL shall be imposed for two years in following cases, if</b></p> <ul style="list-style-type: none"> <li>i. Supplier has made false declaration and/ or provided false information and/ or forged documents <b>or</b> has forged BHEL documents, certificates etc. for securing business, meeting PQR or for enlistment in BHEL or with other customers.</li> <li>ii. Supplier is found to be involved in cartel formation or in any other act so as to influence the bidding process or influence the price of the tender.</li> <li>iii. The Supplier has indulged in malpractices or misconduct such as bribery, corruption and fraud, pilferage, coercion, etc.</li> <li>iv. The Supplier is found guilty by any court of law for criminal activity/ offences involving moral turpitude in relation to business dealings.</li> <li>v. Supplier is found to have obtained any internal information/ documentation of BHEL by unauthorized means.</li> <li>vi. The foreign Principals along with the representing Agent shall be debarred together if information submitted jointly by them about their precise relationship, commission/ remuneration etc. payable/ receivable and other particulars as asked by BHEL, as per the extant guidelines regarding dealing with Agents of Foreign Suppliers is found false/ incorrect, at any stage.</li> <li>vii. Supplier has, damaged, failed to return free issue materials/tools etc. of BHEL, for which recovery could not be affected against such materials, or substituted free issue materials/ tools etc. of BHEL.</li> <li>viii. Supplier has been declared insolvent or is under dissolution/ insolvency proceedings so as to affect the execution of work.</li> <li>ix. The Supplier has tarnished/ maligned the image of BHEL or unfairly acted in a manner prejudicial to the commercial interest of BHEL or breached the confidentiality of the vital information with an intent to prejudice the interest of BHEL.</li> </ul>
1.2.4	A Supplier can also be debarred with the approval of Director (E, R&D) provided a direction to this effect has been received from the administrative ministry of the Government.

**Note: Above shall be applicable along with Guidelines for “Suspension of Business dealings with Suppliers/ Contractors” available in BHEL website <http://www.bhel.com>. These shall form part of tender documents.**

ANNEXURE-VIIIDECLARATION FOR RELATION IN BHEL

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

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

Dear Sir,

Sub: Declaration for relation in BHEL

Ref: 1) NIT/Tender Specification No: **PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56)** DATE: 23/10/2024,

I/We hereby submit the following information pertaining to relation/relatives of Proprietor/Partner(s)/Director(s) employed in BHEL.

**Tick (✓) any one as applicable:**

1. The Proprietor, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in BHEL

OR

2. The Proprietor, Partner(s), or Director(s) of our Company/Firm HAVE relation/relatives employed in BHEL and their particulars are as below:

(i)

(ii)

Signature of the Authorized Signatory

Note:

1. Attach separate sheet, if necessary.
2. If BHEL Management comes to know at a later date that the information furnished by the Bidder is false, BHEL reserves the right to take suitable action against the Bidder/Contractor.

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पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091  
फैक्स/Fax: (033) 23211960 फोन/Phone: बोर्ड/EPABX: 23398220

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DECLARATION

Date: -----

Job: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE).

E-Tender No.: PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56)

DATE: 23/10/2024

To: -----  
 Address: BHEL, -----  
 -----  
 -----  
 -----  
 Email: -----

Sub: Details of related firms and their area of activities

Dear Sir/Madam,

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

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

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

Regards,

(-----)

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

**PART – F****GENERAL TERMS & CONDITIONS OF REVERSE AUCTION**

Against this enquiry for the subject item/ system with detailed scope of supply/service as per tender specifications, BHEL shall be resorting to "REVERSE AUCTION PROCEDURE" i.e. ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. *Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA.*
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained for participation in the reverse auction.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax /e-mail the Compliance form (annexure III) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" which is inclusive of all cost elements in line with terms & conditions of the tender for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VI) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. *Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.*
12. The 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](http://www.bhel.com)), shall be initiated by BHEL and the results of the RA scrapped/ aborted.
13. *Reverse Auction will be conducted if two or more bidders are techno-commercially qualified. In case of two or three qualified bidders, there shall be no elimination of H1 bidder (whose quote is highest in sealed envelope price bid). In case of four qualified bidders, the H1 bidder shall be eliminated whereas in case of five qualified bidders, H1 & H2 bidders shall be eliminated. However, in case of six or more qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest. Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of qualified bidders is odd (e.g. if 7 bids are qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of qualified bidders who are MSE or qualifying under PPP-MII, Order 2017, provided their bids are within their respective margin of purchase preference {presently 15% for MSEs and 20% for PPP-MII, or as amended from time to time}.*

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

ARBITRATION & CONCILIATION (superseding the corresponding clause no. 32 (ARBITRATION) of GCC Rev-06)

1	<b><u>ARBITRATION &amp; CONCILIATION:</u></b>
1.1	<b><u>ARBITRATION:</u></b>
1.1.1	<p>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 1.2 herein below 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, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration &amp; Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Power Sector Region issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English.</p> <p>The Arbitrator shall pass a reasoned award.</p> <p>Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Kolkata (the place from where the contract is issued). The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 1.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.</p> <p>In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</p>
1.1.2	<p>In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) 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 &amp; Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.</p> <p>The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.</p>
1.1.3	Notwithstanding the existence of any dispute or differences 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 unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.
1.1.4	

1.2

**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.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. 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.

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 2.3 to this GCC (as available in [www.bhel.com](http://www.bhel.com)). The Procedure 2.3 together with its Formats (as available in [www.bhel.com](http://www.bhel.com)) 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.

The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 (as available in [www.bhel.com](http://www.bhel.com)) to this GCC from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure 2.3 (as available in [www.bhel.com](http://www.bhel.com)) with effect from the date as intimated by BHEL to it.

**BREACH OF CONTRACT, REMEDIES AND TERMINATION (shall supersede over “Risk and Cost” clause mentioned anywhere in the tender documents)**

In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is atleast 10% of the contact value, the same be encashed. In case the value of security instruments available is less than 10% of the contract value, the balance amount be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, etc. with BHEL) or legal remedies 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.

**PRICE SCHEDULE (UNPRICED)****PLEASE REFER****E-PROCUREMENT PORTAL <https://eprocurebhel.co.in>****ABOVE TO BE READ ALONG WITH SCHEDULE-2 (TOTAL PRICE BREAK-UP), ANNEXURE-I, ANNEXURE-II, APPENDIX-A & APPENDIX-B OF PRICE SCHEDULE (VOLUME-III) PROVIDED ALONG WITH NIT.**

PRICE SCHEDULEPLEASE REFER

E-PROCUREMENT PORTAL <https://eprocurebhel.co.in>

ABOVE TO BE READ ALONG WITH SCHEDULE-2 (TOTAL PRICE BREAK-UP), ANNEXURE-I, ANNEXURE-II, APPENDIX-A & APPENDIX-B OF PRICE SCHEDULE (VOLUME-III) PROVIDED ALONG WITH NIT.

PART-H:FORMS AND PROCEDURESF-01RTGS FORMATForm for getting payment through RTGS (Real Time Gross Settlement)

01. NAME OF VENDOR:
02. ADDRESS:
03. VENDOR'S BANK A/C NAME:
04. VENDOR'S BANK A/C NO.:
05. NAME OF BANK:
06. NAME OF BRANCH:
07. BRANCH PH. NO.:
08. CITY:
09. IFSC CODE OF THE BRANCH:

THE CHARGES IF ANY FOR PAYMENT THROUGH RTGS MAY BE RECOVERED FROM THE BILL SUBMITTED BY US.

SIGNATURE OF AUTHORISED  
REPRESENTATIVE OF VENDOR WITH DATE &  
SEAL

CONFIRMATION BY BANKER WITH  
OFFICE SEAL

**Note: Incorrect information will create accounting complications and payment will be delayed.**

VENDOR DETAILS

1. Name & address of the vendor/company:
  
  
  
2. PAN No. of the vendor/company (scan copy of PAN Card):
  
  
  
3. Contact Person for the vendor/company:
  
  
  
4. Mobile number & E-mail of the contact person:
  
  
  
5. VAT / TIN:
  
  
  
5. CST:

SIGNATURE OF THE BIDDER WITH DATE & SEAL

FORMAT FOR DETAILS OF BIDDER

NAME OF BIDDER	
FAX NO.	
Registration Number*	
Name of Partners / Directors	
Bidder Type Indian/ Foreign*	
City*	
State*	
Country*	
Postal Code*	
PAN/TAN Number*	
Company's Establishment Year	
Company's Nature of Business*	
Company's Legal Status* {limited company/undertaking/joint venture/partnership/other}	
Company Category* {micro unit as per MSME/small unit as per MSME/medium unit as per MSME/Ancillary unit/project affected person of this company/ssi/ other}	
Enter Company's Contact Person Details Title(Mr. / Mrs. / Ms. / Dr. / Shri)*	
Contact Name*	
Date Of Birth*	
Correspondence Email* (Correspondence Email ID can be same as your Login ID. All the mail correspondence will be sent only to the Correspondence Email ID.)	
Designation	
Phone*	
Mobile*	

SIGNATURE OF THE BIDDER WITH DATE &amp; SEAL

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

**PREAMBLE**

<b>SL NO</b>	<b>DESCRIPTION</b>
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rate. Clauses under this preamble shall be read in conjunction with all other tender sections as applicable and shall have precedence over any contrary statement mentioned anywhere in this document.
2	The work shall be carried out as per specifications, the description of the items in this schedule and/or Engineer's instructions.
3	Rate shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
4	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site.
5	No splitting of the job is envisaged. Decision of BHEL in this regard shall be final and binding to the bidders.
6	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them, BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified / altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
7	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections / volumes of the contract.
8	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder / contractor.
9	Bidder's Grand Total price (at sl. no. 1.0 of SCHEDULE-1 shall be considered for evaluation unless stated otherwise.
10	Incase of any discrepancy between item descriptions, relevant drawing and/ or specification clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

**SCH-1 - TOTAL PRICE**

S. No.	DESCRIPTION	UNIT	QTY	ALL INCLUSIVE TOTAL PRICE EXCLUDING GST & BOCW CESS (IN INR)
1	Total price for <b>Supply part including Mandatory spares and Services</b> comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants & consumables along with spares for erection, start-up and commissioning as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation & storage at site, in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of NTPC/BHEL's O&M staff and handover in flawless condition of the package to the end customer complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification ( <b>PE-TS-457-(571-13000-A)-A002</b> ) as specified above, amendment & agreements till placement of order.	Lot	1	<b>TO BE FILLED ONLINE</b>

**NOTE**

1.0	Taxes & duties shall be as per SCC.
2.0	Bidder shall quote GRAND total price of SCHEDULE-2 at Sl. No 1.0 above, All other amounts / rates of each portion of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.
3.0	Bidder to note that GRAND Total price at sl. no. 1.0 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.
4.0	Based on the itemwise percentage allocations as given in SCH - 2 , the amount for the individual portion of the job shall be arrived at. Bidder has to submit subsequent detailed break-up of the total price as per Annexure-I,Annexure-II ,APPENDIX-A and APPENDIX-B of this price schedule before placement of LOI/LOA.
5.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.
6.0	GST along with Cess (as applicable) legally leviable & payable by successful bidder as per GST Law shall be paid by BHEL, extra. Hence, bidder shall not include GST along with Cess (as applicable) in their quoted rates/ price.
7.0	The quoted price shall be all inclusive F.O.R. Site price, but excluding GST & BOCW Cess. GST & BOCW Cess shall be payable extra, as applicable.

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

**SCH-2 TOTAL PRICE BREAK-UP**

SI. No.	DESCRIPTION	UNIT	QTY	WEIGHTAGE
1	<b>Supply part</b> comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles (as per Appendix-A), fill of lubricants & consumables along with spares for erection (as per Appendix-B), start-up and commissioning spares as required, forwarding, proper packing, shipment and delivery at site for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. <b>(Break-up as per Annexure-I)</b>	LOT	1	0.7368421
2	Service part for unloading, handling, transportation & storage at site, in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), Training of NTPC/BHEL personnel for total 15 days (in 3-4 parts of 4-5 days each) covering hands on experience of operation and maintenance of air conditioning and ventilation system. Site personnel shall be trained for operation and maintenance activities covering daily, weekly, monthly, quarterly and yearly maintenance checks and handover in flawless condition of the package to the end customer complete with all accessories for the total scope defined as per BHEL NIT & tender technical specification as specified above, amendment & agreements till placement of order. <b>(Break-up as per Annexure-I)</b>	LOT	1	0.18421053
3	<b>Mandatory spares</b> comprising of manufacture, fabrication, assembly, inspection / testing (as applicable) at vendor's & sub-vendor's works, painting, forwarding, proper packing, shipment, delivery at site & guarantee as per tender technical specification above, amendment & agreements till placement of order. <b>(Break up of mandatory spares is to be furnished as per Annexure- II)</b>	LOT	1	0.07894737
<b>Total</b>				<b>1.00000000</b>

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE, UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

<b>TECHNICAL SPECIFICATION No:</b>	<b>PE-TS-457(571-13000-A)-A002</b>
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**ANNEXURE-I (SUPPLY & SERVICE PRICE BREAK UP)**

<b>SL NO</b>	<b>DESCRIPTION</b>	<b>Qty</b>	<b>UNIT</b>	<b>SUPPLY</b>			<b>TOTAL PRICE FOR ERECTION AND COMMISIONING</b>
				<b>Ex-WORKS PRICE</b>	<b>FREIGHT</b>	<b>TOTAL AMOUNT INCLUDING FREIGHT</b>	
<b>A</b>	<b>AC SYSTEM</b>						
1a*	DX type, air cooled condensing unit of minimum <b>35 TR (ACTUAL)</b> capacity. The refrigerant compressor shall be Scroll, hermetic / Semi-hermetic type suitable for Refrigerant R-134a / R-407c / R-410a environment friendly HFC refrigerants with drive package, Suction and discharge valves, capacity control system, expansion valve, crank case heater etc. A control panel shall be provided to house all gauges and controls. The panel shall contain all necessary terminal strips to facilitate external wiring. The unit shall be complete with expansion valve, all necessary fittings, accessories, insulated refrigerant piping to and from AHUs, foundation bolts, nuts, washers etc complete in all respect.	4	Nos				
1b*	Sheet metal cabinet type air handling units (double skin as per specification) The draw through horizontal AHUs shall comprise of Dampers, pre filter, fine filters, DX- cooling coil, Fan section with fan & TEFC sq cage induction motor, condensate drain pan, thermostatic controls and other accessories, like ladder along with supporting structure for filter and plenum, etc. to meet the AC load of control room area as per specification.	4	Nos				
1c*	VFD (along with starter panel) and other accessories as required for VFD for AHU centrifugal fan	4	Nos				
1d*	Monsoon reheating / winter heating kit comprising strip heaters, safety controls, air-stat, contactors, frame work, thermostat etc.	1	LOT				
1e*	Pan type humidifier, comprising geyser stat, for each AHU room.	1	LOT				
1f*	Fresh air fan (axial flow type), complete with motor, inlet cone, air filters (pre and fine), dampers etc.	2	Nos				
2*	Thermal insulation of supply air duct & return air duct with finish as specified.	760	SQM*				

**Bidder to submit Price break-up before placement of LOW LOA**

JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)

TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024

TECHNICAL SPECIFICATION No:		PE-TS-457(571-13000-A)-A002				
ANNEXURE-I (SUPPLY & SERVICE PRICE BREAK UP)						
SL NO	DESCRIPTION	Qty	UNIT	SUPPLY		TOTAL PRICE FOR ERECTION AND COMMISSIONING
3*	MS medium class drain piping upto nearest drain point with insulation & cladded and without insulation					
a*	50mm with insulation and cladding	20	Rmt*			
b*	40mm with insulation and cladding	20	Rmt*			
c*	50mm without insulation and cladding	20	Rmt*			
d*	40mm without insulation and cladding	20	Rmt*			
4*	Air-cooled split type AC units consisting of condensing unit & evaporating unit including refrigerant pipes & fittings with insulation etc.					
(a)*	2.0 TR capacity (non-ductable type, 240 V, 1 phase ) with isolation switch , i.e MCB of suitable rating as specified, voltage stabilizer, cabling, all supporting structure and refrigerant piping to suite actual site condition.	4	Nos*			
(b)*	1.5 TR capacity (non-ductable type, 240 V, 1 phase ) with isolation switch , i.e MCB of suitable rating as specified, voltage stabilizer, cabling, all supporting structure and refrigerant piping to suite actual site condition.	2	Nos*			
<b>B</b>	<b>VENTILATION SYSTEM</b>					
1*	Modular type Unitary air filtration unit with centrifugal fan with motor, pumps with motors, filters, UAF internals, inlet air louvers, piping as per IS: 1239 pt I (heavy class galvanized), valves, nozzles, back wash arrangement, galvanized drain piping etc. as per specification of capacity total 80,000 CMH . Each UAF has 1 no centrifugal fan (1 x 100% duty) of capacity <b>80,000 CMH at min. 60 mmWC SP.</b>	2	No			
2*	Thermal insulation along with finish as per specification for supply air duct	400	SQM*			
3*	Roof extractor units (axial flow type) with hood, disconnect switch and all accessories as specified. <b>Following fan shall have 15 mmwc static pressure.</b>					
a)*	Capacity 40,000 CMH with Motor rating 5.5 KW	3	Nos.*			
b)*	Capacity 20,000 CMH with Motor rating 2.2 KW	1	Nos.*			

**Bidder to submit Price break-up before placement of LOW/LOA**

JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)

TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024

TECHNICAL SPECIFICATION No:		PE-TS-457(571-13000-A)-A002				
		ANNEXURE-I (SUPPLY & SERVICE PRICE BREAK UP)				
SL NO	DESCRIPTION	Qty	UNIT	SUPPLY		TOTAL PRICE FOR ERECTION AND COMMISSIONING
4*	Axial flow supply fans with pre and fine filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen along with support structure and all other accessories (suitable for 415V/3-phase supply). <b>Following fan shall have 30 mmwc static pressure.</b>					
a)*	Capacity 10,000 CMH with Motor rating 2.2 KW	6	Nos.*			
b)*	Capacity 4,000 CMH with Motor rating 0.75 KW	1	Nos.*			
5*	Axial flow supply fans with pre filter (wall mounted) complete with casing, TEFC sq cage induction motors & mounting frame, MS rain protection cowl, bird screen along with support structure and all other accessories (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 20 mmwc static pressure.</b>					
a)*	Capacity 10,000 CMH with Motor rating 1.5 KW	27	Nos.*			
6*	Axial flow exhaust fans (Bifurcated type, spark proof construction, wall mounted) complete with casing, flame proof motor & mounting frame, MS rain protection cowl, bird screen along with support structure and all other accessories epoxy painted (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 15 mmwc static pressure.</b>					
a)*	Capacity 7,500 CMH with Motor rating 1.1 KW	4	Nos.*			
7*	Axial flow exhaust fans (Wall mounted) complete with casing, TEFC sq cage induction motor & mounting frame, MS rain protection cowl, bird screen along with support structure and all other accessories epoxy painted (suitable for 415V/3-phase supply) as specified. <b>Following fan shall have 10 mmwc static pressure.</b>					
a)*	Capacity 15,000 CMH with Motor rating 1.1 KW	11	Nos.*			
b)*	Capacity 6,000 CMH with Motor rating 0.55 KW	2	Nos.*			

**Bidder to submit Price break-up**

**before placement of LOI/LOA**

JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)

TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024

TECHNICAL SPECIFICATION No:		PE-TS-457(571-13000-A)-A002				
ANNEXURE-I (SUPPLY & SERVICE PRICE BREAK UP)						
SL NO	DESCRIPTION	Qty	UNIT	SUPPLY		TOTAL PRICE FOR ERECTION AND COMMISSIONING
8*	Exhaust fan (propeller type) completes with induction motor & mounting frame MS rain protection cowl, bird screen and all other accessories as specified (suitable for 240V/ 1 phase). <b>Following fan shall have 5 mmwc static pressure.</b>					
a)*	Capacity 1000 CMH with Motor rating 100 watts	6	Nos.*			
<b>C</b>	<b>COMMON FOR AC AND VENTILATION SYSTEM</b>					
1*	Supply air ducting (finished) for above area complete with dampers, grills (with VCD & without VCD), supports (painted) and all accessories as specified.					
1.1*	Finished (Actual quantity of duct erected at site, excluding the scrap) GSS (zinc coating 275 gms/sq.m) Ducting with support structure etc.					
a)*	18 G	250	SQM*			
b)*	20 G	250	SQM*			
c)*	22 G	600	SQM*			
d)*	24 G	900	SQM*			
1.2*	Supply air Grill/diffuser with VCD (Extruded Aluminium).	20	SQM*			
1.3*	Return air Grill/diffuser without VCD (Extruded Aluminium).	22	SQM*			
1.4*	Supply air Grill/diffuser with VCD (MS, POWDER COATED).	18	SQM*			
1.5*	Return air Grill/diffuser without VCD (MS, POWDER COATED).	6	SQM*			
1.6*	Volume control damper in GI construction as per specification	8	SQM*			
1.7*	Wall mounted dampers (gravity operated) for different areas.	4	SQM*			
1.8*	Inlet Louvres	4	SQM*			
1.9*	MS Duct With Epoxy paint for battery room.	5	SQM*			
2*	ACOUSTIC INSULATION (AS PER THE SPECIFICATION)	250	SQM*			
3*	FIRE DAMPER					
a)*	Fire damper	15	SQM*			
b*)	Fusible Link type Fire Damper	2	Nos*			

**Bidder to submit Price break-up before placement of LOWLOA**

JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)

TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024

TECHNICAL SPECIFICATION No:		PE-TS-457(571-13000-A)-A002			
ANNEXURE-I (SUPPLY & SERVICE PRICE BREAK UP)					
SL NO	DESCRIPTION	Qty	UNIT	SUPPLY	TOTAL PRICE FOR ERECTION AND COMMISSIONING
4*	Motorized Actuator with single phase power supply for the above Fire damper and Volume control damper with auto resetting, limit switches, indication lamps etc.	16	Nos*		
5	Cable tray, conduits, junction box, lugs and glands, Local control panel and Field instruments like pressure gauge, temperature gauge, switches and transmitters for pressure, flow and temperature measurement, differential pressure switch across filters, flow meters, RH and Temperature sensor and other required instruments as per specifications, including necessary control panel form hook up with main DDCMIS as per specifications	1	LOT		
6*	Providing full support during FAT of DDCMIS, preparation of control scheme, and commissioning of DDCMIS as per relevant specification.	20	Mandays*		NA
7	Total lumpsum price for special tools & tackles for maintenance inclusive of packing forwarding, transportation up to site, etc. (Break up of to be furnished as per Appendix- A)	1	LOT		NA
8	Total lumpsum price for commissioning spares inclusive of packing forwarding, transportation up to site, etc. (Break up of to be furnished as per Appendix- B)	1	LOT		NA
TOTAL PRICE					
NOTES					
1	The bidder shall furnish unit rates for variable item (marked *) for necessary adjustment (plus or minus) variation during detailed engg. stage. The unit rates quoted above shall be considered and no separate unit rates shall be quoted. Unit rates shall be valid throughout the contract.				
2	Bidder to note that above BOQ for this tender has to be read in conjunction with tender specification. Any item, if not mentioned in above BOQ but indicated in tender specification and required for completion of the system shall deemed to be included in above price.				

**Bidder to submit Price break-up before placement of LOI/LOA**

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

<b>TECHNICAL SPECIFICATION:</b>	<b>PE-TS-457-(571-13000-A)-A002</b>
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**ANNEXURE-II (MANDATORY SPARES)**

<b>SI. No.</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>Ex-WORKS PRICE</b>	<b>FREIGHT</b>	<b>TOTAL AMOUNT INCLUDING FREIGHT</b>
<b>AIR CONDITIONING AND VENTILATION SYSTEM</b>						
1	<b>Air handling unit (for each model)</b>					
1.1	V-belts for AHU Blower	Sets	2			
1.2	AHU Blower bearing	Sets	1			
1.3	Blower motor bearing	Sets	1			
1.4	Filters at suction and discharge of all AHUs	Nos.	25% of installed population			
2	<b>Unitary air filtration unit</b>					
2.1	Supply Air fans					
2.1.1	V-belts for supply air fans	Sets	2			
2.1.2	Supply air fan bearings	Sets	1			
2.2	<b>UAF Pump</b>					
2.2.1	Pump bearings	Sets	1			
2.2.2	Impeller for pump	Nos.	1			
2.2.3	Pump Shaft	Nos	1			
2.2.4	Shaft sleeves	Sets	1			
2.2.5	Gland Packings for pumps	Sets	1			
2.2.6	Nylon Filter	Sets	1			
2.2.7	Spray nozzles	Nos.	5% of total population or 50 Numbers whichever is higher.			
2.2.8	Water strainer	Nos.	1			
2.2.9	Brass suction screen/strainer for unitary air filtration tank.	Sets	1			

**Bidder to submit Price break-up before placement of LOI/LOA**

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

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<b>TECHNICAL SPECIFICATION:</b>	<b>PE-TS-457-(571-13000-A)-A002</b>
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**ANNEXURE-II (MANDATORY SPARES)**

<b>Sl. No.</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>Ex-WORKS PRICE</b>	<b>FREIGHT</b>	<b>TOTAL AMOUNT INCLUDING FREIGHT</b>
2.2.10	Motor for Centrifugal fan for UAF	Nos.	1			
3	<b>Control &amp; Instrumentation</b>					
i)	Air-Conditioning System					
3.1	Electronic Transmitters					
3.1.1	Transmitters of all types and model no. (for the measurement of Pressure, differential pressure flow, level, temperature etc.)	Nos.	5% or 1 No. of each type and model whichever is more. (to be divided into various ranges in proportion to main population)			
3.2	Temperature elements					
3.2.1	RTD's*	Nos.	5% or 1 No. which ever is more **			
3.2.2	Thermo well*	Nos.	5% or 1 No. which ever is more ** ** (to be divided into various insertion lengths in proportion to main population)			

**Bidder to  
submit Price  
break-up  
before  
placement of  
LOI/LOA**

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

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<b>TECHNICAL SPECIFICATION:</b>	<b>PE-TS-457-(571-13000-A)-A002</b>
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**ANNEXURE-II (MANDATORY SPARES)**

<b>SI. No.</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>Ex-WORKS PRICE</b>	<b>FREIGHT</b>	<b>TOTAL AMOUNT INCLUDING FREIGHT</b>
3.3	All types of Local Indicators	Nos.	5% or 1 No. of each make, model and type whichever is more (to be divided to various ranges in proportion to main population of all make, model and type)			
3.4	Process Actuated Switch Devices Includes all types of Pressure, differential pressure, flow, and temperature, and differential temperature, level switch Devices.	Nos.	5% or 1 No. Of each type and model whichever is more.			
3.5	Relative Humidity Sensors	Nos.	1			
3.6	Geyser stat	Nos.	1			
3.7	Local Humidity/Temperature indicators	Nos.	2Nos. each.			
4	<b>Process Connection Piping (for Impulse Piping / Tubing, Sampling Piping / Tubing and Air Supply Piping as Applicable)</b>					
4.1	Valves	Nos.	10% or 1 No. of each type, class, size and model whichever is more.			
4.2	2 way, 3way, 5way valve manifolds	Nos.	10% or 1 No. of each type, class, size and model whichever is more.			

**Bidder to submit Price break-up before placement of LOW/LOA**

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

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**ANNEXURE-II (MANDATORY SPARES)**

<b>Sl. No.</b>	<b>ITEM DESCRIPTION</b>	<b>UNIT</b>	<b>QTY.</b>	<b>Ex-WORKS PRICE</b>	<b>FREIGHT</b>	<b>TOTAL AMOUNT INCLUDING FREIGHT</b>
4.3	Fittings	Nos.	10% or 1 No. of each type, class, size and model whichever is more.			
(II)	<b>Ventilation System</b>					
5	<b>Measuring Instruments</b>					
5.1	Pressure Gauge	Nos.	1 No. (for centrifugal pumps of UAF units).			
5.2	Level transmitter	Nos.	1 No.			
5.3	Pressure transmitter	Nos.	1 No. (for UAF units)			
6	<b>Process Connection Piping (for Impulse Piping / Tubing, Sampling Piping / Tubing and Air Supply Piping as Applicable)</b>					
6.1	Valves	Nos.	1 no. of each type, class, size and model			
6.2	2 way valve manifold	Nos.	1 no. of each type, class, size and model			
6.3	Fittings	Nos.	1 no. of each type, class, size and model			
	<b>Total</b>					

**Notes:**

1 Mandatory spares listed in Price Schedule is bare minimum requirement. In case any additional mandatory spares requirement is covered elsewhere in the tender specification apart from specified above, same shall be deemed to have been covered in bidder's scope of supply.

**Bidder to submit Price break-up before placement of LOI/LOA**

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

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TECHNICAL SPECIFICATION:		PE-TS-457-(571-13000-A)-A002				
ANNEXURE-II (MANDATORY SPARES)						
Sl. No.	ITEM DESCRIPTION	UNIT	QTY.	Ex-WORKS PRICE	FREIGHT	TOTAL AMOUNT INCLUDING FREIGHT
2	A 'set' means items or sub-items required for each type/size range of the assembly/ sub-assembly, required for replacement in one main equipment. It is further intended that the assembly/ sub-assembly which have different orientation (like left hand or right hand, top or bottom), different direction of rotation or mirror image positioning or any other reasons which result in maintaining two different sets of the spares to be used for the subject assembly/ sub-assembly, these shall be considered as different types of assembly/ sub-assembly.					
3	All mandatory spares shall be supplied as per the requirement of the tender specifications. 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, without any commercial implication.					
4	Whenever the quantities have been indicated for each type, size, thickness, material, radius, range etc., these shall cover all the items supplied and installed					
5	Wherever rubber part viz: coupling, V belt, flexible hose etc. have been used ,minimum quantity as specified above is to be supplied and any item which is not covered above minimum 10% or 01 no whichever is higher is to be supplied.					
6	Wherever non-metallic fabric/paper filter etc. have been used ,minimum quantity as specified above is to be supplied and any item which is not covered above minimum 10% or 01 no whichever is higher is to be supplied					
7	Wherever quantity has been specified as percentage (%), the quantity of mandatory spares to be provided by contractor shall be the specified percentage (%) of the total population of the plant. In case the quality so calculated happens to be a fraction, the same shall be rounded off to next higher whole number.					
8	Bidder to write "Quoted / Not Applicable" against all items. Any item which is quoted as "not applicable" by the bidder in the above list and is found to be "applicable" at a later date shall be supplied by the bidder without any commercial and delivery implication.					
9	Any special tool required for maintenance of any of the equipment being supplied is to be included in mandatory T&P along with the equipment.					
10	Any cell left blank in the unpriced schedule shall be treated as "Quoted" and is included in total price.					
11	* With head assembly, terminal block and nipple					
12	** to be divided into various insertion lengths in proportion to main population					

**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

**TENDER NO. PSER:PUR:PMX:441(IV):054 (ENQ:24:PP:0015:PUR:56) DATE: 23/10/2024**

**TECHNICAL SPECIFICATION No: PE-TS-457-(571-13000-A)-A002**

**APPENDIX-A (Maintenance tools & tackles)**

SL NO	DESCRIPTION	UNIT	Qty	Ex-WORKS PRICE	FREIGHT	TOTAL AMOUNT INCLUDING FREIGHT
1	FLAT D WRENCH - 6 MM TO 32 MM (12 Pcs)	SET	1			
2	BOX WRENCHES - 6 MM TO 22 MM (14 Pcs)	SET	1			
3	RING SPANNER - 6 MM TO 32 MM (12 Pcs)	SET	1			
4	ALLEN KEYS - 2 MM TO 10 MM	SET	1			
5	CRESCENT SCREW SPANNER	NO.	1			
6	SCREW DRIVER	NO.	1			
7	OFFSET SCREW DRIVER	NO.	1			
8	INSULATED PLIER	NO.	1			
9	TORCH LIGHT ( SUITABLE FOR 2 CELL)	NO.	1			
10	HAMMER 1 LB	NO.	1			
11	OIL CAN	NO.	1			
12	POCKET THERMOMETER - 0 TO 50 DEG. C	NO.	1			
13	INSULATION TAPE ROLL	NO.	1			
14	STEEL FOOT RULE - 12"	NO.	1			
15	FEELER GAUGE 9 BLADES	NO.	1			
16	PIPE WRENCH	NO.	1			
17	FLARE NUT (1/4")	NOS.	6			
18	FLARING TOOL	NO.	1			
19	TUBE CUTTER	NO.	1			
20	GAS CHARGING PIPE	NO.	1			
21	NITROGEN CHARGING ADAPTER	NO.	1			
22	PRESSURE GAUGE (2 1/2" DIA DIAL) 0 - 300 PSI	NO.	1			
23	PRESSURE GAUGE (2 1/2" DIA DIAL) 0 - 500 PSI	NO.	1			
24	COMPOUND GAUGE (2 1/2" DIA DIAL) (-30" to 150 PSI	NO.	1			
25	PSYCHRO METER	NO.	1			
26	LOCK WITH KEY FOR TOOL BOX	NO.	1			
27	RATCHET 1/4"	NO.	1			
28	MS TOOL BOX	NO.	1			
29	Measuring tape	NO.	1			
30	Tachometer	NO.	1			
31	Double ended spanner	SET	1			
32	Gasket punch	NO.	1			
33	Centre punch	NO.	1			
34	Scissors for sheet metal cutting	NO.	1			
35	Multimeter	NO.	1			
36	Anemometer	NO.	1			
37	Slide wrench 8"	NO.	1			
38	Slide wrench 10"	NO.	1			
39	Slide wrench 6"	NO.	1			
40	Box spanner set	SET	1			
	<b>Total</b>					

**NOTES**

1	ABOVE IS THE MINIMUM LIST. ANY OTHER TOOL / TACKEL REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION.
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**VOLUME-III**  
**PRICE SCHEDULE, REV-00**

**JOB: DESIGN, ENGINEERING, MANUFACTURE, FABRICATION, ASSEMBLY, INSPECTION / TESTING, PAINTING INCLUDING MAINTENANCE TOOLS & TACKLES, FILL OF LUBRICANTS & CONSUMABLES ALONGWITH SPARES FOR ERECTION, COMMISSIONING SPARES AS REQUIRED, MANDATORY SPARES FORWARDING, PROPER PACKING, SHIPMENT AND DELIVERY AT SITE ,UNLOADING, HANDLING, TRANSPORTATION & STORAGE AT SITE, IN-SITE TRANSPORTATION, ASSEMBLY, ERECTION & COMMISSIONING, FINAL PAINTING AT SITE, MINOR CIVIL WORK, TRIAL RUN AT SITE AND CARRYING OUT PERFORMANCE GUARANTEE / FUNCTIONAL / DEMONSTRATION TESTS AT SITE (AS APPLICABLE), TRAINING OF NTPC/BHEL PERSONNEL OF HVAC SYSTEM FOR FGD PROJECT 3X660 MW NPGCL NABINAGAR TPP (FGD SYSTEM PACKAGE)**

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**TECHNICAL SPECIFICATION No: PE-TS-457-(571-13000-A)-A002**

**APPENDIX-B (Commissioning spares)**

SL NO	DESCRIPTION	UNIT	Qty	Ex-WORKS PRICE	FREIGHT	TOTAL AMOUNT INCLUDING FREIGHT
1	FAN BELTS	SET	1			
2	PRESSURE GAUGE	NO.	1			
3	TEMPERATURE GAUGE	NO.	1			
4	FILTER	SET	1			
5	COMPRESSOR OIL	Lot	1			
6	REFRIGERANT	Lot	1			
7	LUBRICANT (EACH TYPE)	Lot	1			
<b>Total</b>						
<b>NOTES</b>						
1	ABOVE IS THE MINIMUM LIST. ANY OTHER COMMISSIONING SPARE REQUIRED FOR THE SYSTEM SHALL ALSO BE PROVIDED BY THE VENDOR WITHOUT ANY COST IMPLICATION.					

**Bidder to submit  
Price break-up before  
placement of  
LOI/LOA**

**BANK GUARANTEE FOR PERFORMANCE SECURITY**

Bank Guarantee No:

Date:

To

NAME

**& ADDRESSES OF THE BENEFICIARY**

Dear Sirs,

In consideration of the Bharat Heavy Electricals Limited (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 at BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its Unit at Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700091 having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at \_\_\_\_\_<sup>1</sup> hereinafter referred to as the 'Contractor/Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated .....<sup>2</sup> valued at Rs.....<sup>2</sup> ( Rupees -----)for <Nature of Work<sup>3</sup> (hereinafter called the 'Contract') and the Contractor 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 ----- ( Rupees -----)<sup>4</sup> without any demur, immediately on a demand from the Employer, . 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 Contractor/ Supplier in any suit or proceeding pending before any Court or Tribunal relating thereto 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 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 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 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 Contractor/Supplier and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor/Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said 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 Contractor and notwithstanding any security or other guarantee that the Employer may have in relation to the Contractor's liabilities.

This Guarantee shall remain in force upto and including.....<sup>5</sup> 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 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 the .....<sup>6</sup> (3 months more than the present date of validity of Bank Guarantee) 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 exceed.....<sup>7</sup>
- b) This Guarantee shall be valid up to .....<sup>8</sup>
- c) Unless the Bank is served a written claim or demand on or before .....<sup>9</sup> (3 months more than the present date of validity of Bank Guarantee) 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.

*Any claim or dispute arising under the terms of this document shall only be enforced or settled in the courts of at Kolkata only.*

For and on behalf of  
(Name of the Bank)

Dated.....

Place of Issue.....

<sup>1</sup> NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

<sup>2</sup> DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

<sup>3</sup> PROJECT/SUPPLY DETAILS

<sup>4</sup> BG AMOUNT IN FIGURES AND WORDS

<sup>5</sup> VALIDITY DATE

<sup>6</sup> DATE OF EXPIRY OF CLAIM PERIOD

<sup>7</sup> BG AMOUNT IN FIGURES AND WORDS.

<sup>8</sup> VALIDITY DATE

<sup>9</sup> DATE OF EXPIRY OF CLAIM PERIOD

**Note:**

1. Units are advised that expiry of claim period may be kept 2/3 months after validity date.
2. In Case of Bank Guarantees submitted by Foreign Vendors-
  - 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 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 (BHEL's Consortium Bank). 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). In case, of Foreign Vendors, the BG Format provided to them should clearly specify the same.
- b.4** The BG should clearly specify that the demand or other document can be presented in electronic form.

<b>List of Consortium Banks *</b>	
	<b>Nationalised Banks</b>
1	Allahabad bank
19	Vijaya Bank
2	Andhra bank
20	<b>Public Sector Banks</b>
3	Bank of Baroda
21	IDBI
4	Canara Bank
22	<b>Foreign banks</b>
5	Corporation bank
23	CITI Bank N.A
6	Central bank
24	Deutsche Bank AG
7	Indian Bank
25	The Hongkong and Shanghai Banking Corporation Limited
8	Indian Oversea Bank
26	Standard Chartered Bank
9	Oriental bank of Commerce
27	J P Morgan
10	Punjab National Bank
28	<b>Private banks</b>
11	Punjab & Sindh Bank
29	Axis Bank
12	State Bank of India
30	The Federal Bank Limited
13	State Bank of Hyderabad
31	HDFC
14	Syndicate Bank
32	Kotak Mahindra Bank
15	State Bank of Travancore
33	UCO Bank
16	Union Bank of India
34	ICICI
17	United Bank of India
35	Indusind Bank
18	
36	Yes Bank

\* wef 22.03.2016

## RTGS DETAILS OF BHEL-PSER FOR EFT BY BIDDER/CONTRACTOR

*Form for getting payment through RTGS (Real Time Gross Settlement)*

01. Name of Vendor	BHARAT HEAVY ELECTRICALS LTD.
02. Address	<del>BHEL</del> BHEL HOUSE, SIRI FORT, N.DELHI
03. Vendors Bank A/c Name	BHARAT HEAVY ELECTRICALS LTD.
04. Vendors Bank A/c No.	11107800029
05. Name of Bank	STATE BANK OF INDIA
06. Name of Branch	COMMERCIAL BR., SALT LAKE, SECTOR-V KOLKATA
07. Branch Phone No.	033-23575666
08. City	KOLKATA
09. IFSC Code of the Branch	SBIN 0004289

*The charges if any for payment through RTGS may be recovered from the Bill submitted by us.*

Signature of Authorised Representative / K. K. Coari  
 के. कोआरी / K. K. Coari  
 उप महामंत्री (वित्त) / Dy. General Manager (Fin)  
 श्री. एच. इ. पाल. : पी.एस.इ.आर : कोलकाता-700 091  
 BHEL:PSER / Kolkata-700 091

Confirmation by Banker  
 with office seal



*Note : Incorrect information will create Accounting complications  
 and payment will be delayed*

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33.0	ANY OTHER SPECIAL MAJOR CONDITION
34.0	OTHER TERMS

This volume shall be construed as part of tender document and shall be read along-with other volumes of tender. Unless otherwise specified, in case of any confusion of any clause/ provision of this volume or any conflict/ inconsistency of any clause/ provision of this volume with that of other volumes, the same shall be brought out by the bidder in writing to BHEL for clarification or during pre-bid discussions, if applicable, failing which most stringent interpretation in favour of BHEL shall be adopted and the same shall be binding to the bidder. Unless otherwise specified, all terms & conditions shall be applicable for entire scope and for each part/ package of tender. This volume is common for both supply & service parts.

CLAUSE NO	DESCRIPTION
<b>1.0</b>	<b>PROJECT SYNOPSIS AND GENERAL INFORMATION</b>
1.1	<p>NTPC (for NABINAGAR POWER GENERATING COMPANY LTD.) is setting up three units of 3x660 MW Super Thermal Power Project (coal based) at Nabinagar, District- Aurangabad, State of Bihar.</p> <p>The plant is located in Aurangabad district of Bihar at a distance of about 15 Kms from Barun in Aurangabad district of Bihar and is approachable from NH-2 through a 20 Kms (approx.) long single lane metaled road. The Aurangabad city is about 55 Kms from Project site.</p>
1.2	<b>APPROACH TO SITE</b>
	<p>Nearest Railway station is Ankhora on Sone – Garwa Road Section of Eastern Central Railway at about 1.0 Kms. From the project site.</p> <p><b>Airport:</b> The nearest airport at Gaya is at a distance of about 120 Kms from project site. The distances of site from Patna Airport and Varanasi Airport are about 250 Kms &amp; 220 Kms respectively.</p>
1.3	Owner: NABINAGAR POWER GENERATING CO PVT LIMITED
<b>2.0</b>	<b>NAME OF WORK</b>
2.1	The work to be done under this specification comprises of for Supply part including Mandatory spares and Services comprising of design (i.e. preparation and submission of drawing /documents including "As Built" drawings and O&M manuals), engineering, manufacture, fabrication, assembly, inspection / testing at vendor's & sub-vendor's works, painting, maintenance tools & tackles, fill of lubricants & consumables along with spares for erection, start-up and commissioning as required, forwarding, proper packing, shipment and delivery at site, unloading, handling, transportation & storage at site, in-site transportation, assembly, erection & commissioning, final painting at site, minor civil work, trial run at site and carrying out Performance guarantee / Functional / Demonstration tests at site (As applicable), training of NTPC/BHEL's O&M staff and handover in flawless condition of the HVAC system to the end customer
2.2	The drawings/ documents issued are for tender purpose only.
<b>3.0</b>	<b>SCHEDULE OF SUPPLY &amp; EXECUTION</b>
3.1	Successful bidder shall furnish L-1, L-2/ L-3 schedule indicating break-up of start & finish dates of design & engineering, manufacturing/ supply (including main scope, spares, as applicable), erection, commissioning, handing over, etc within stipulated completion periods (Supply part & Service part) matching with project schedule, for approval of BHEL. The successful bidder should also ensure monitoring of these activities on daily/ weekly/ monthly basis, whenever required by BHEL. The project schedule might undergo revision/ modification periodically, for which the successful bidder may have to prepare/ modify construction schedule periodically in consultation with BHEL, so as to match with revised project milestones.
3.2	<p><b>Milestone schedule of the project.</b></p> <p><b>Revised milestone schedule</b> Gas in U#1: MAR'25, U#2: JUNE'26, U#3: SEP'25</p>

<b>4.0</b>	<b>DIVISIBLE CONTRACT</b>
4.1	Bidder shall note that separate orders shall be placed for <b>(a) Supply part, (b) Services part, (c) Mandatory Spares</b> . Performance Bond shall be calculated for respective orders separately and successful bidder shall submit accordingly.
4.2	Notwithstanding anything stated elsewhere in the tender, the contract to be awarded on the basis of supply & service contract (divisible contract) on single source responsibility. In the mode of contracting on the basis of supply & service, the supply portion of the contract will correspond to the price of supply part of price schedule, and service portion of contract will correspond to the price of service part of price schedule.
4.3	But the separate orders shall not in any way dilute the responsibility of the successful bidder for the successful completion of job as per tender and separate orders shall contain a cross-fall breach clause, namely that a breach in one contract shall automatically be classified as a breach on other contracts which will confer a right on BHEL to terminate the other contract at the risk and cost of the successful bidder.
4.4	The title of ownership of goods to be supplied shall pass on to the owner on dispatch ex-works/ FOR destination. However, till the scope is completed in all respect and the plant/ equipment is taken over, the goods shall remain with the custody of the successful bidder.
<b>5.0</b>	<b>EVALUATION OF BID</b>
	Bidders should quote prices as per format supplied in the tender. Bids shall be evaluated based on total price quoted (supply & services) including any loading of price as mentioned in technical specification/ SCC/ Price Schedule, as applicable.
6.0	<b>CONSIGNEE ADDRESS (Bill To)</b>
	Construction Manager, BHEL site office, NPGCL, NABINAGAR STPP 3X660 MW) FGD DIST. AURANGABAD, STATE: BIHAR BHEL PSER GSTIN No.- IOAAACB4146PIZU
7.0	<b>DELIVERY ADDRESS (SHIP TO)</b>
	Construction Manager, BHEL site office, NPGCL, NABINAGAR STPP 3X660 MW) FGD DIST. AURANGABAD, STATE: BIHAR
8.0	<b>BHEL SITE OFFICE ADDRESS</b>
	Construction Manager, BHEL site office, NPGCL, NABINAGAR STPP 3X660 MW) FGD DIST. AURANGABAD, STATE: BIHAR
9.0	<b>MODE OF DESPATCH</b>
	By Rail/Road on door delivery and freight pre-paid basis.
<b>10.0</b>	<b>TRANSIT INSURANCE</b>

	<p>In BHEL Scope.</p> <p>For each dispatch, vendor shall inform the following to the Underwriter under intimation to BHEL-PEM and BHEL Site office.</p> <ul style="list-style-type: none"> <li>• Policy No.</li> <li>• Consignee Name.</li> <li>• Consignment Details (items with their weights and value in INR).</li> <li>• Project Name and P.O. No.</li> <li>• LR No. and Date, Dispatch Origin, Destination Details and Invoice No.</li> </ul> <p>Vendors to intimate the underwriters quoting the insurance Policy No. as mentioned in the Purchase Order.</p> <p><b>Insurance Deductibles/ EXCESS:</b> Following Deductibles/ EXCESS may be considered:</p> <ul style="list-style-type: none"> <li>• For Marine Cover: -Rs 20000/- (for consignment upto Rs 100 Cr) 0.25% of consignment value subject to minimum of Rs 20,000/- (for consignment above Rs 100 Cr)</li> <li>• For Storage /Erection and Testing Cover:       <ul style="list-style-type: none"> <li>Normal Excess: 5 % of the claim amount subject to a minimum of Rs. 75,000 EEL.</li> <li>Testing Excess: 5% of the claim amount subject to minimum of Rs. 2,00,000 EEL.</li> </ul> </li> <li>• Act of God Perils: 10% of the claim amount subject to minimum of testing period excess with an upper limit of Rs.5 Crores.</li> <li>• Fire / Explosion Claims: 20% of claim amount subject to Minimum of testing Period Excess</li> <li>• Third Party liability including cross liabilities AOA/AOY-Rs.10 Cr per occurrence</li> </ul>
11.0	<p><b>DISPATCH INTIMATION</b></p> <p>Yes, in writing, not less than 30 (Thirty) days prior to date of shipment and dispatch details to be sent to:</p> <ol style="list-style-type: none"> <li>a. BHEL-PSER, Kolkata</li> </ol> <p>At the point of dispatch, vendor must furnish docs required as given below through Email / Fax:</p> <ol style="list-style-type: none"> <li>i. Vendor's invoice</li> <li>ii. LR RR 1 GR 1 courier Receipt</li> <li>iii. Packing List/ Challan indicating the items dispatched (with their weights)</li> <li>iv. Insurance intimation letter informing the underwriters about the dispatches</li> <li>v. MDCC (of BHEL / NTPC), as applicable</li> </ol> <p>It is Vendor's responsibility to ensure availability of trucks well in advance where consignment will require more number of trucks to be deployed for dispatches. No concession for non-availability of trucks shall be admissible after having given dispatch clearance.</p>
12.0	<p><b>DOCUMENT REQUIRED FOR VENDOR'S PAYMENT.</b></p> <p><b><u>For materials originating from Indian territory</u></b></p> <p>For claiming the payment against Dispatch, MRC and Freight, documents as mentioned in GCC Rev. 07 &amp; its corrigendum shall be submitted by the vendor to BHEL</p>

	<p>Packing List must comply to Clause No. 19.3 of General Commercial Terms &amp; Conditions of GCC Rev. 07. Description of items in Packing List shall be as per PO, so that proper correlation between PO &amp; Packing List may be made.</p> <p>Soft copy of documents for claiming payment shall be submitted by vendor as advance copy.</p> <p><b><u>For materials originating from non-Indian Territory</u></b></p> <p>Three (3) original and Three (3) copies of clean bill of lading or One (1) clean original Airway Bill &amp; Three (3) copies, in case of air freight.</p> <p>One (1) original and Three (3) copies of signed Invoices.</p> <p>One (1) original and Three (3) copies of Packing List (clearly showing number of packages, gross weight and net weight).</p> <p>Three (3) copies of certificate of country of origin.</p> <p>copy of MDCC from BHEL / NTPC (as applicable)</p> <p>One (1) Original + One (1) copy of Inspection Certificates/ Inspection Reports &amp; Approved Test Certificates (if any), issued by BHEL or its authorized representative / The Customer or its authorized representative.</p> <p>Three (3) of certificate from the vendor to the effect that drawings and catalogues for customs clearance purpose have been kept with the packages for shipment.</p> <p>Three (3) copies of certificate from the vendor to the effect that the contents in each case are not less than that entered in the invoices and guaranteed as new and as per the relevant technical specifications.</p> <p>Guarantee Certificate - One (1) Original + One (1) copy.</p>
<b>13.0</b>	<b>DEMURRAGE CHARGES</b> Demurrage charges shall be paid by supplier/ vendor only to the transporter. No claim shall be acceptable to BHEL in this regard.
<b>14.0</b>	<b>UNLOADING STORAGE &amp; MOVEMENT OF MATERIAL AT SITE</b> By vendor
<b>15.0</b>	<b>BUYER AND PAYING AUTHORITY</b> BHEL NPGCL NABINAGAR Site.
<b>16.0</b>	<b>CONCESSIONAL CUSTOM DUTY AGAINST ESSENTIALITY CERTIFICATE (EC)</b> Not applicable
<b>17.0</b>	<b>TAXES &amp; DUTIES</b>
17.1	All taxes excluding GST ( <b>as specified elsewhere in this clause</b> ) & BOCW Cess ( <b>as specified elsewhere in the tender</b> ) but including, Charges, Royalties, any State or Central Levy and other taxes for materials if any obtained for the work and for execution of the contract shall be borne by successful bidder and shall not be payable extra by BHEL. Any increase of above at any stage during execution of contract, including extension of the contract, shall have to be borne by successful bidder contractor. Bidder's quoted/ accepted rates/ price shall be inclusive of all such requirements.
17.2	GST along with Cess (as applicable) legally leviable & payable by successful bidder as per GST Law shall be paid by BHEL, extra. Hence, bidder shall not include GST along with Cess (as applicable) in their quoted rates/ price.
17.3	Successful bidder shall furnish proof of GST registration with GSTN Portal covering

	<p>the services under this contract.</p> <p>Registration should also bear endorsement for the premises from where the billing shall be done by successful bidder on BHEL for this project / work.</p>
17.4	Since GST on output will be paid by BHEL separately as enumerated above, bidder's quoted rates / price should be after considering the Input Credit under GST law at bidder's end.
17.5	TDS under Income Tax Act shall be deducted as per prevailing IT rules from the bills.
17.6	TDS under GST shall be deducted as per prevailing GST rules from the bills.
17.7.1	You may collect TCS under section 206C(1H) of Income Tax Act, 1961 if applicable.
17.7.2	In case, you collect TCS under section 206C(1H) of Income Tax Act, 1961, following compliance is required.
17.7.2.1	TAN and PAN of vendor should appear in all invoices/claims. Copy of TAN /TCS registration is to be submitted.
17.7.2.2	Amount of TCS and Assessable value on which TCS has been calculated should be specified clearly in the invoice.
17.7.2.3	You shall be required to submit certificate of TCS in Form no. 27D within 15 days from the due date for furnishing the statement of tax collected at the source.
17.7.3	In case, you do not collect TCS under section 206C(1H) of Income Tax Act, 1961, following declaration is to be submitted alongwith each invoice: - "I/We hereby declare that I/We are not required to collect TCS under section 206C(1H) of Income Tax Act, 1961, on this bill.
17.7.4	In event of failure to comply with the provisions of the Act, or proper certificate not issued, or if tax collected but not remitted to the Government, or for any other reason and thereby causing loss to BHEL, the same shall be recoverable from the vendor with applicable interest.
17.7.5	You shall comply with all statutory amendment/notifications in this respect.
17.8	<p>Bidder shall note that GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act &amp; Rules referred thereunder) wherein the 'Bill To' details shall encompass following.</p> <p>BHEL GSTN – Refer attached GSTN code table of BHEL.</p> <p>Name - BHARAT HEAVY ELECTRICALS LIMITED</p> <p>Address - Shall be intimated later.</p> <p>Specific details of BHEL GSTN, Name and Address as stated above, have been specified elsewhere in the tender.</p>
17.9	<p>Successful bidder to intimate immediately on the day of removal of goods (in case of any supply of goods) to BHEL along with all relevant details and send a scanned copy of Tax Invoice to BHEL through following communication mode for enabling BHEL to meet its GST related compliances.</p> <p>Portal address and Email address – Shall be intimated later.</p> <p>Specific details of above shall be intimated to successful bidder by BHEL at appropriate juncture.</p>
17.10	<p>In case of delay in submission of above mentioned documents on the date of dispatch, BHEL may incur penalty/ interest for not adhering to Invoicing Rules under GST Law.</p> <p>The same will be liable to be recovered from successful bidder, in case such delay is not attributable to BHEL.</p>
17.11	In case of raising any Supplementary Tax Invoice (Debit / Credit Note), successful bidder shall issue the same containing all the details as referred to in Section 34 read with Section 31 of GST Act & Rules referred there under.
17.12	<p>Successful bidder shall comply with the Time Limit prescribed under the GST Law and rules thereof for raising of the Tax Invoice.</p> <p>If any supply of goods is applicable, successful bidder shall also ensure prompt delivery of goods after dispatch.</p>
17.13	Bidder shall note that in case GST credit is delayed / denied to BHEL due to delayed / non receipt of goods and / or Tax Invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons, not attributable

	<p>to BHEL, GST amount shall be recoverable from successful bidder along with interest levied/ leviable on BHEL, as the case may be.</p>
17.14	<p>Successful bidder shall upload the invoices raised on BHEL in IFF/GSTR-1 within the prescribed time as given in the GST Act, and the same should be available to BHEL in FORM GSTR-2B electronically through the common portal; and confirmation of payment of such GST to the Government through filing of GSTR-3B of corresponding month/quarter.</p> <p>Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the successful bidder along with interest levied / leviable on BHEL.</p>
17.15	<p>Successful bidder to arrange for e-waybill for any movement of goods for the execution of the contract.</p> <p>Successful bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants &amp; machinery at site for execution of the works under this contract, Road Permit / Way Bill, if required, shall be arranged by successful bidder and BHEL will not supply any Road Permit/ Way Bill for this purpose.</p>
17.16	<p>Any new taxes &amp; duties, if imposed subsequent to due date of offer submission as per NIT &amp; TCN, by statutory authority during contract period (including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.</p>
17.17	<p>Benefits and / or abolition of all existing taxes must be passed on to BHEL against new taxes, if any, proposed to be introduced at a later date.</p>
<b>18.0</b>	<b>CONSTRUCTION WATER</b>
	<p>Contractor shall make all arrangements himself for the supply of construction water as well as potable water for labour and other personnel at the worksite/colony. However, drawl of construction/potable water from bore-well shall be permitted if found suitable. Any statutory clearance required shall be obtained by the contractor. Assistance, if required shall be provided by the owner.</p>
<b>19.0</b>	<p><b>INSPECTION AGENCY</b></p> <p>Inspection of packages shall be carried out by agency as per below Inspection category of packages:</p> <ol style="list-style-type: none"> <li>Cat-I: Inspection shall be done jointly or separately by NTPC and BHEL or BHEL's TPIA</li> <li>Cat-II: Inspection shall be done by BHEL only.</li> <li>Cat-III: Certificate of Compliance shall be furnished by Vendor.</li> </ol> <p>Note: Please note, for Cat I &amp; II items BHEL reserve the right to carry inspection by themselves or through nominated Third Party Inspection Agency (TPPA). For inspecting Agency for various items, vendor may refer to the Quality Plan. Third party inspection agency, if any, shall be informed after placement of Purchase Order.</p>
<b>20.0</b>	<b>INSPECTION PROCEDURE</b>
	<p><b>For Domestic supplies:</b></p> <p>Vendor shall raise inspection call at least 15 business days in advance on BHEL CQS website to applicable inspection agency (as mentioned in P.O/LOI or to be informed. later) and submit copy of inspection call to BHEL-PSER for arranging NTPC inspection/Joint inspection on the proposed date, as applicable. MDCC shall be issued on the basis of clear inspection report (CQIR).</p> <p><b>For Foreign supplies:</b></p>

	In case of Foreign supplies, if NTPC 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-PSER. The same shall be reviewed by PEM and then, sent to NTPC for clearance. The dispatch clearance (MDCC) by NTPC/ BHEL as applicable shall be given to the foreign supplier or representative in India after acceptance of above test certificates.
<b>21.0</b>	<b>MATERIAL DISPATCH CLEARANCE CERTIFICATE (MDCC) ISSUING AGENCY</b>  For Cat-I item, MDCC shall be issued by NTPC. vendor shall furnish all requisite documents like Material Test Certificates, Inspection Reports etc. required for obtaining of NTPC MDCC by BHEL. Copy of NTPC MDCC shall be attached with Invoice by Vendor for claiming payment from BHEL.  For Cat- II & Cat-III items, MDCC shall be issued by BHEL/NTPC, which shall be valid for the vendor payment. However, the vendor shall furnish all requisite documents like Material Test Certificates, Inspection Reports etc. required for obtaining of NTPC MDCC by BHEL.
<b>22.0</b>	<b>SUBMISSION OF FINAL DRGS/DOCS ALONG WITH MANUAL, TYPE TEST CERTIFICATES (IF ANY)</b>  As per GCC Rev. 07/ Technical Specification/Kick-off meeting
<b>23.0</b>	<b>PACKING, IDENTIFICATION &amp; MARKING</b>  Each box shall be marked with Capital Letters in "Red" indicating the (Main Supply/ Commissioning Spares/ Mandatory Spares) for NPGCL NABINAGAR FGD PACKAGE  <u>NOTE:</u> 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, 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.  <b>IMPORTANT: -</b> <ul style="list-style-type: none"><li>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</li><li>The Packing list details for the consignment must be put inside the Box/Boxes.</li></ul> Items like pumps 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 the 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 the description given in the packing slip) to facilitate their proper identification by PVNU NTPC. One Copy of Packing list must be put inside the Box along with Manufacturing drawing no. reference, Catalogue reference etc.
<b>24.0</b>	<b>TERMS OF PAYMENT</b>
24.1	Vendors shall submit documents for payment directly to BHEL. Payment will be

	<p>released within 60 days after receipt of complete documents as per order/ contract (45 days for vendors qualified and registered as Micro or Small as per MSMED Act). The applicable TDS under CGST/SGST/UGST/IGST/ Goods and Services (Compensation to States) Act will be deducted from the payments. Applicable GST shall be released to you upon compliance of following:</p> <ol style="list-style-type: none"> <li>You declaring such Invoice in your IFF/GSTR-1; and the same should be available to BHEL in FORM GSTR-2B electronically through the common portal.</li> <li>Receipt of Goods / services and Tax Invoice by BHEL.</li> <li>Confirmation of payment of GST thereon by you on GSTN Portal; and confirmation of payment of such GST to the Government through filing of GSTR-3B of corresponding month/quarter.</li> <li>Above is subject to receipt of goods / service and tax invoice thereof along with you declaring invoice in your return and paying GST within timeline prescribed for availing ITC by BHEL.</li> </ol> <p>Payment Break-up for Supply and E&amp;C portions are as per the followings:</p>
<b>24.2</b>	<b>SUPPLY PAYMENT</b>
24.2.1	Payment of basic price of materials supplied, as per approved billing schedule, along with freight, taxes and duties (as applicable), shall be paid against receipt of material at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro –rata basis as details below:
24.2.1.1	5% will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser. Collection of Material Receipt Certificate from site/owner and its submission for claiming the payment shall be the responsibility of the Seller/Contractor.
24.2.1.2	10% will be released after i) submission of all final documents as per Technical Specifications and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract
<b>25.3</b>	<b>ERCTION &amp; COMMISSIONING</b>
25.3.1	Eighty percent (80%) payment on prorate basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner.
25.3.2	Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package.
25.3.3	Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Owner, as applicable.
<b>26.0</b>	<b>PRICES</b>
	Firm till completion of Contract
<b>25.0</b>	<b>TERMS OF DELIVERY</b>
	FOR Dispatch Station for supply
<b>26.0</b>	<b>DELIVERY SCHEDULE</b>
	<p><b>Supply (along with commissioning spares-</b> 08 (Eight) months from the date of LOA/LOI.</p> <p>Drawing/ documents submission and re-submission shall be as per Technical Specification of projects.</p> <p><b>E&amp;C</b> - Within 04 (Four) months from the date of availability of front. Site front availability will be reckoned as the date when site informs vendor for mobilization of manpower &amp; resources.</p> <p><b>Mandatory Spares</b> -12 (Twelve) months from the date of LOA/LOI.</p>
<b>27.0</b>	<b>CONTRACT PERFORMANCE BANK GUARANTEE</b>
	Refer GCC Rev- 07 Clause No-11.0
<b>28.0</b>	<b>LIQUIDATED DAMAGE</b>

	<p>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 plus applicable GST of the total contract price per week or part thereof, subject to a maximum of ten (10) percent of the total contract price excluding elements of taxes, duties and freight, if the Seller/ Contractor fails to deliver any part of the ordered stores within the period stipulated in the Order/ Contract. Liquidated Damages shall be levied on the total contract value of both Supply and E&amp;C orders (excluding taxes, duties and freight) if E&amp;C completion of the package is delayed beyond the contractual completion date or extension thereof. Liquidated Damages will not be withheld from supply payment. LR/ GR/ RR/ eway bill date shall be treated as the date of dispatch for levying LD. However, if received LR/eway bill date is beyond three months from the date of LR/eway bill, such excess period shall also be considered for LD purpose. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s)</p>
<b>29.0</b>	<b>GUARANTEE TERMS</b>
	Clause No.12 except 12.2 (a) of GCC Rev 07.
<b>30.0</b>	<b>INTEGRITY PACT</b>
	Not - Applicable
<b>31.0</b>	<b>CONSTRUCTION POWER</b>
	To meet the construction power requirement of the FGD and associated systems, the Employer shall provide Two (2) Number 415V feeders in LT switchgears. The Contractor shall extend supply from these Construction power feeders to meet the construction power requirements at the various locations included in the Contractor's scope through suitably rated Isolation Transformers along with LT distribution boards as per requirement. The Contractor shall maintain a minimum drawl power factor as per DISCOM regulations for their substations, and all such devices for maintaining power factor shall be under the scope of contractor. All temporary wiring must comply with local regulations and will be subject to Employer's inspection and approval before connection to supply. Power supply shall not be provided for use in labour and staff colony. The charges only for the actual energy consumed by the Contractor shall be recovered by the Employer based on prevalent rate of DISCOM.
<b>32.0</b>	<b>LAND</b>
32.1	Availability of land within plant boundary is very limited and the contractor has to plan & use the existing land considering the use of land by other contractors and the storage of plant machineries and materials. The existing land shall be shared by all erections agencies. The same will be reviewed by BHEL and allotted to the extent available/ considered necessary free of cost. Contractor shall develop these areas for their site office, their own stores etc. Bidder must visit site to assess site condition, prior to quoting.
32.2	Levelled area for storage area for BHEL's material shall be provided as per availability free of cost.
32.3	Land for labour colony shall be arranged by successful bidder at their own. The contractor shall construct labour colony / hutment as per his requirements after obtaining approval of formalities from statutory body. Further, contractor must ensure minimum HSE norms and hygienic sanitary conditions in his labour colony.
32.4	The contractor will be responsible for handing back all lands, as handed over to him by BHEL/NTPC.
<b>33.0</b>	<b>ANY OTHER SPECIAL MAJOR CONDITION</b>
	<ol style="list-style-type: none"> <li>Contractor will comply with HSE (Health, Safety &amp; Environment) requirement of BHEL.</li> <li>GST shall be payable extra at actual as per the HSN code finalised for the items during detailed BBU.</li> <li><b>Additional Overhead Charges shall be 5% instead of 30% as mentioned in Clause No 26.2 of GCC Rev 07.</b></li> <li>Over all (%) quantity variation: The variation on overall package value due to changes in the scope shall be limited to +/-10% in place of 30%</li> </ol>

	<p>mentioned in clause no 6.0 of GCC-REV-07.</p> <p>e. Guaranteed power consumption (GPC): - In case Bidder's guaranteed power consumption (GPC) at motor input terminals (not shaft power) as demonstrated by the successful bidder during performance testing at works/ site is noted higher than 175 KW during inspection/ PG test, penalty @ US \$ 1538 /- per KW shall be levied on vendor.</p>
<b>34.0</b>	<b>OTHER TERMS</b>
34.1	Drawings issued, if any, are for tender purpose only. No additional financial implication will be entertained by BHEL at a later date on account any alteration to this, except otherwise specifically addressed in the tender.
34.2	Successful bidder shall provide temporary barricade all around the working area to avoid any untoward incident, as per guideline of customer.
34.3	Successful bidder shall strictly comply with the HSE guidelines of BHEL & customer and follow the security aspect of the project. Relevant document of the tender shall be referred in these regards.
34.4	Any other non-conformity noticed w.r.t. to customer's guidelines, but not listed in the tender, will also be fined. Decision of BHEL in this regard is final & binding on successful bidder. For this purpose, it is prudent that bidder visit site prior to offer submission and get acquainted with local environment, customer's guideline, etc. No claim successful bidder, whatsoever, at a later date will be entertained by BHEL. The amount will be deducted from bills of the successful bidder. The amount collected on the above will be utilized for giving award to the employees of various agencies working at site who could avoid accidents by following safety rules and for improving the safety at site. Such award will be decided by the committee consisting of employees of agencies working within the project and be awarded in presence of BHEL representative.
34.5	The successful bidder shall make arrangement at their own cost for necessary access to the work site from common access road.
34.6	The security and safety laws/ guidelines as applicable from time to time shall have to be strictly followed by the successful bidder. For this purpose, it is prudent that bidder visit site prior to offer submission and get acquainted with local environment, customer's guideline, etc. No claim successful bidder, whatsoever, at a later date will be entertained by BHEL.
34.7	For materials supplied by the successful bidder for the project, entry gate passes duly signed & stamped, as per guidelines of the project, to be submitted positively for record purpose.
34.8	The place of Jurisdiction shall be Courts at Kolkata. All the relevant tender clauses shall be read accordingly.

# GENERAL CONDITIONS OF CONTRACTS (GCC)

Rev No. 07

w.e.f 10.01.2020

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**BHARAT HEAVY ELECTRICALS LIMITED**

**PROJECT ENGINEERING MANAGEMENT**

PPEI BUILDING, HRDI & ESI COMPLEX

PLOT NO. 25, SECTOR – 16A

NOIDA – 201301 (U.P.), INDIA

Not for Publication

For Official Use

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b>  <b>Revision no. 07</b>	<b>DEFINITION OF TERMS</b>
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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** shall mean **M/s Bharat Heavy Electricals Limited** (A Govt. of India Undertaking) incorporated under the Companies Act 1956 acting through its **Project Engineering Management Division (PEM)**, PPEI Building, HRD & ESI Complex, Plot No. 25, Sector – 16A, NOIDA – 201 301 (UP) which expression shall include its successors and assigns. It may also be referred to as **BHEL**.
- 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 issued 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' works and after/ *during the erection/ commissioning* of equipment to establish its satisfactory operation as per specifications.

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b>  <b>Revision no. 07</b>	<b>DEFINITION OF TERMS</b>
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11	<b>Commissioning</b> shall mean successful/ satisfactory completion of Trial 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 commercial use. This will include all consumables and inputs required for pre-commissioning.	12	<b>Initial Operation or Trial Operation or Reliability Run</b> shall mean continuous integrated operation of the contracted/ ordered plant and materials under varying loads as proof of satisfactory operation for a specified period. The procedure to be agreed during detailed engineering.
13	<b>Inspection Agency (IA)</b> shall mean person(s) authorized by Purchaser / Owner to inspect the stores as per Order/ Contract at Vendor's/ Contractor's/ Sub-Contractor's works. Vendors to raise inspection call on BHEL – CQS website.	14	Month shall mean calendar month and week shall mean 7 days.
15	<b>Consignee</b> 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	<b>Plant/ Equipment/ Stores</b> shall mean the goods, machinery, components, parts, spares etc. required to be supplied by Seller/ Contractor as per Order/ Contract.
17	<b>Contract Engineer (CE)</b> shall mean the official who signs the Order/ Contract on behalf of Purchaser.	18	<b>Site Engineer</b> 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	<b>Site Inspection Agency</b> (Site IA) shall mean person(s) authorized by Purchaser/ Owner to inspect the stores/ works included in Order/ Contract at the Project Site.	20	<b>Performance Guarantee Test:</b> 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.
21	<b>Technical Specification / Specification</b> 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	<b>GENERAL</b> - 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.		

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b>  <b>Revision no. 07</b>	<b>ABBREVIATIONS</b>
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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	Letter of Award
LR	Lorry Receipt
MCE	Marine cum Erection

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b> Revision no. 07	<b>ABBREVIATIONS</b>
	<p>MDCC Material Dispatch Clearance Certificate</p> <p>MRC Material Receipt Certificate</p> <p>MSMED Micro Small and Medium Enterprises Development</p> <p>NCR National Capital Region</p> <p>NIT Notice Inviting Tender</p> <p>NND Non Negotiable Document</p> <p>OBL Ocean Bill of Lading</p> <p>O&amp;M Operation &amp; Maintenance</p> <p>ORC Over run charges</p> <p>PBG Performance Bank Guarantee</p> <p>PEM Project Engineering Management</p> <p>P&amp;ID Process &amp; Instrumentation Diagram</p> <p>PO Purchase Order</p> <p>PQR Pre-Qualification Requirement</p> <p>PTL Part Truck Load</p> <p>PVC Price Variation Clause</p> <p>QA Quality Assurance</p> <p>QS Quality Surveillance</p> <p>RA Reverse Auction</p> <p>RBI Reserve Bank of India</p> <p>RFQ Request for Quotation</p> <p>RR Railway Receipt</p> <p>SBI State Bank of India</p> <p>SCC Special Conditions of Contract</p> <p>SCE Storage cum Erection</p> <p>T&amp;P Tools &amp; Plants</p> <p>TReDS Trade Receivables Discounting System</p>		

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b> Revision no. 07	<b>INSTRUCTIONS TO BIDDERS</b>
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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

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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. Corrigenda to NIT, with those of later date having precedence over those of earlier date
- vi. Enquiry letter and annexures except documents listed in point no (vii) to (ix) below
- vii. Technical specifications
- viii. Special Conditions of Contract (SCC)
- ix. 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.

## 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

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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.

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.

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2.7.1.2 For uploading Bids, bidders have to use their organization's authorized Digital signature (DSC class-III/ applicable class for bidding) registered with PEM. In case the same is not registered with PEM or not available with the bidder then such bidders have to purchase the same and get it registered with PEM as the same is required to upload the bid on BHEL E-bid portal.

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.

**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 addressed to BHEL officials by name & designation as given in NIT and sent to the following address:

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

Attention:      1) Mr.  
 2) Mr.

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.

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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**

**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.

### 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 in currency of the country of origin and on C&F basis.
- 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**

- 6.1 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.
- 6.2 If bidder insists for price variation clause (PVC) where NIT specifies firm price, the offer should contain:
  - i. PVC Formula
  - ii. Ceiling for PVC
  - iii. Base date and applicable indices for the base date.

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Open ended PVC formula is not acceptable. Indices shall be based on Government of India/ RBI publications/ IEEMA/LME etc. However, BHEL reserves the right to accept/ reject the offer with PVC.

#### 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 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.

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<p>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.</p> <p>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.</p> <p>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.</p>						
10.0	<b><u>TENDERER TO INFORM HIMSELF FULLY</u></b>					
10.1	<p>Tenderer shall closely peruse all clauses, specifications &amp; 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.</p>					
10.2	<p>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 labour 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.</p>					
10.3	<p>It is the responsibility of tenderer to keep himself informed about all taxes &amp; 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.</p>					
11.0	<b><u>ETHICS IN BUSINESS DEALINGS/ SUSPENSION OF BUSINESS DEALINGS</u></b>					
<p>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 <a href="http://www.bhel.com/www.bhelpem.com">www.bhel.com/www.bhelpem.com</a>. Bidders should get themselves acquainted with these guidelines.</p>						
12.0	<b><u>INTEGRITY PACT (IP)</u></b>					
<p>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.</p>						
<p>Integrity Pact (IP) will be applicable for all tenders/ contracts valuing more than a specific value as specified in NIT/ RFQ.</p>						

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The IP as enclosed as per annexure-VIII 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.

##### 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 intents 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](http://www.bhel.com) and/or under applicable legal provisions.

#### 13.0 REVERSE AUCTION

- i. BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to

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give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.			
ii. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/contractors (as available on <a href="http://www.bhel.com">www.bhel.com</a> ).			
iii. The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.			
iv. If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/contractors (as available on <a href="http://www.bhel.com">www.bhel.com</a> ).			
v. <i>In cases of failure of RA, sealed envelope price bids (of item(s) for which RA has failed) of all the techno-commercially qualified bidders shall be opened and the tender shall be processed accordingly. However, the envelope sealed bid(s) of techno-commercially acceptable bidder(s) who had agreed to participate in the RA and had failed to submit the online sealed bid shall not be opened.</i>			
Detailed terms and conditions for RA are available on <a href="http://www.bhel.com">www.bhel.com</a> . Business Rules for RA shall be sent to the bidders before conducting RA.			
<b>14.0 <u>REJECTION OF TENDER AND OTHER CONDITIONS</u></b>			
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:			
i. To reject any or all the tenders.			
ii. To increase or decrease the quantities.			
iii. To reject any commercial or technical deviation given in offer.			
iv. To split the work amongst two or more bidders.			
v. 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.			
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			

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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.in](http://www.bhel.in))

#### **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.in](http://www.bhel.in)

#### **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 WITHDRAWL NOT GIVEN)**

For deviations w.r.t. Payment terms, Liquidated damages, PVC against Firm prices, 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.

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.

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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](http://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:

- Insurance for evaluation purposes shall be @ 0.1 % of quoted C&F price.
- Port handling/clearing charges @1% of C&F value
- Custom duty with applicable cess as per special conditions of contract-as prevailing on date of price bid opening.
- 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.bhelpem.com](http://www.bhelpem.com) , [www.bhel.com](http://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 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.

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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](http://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.bhelperm.com](http://www.bhelperm.com) & [www.bhel.com](http://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.

#### **26.0 MAKE IN INDIA**

For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017, 28.05.2018 & 29.05.2019 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 /

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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 RXIL (TReDS) PLATFORM**

PEM is registered with RXIL (TreDS) platform. MSME Bidders are requested to get registered with RXIL (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](http://www.bhel.com)) shall apply in all such cases.
- 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

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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](http://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 lower of 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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## **GENERAL COMMERCIAL TERMS & CONDITIONS**

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

Issuance of Purchase order by the Purchaser shall result in a binding contract between the Seller/ Contractor and Buyer. Seller/Contractor shall acknowledge the LOA/ Purchase Order issued by BHEL (Purchaser) within 7 days of its receipt. Seller/ Contractor should examine the 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, *LOA/ Purchase order issued shall be deemed as having no discrepancy/ errors. In case of any clerical error in the 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 firm / with PVC (wherever applicable) for the entire scope of work in line with the tender documents and subsequent clarifications/ confirmations till completion of contract.

#### **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 GST is quoted as per the existing tariff on the date of the offer and all benefits as per existing laws have been considered.
- 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 The purchaser is registered in the State of Uttar Pradesh vide GST registration number: **09AAACB4146P2ZC. The purchaser is also registered in other states and state wise GST reg. code of BHEL units as per annexure no XI.**
- 4.1.4 Seller/contractor is required to mention **the GST registrations number as: 09AAACB4146P2ZC in their tax invoice unless stated otherwise in NIT/SCC.**
- 4.1.5 In general, GST shall be paid at actuals against Tax Invoice but restricted to the amount and percentage in the order/contract. **However, BHEL will reimburse the actual applicable tax even if the same is higher than the amount quoted by the bidder and considered in the order/contract in case BHEL is able to take the input tax credit. The decision of BHEL in this regard will be final and binding on the seller/contractor.**

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#### 4.2 OTHER TAXES & LEVIES

All taxes/ duties/ Cess 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.

#### 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.**

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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:

- 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 remain Firm (or with PVC as specified in NIT) for any increase or decrease in the Order/ Contract value (Ex-works) up to plus or minus 30% (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. For supply packages, quantities (within PO/missible quantity contract price variation) shall be released within **three** years from the date of purchase order/ LOA, unless mentioned otherwise in NIT/SCC specifically.

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## 7.0 ENGINEERING DOCUMENTS SUBMISSION

All engineering document submission by vendors after award of contract shall be online, using BHEL-PEM's Document Management System (DMS). Comments would also be conveyed to vendors 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.bhelpem.com/Bhel\\_vendor\\_section.aspx](https://www.bhelpem.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.bhelpem.com/> should not be blocked
- iv. Vendor's internal proxy setting should not block DMS application's link <https://www.bhelpem.com/wrenchweb>

Procedure for uploading comments, viewing comments etc. is available at [https://www.bhelpem.com/Dms\\_Manuals.html](https://www.bhelpem.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 SUPPLY PACKAGES

#### 9.1.1 INDIAN VENDORS

Payment of basic price of supplied materials (as per PO/ approved billing schedule) along with freight and taxes and duties (as applicable), shall be paid against receipt of material (received LR) at site on pro-rata basis. 10% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as below:

On receipt of Material Receipt Certificate (MRC) from project site engineer of owner/purchaser and on submission of certificate of submission of all the final documents for the package (as per Annexure IX(A)), duly certified by Engineering Department of Purchaser.

#### 9.1.2 FOREIGN VENDORS

Payment of C&F price of materials supplied (as per PO/ approved billing schedule), shall be paid against Bill of lading/ AWB on pro-rata basis. 10% of C&F price of materials supplied will be retained as security deposit, which will be released on pro – rata basis as below:

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Ten percent (10% of C&F price of material supplied) will be released on pro-rata basis after receipt of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser and on submission of certificate of submission of all the final documents for the package (as per Annexure IX(A)), duly certified by Engineering Department of Purchaser.

**9.2 SUPPLY PACKAGES WITH PERFORMANCE GUARANTEE/ DEMONSTRATION TEST AT SITE IN VENDOR'S SCOPE**

**9.2.1 INDIAN VENDORS**

Payment of basic price of materials supplied, as per PO/ approved billing schedule, along with freight, taxes and duties (as applicable), shall be paid against receipt of material (received LR) at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as below

- i. 10% will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser.
- ii. 5% shall be released after i) submission of certificate of submission of all the final documents for the package (as per Annexure IX(A)), duly certified by Engineering Department of Purchaser and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package to Customer/BHEL, if applicable, as per Order/ Contract.

Note: If the Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract is not conducted up to 36 months from supply completion for reasons not attributable to the vendor, then last 5% security deposit will be released on submission of certificate of all final documents for the package (as per Annexure IX(A)), duly certified by Engineering Department of Purchaser. However, PBG for contract shall be released only after completion of contractual obligations.

List of packages with required final documents is as per Annexure-IX (A).

**9.2.2 FOREIGN VENDORS**

Payment of C&F price of materials supplied, as per PO/ approved billing schedule, shall be paid against Bill of lading/ AWB on pro-rata basis. 15 % of C&F price of materials supplied will be retained as security deposit, which will be released on pro – rata basis, as detailed below:

- i. Ten percent (10%) of C&F price of material supplied shall be released after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser.
- ii. Five percent (5% of C&F price of material supplied) shall be released after i) submission of certificate of submission of all the final documents for the package) duly certified by Engineering Department of Purchaser and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package to Customer/BHEL, if applicable, as per Order/ Contract.

Note: If the Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package, if applicable, as per Order/ Contract is not conducted up to 36 months from supply completion for reasons not attributable to the vendor, then last 5% security deposit will be released on submission of certificate of all final documents for the package (as per Annexure IX (A)), duly certified by

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Engineering Department of Purchaser. However, PBG for contract shall be released only after completion of contractual obligations.

#### 9.3 **SUPPLY PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR SCOPE)**

##### 9.3.1 **INDIAN VENDORS**

Payment of basic price of materials supplied, as per PO/ approved billing schedule, along with freight, taxes and duties (as applicable), shall be paid against receipt of material (received LR) at site on pro-rata basis. 15% of basic price of materials supplied will be retained as security deposit which will be released on pro – rata basis as details below

- i. Five percent (5% 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 Owner/ Purchaser.
- ii. Ten percent (10% of basic price of materials supplied) shall be released after i) submission of certificate of submission of all the final documents for the package (as per Annexure IX & IX(A)), duly certified by Engineering Department of Purchaser and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package to Customer/BHEL, if applicable, as per Order/ Contract.

##### 9.3.2 **FOREIGN VENDORS**

Payment of C&F price of materials supplied, as per approved billing schedule, shall be paid against Bill of lading/ AWB on pro-rata basis. 15 % of C&F price of materials supplied will be retained as security deposit, which will be released on pro – rata basis, as below

- i. Five percent (5% of C&F price of material supplied) shall be released after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser or Physical Verification Report (PVR) issued by site, in case of free supply to customer.
- ii. Ten percent (10% of C&F price of material supplied) shall be released after i) submission of certificate of submission of all the final documents for the package (as per Annexure IX & IX(A)), duly certified by Engineering Department of Purchaser and ii) successful completion of Performance Guarantee (PG)/ Demonstration Test and handing over of the system/ package to Customer/BHEL, if applicable, as per Order/ Contract.

#### 9.4 **ERCTION & COMMISSIONING PAYMENT FOR TURNKEY PACKAGES (E&C IN VENDOR SCOPE)**

9.4.1 Eighty percent (80%) payment on pro-rata basis for the work completed, as per approved billing schedule, shall be released by Site authorities/ Region on submission of protocols, duly signed by BHEL Site/ Owner.

9.4.2 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful commissioning of the complete system/ package.

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9.4.3 Ten percent (10%) of the total value shall be released by Site authorities/ Region on successful completion of PG/ Demonstration test(s) and handing over system/ package to the Customer/BHEL, as applicable.

**Note: (for clause 9.3 & 9.4)** If the Performance Guarantee/ Demonstration Test and Handing over system/package to the customer/BHEL, as applicable, is not conducted up to 24 months from E&C completion for reasons not attributable to the vendor, then last 10% payment under clause 9.3.1.-ii, 9.3.2.-ii & 9.4.3 will be released against Bank Guarantee of an equivalent amount, valid for 12 months, provided other conditions of clause 9.3.1 (ii), 9.3.2 (ii) & 9.4.3 are complied with. This bank guarantee will be in addition to Contract Performance Bank Guarantee for 5% of the contract value (excluding taxes, duties and freight).

9.5 **PAYMENT OF SERVICE(S) CHARGES: DEMONSTRATION CHARGES, PG TEST, INSTALLATION CHECK, SUPERVISION OF ERECTION / COMMISSIONING CHARGES, ENGINEERING CHARGES, O&M, STUDY, CALIBRATION CHARGES, TYPE TEST, AMC, etc.**

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 and AMC on quarterly basis after completion of each activity or as specified in NIT, on Site certification/ certification by engineering as applicable.

Note – For Turnkey Packages (E&C in vendor scope), wherein if Engineering Charges is identified as separate line item in NIT BOQ, same shall not be more than 2% of Total Contract Value (including Main

Supply, E&C, Mandatory Spares, etc.) excluding freight & GST, failing which the break-up of prices shall be adjusted accordingly for ordering.

9.6 **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 9.7.2 – 9.7.5 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. Payment terms for mandatory spares shall be as per clause 9.1.
- iii. Any negative PVC, if not adjusted in earlier payments, will be adjusted at the time of MRC payment.
- iv. 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, 9.2.2 and 9.3.2.

9.7 **DOCUMENTS TO BE SUBMITTED BY VENDOR**

9.7.1 **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

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- 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

**9.7.2 A) FOR CLAIMING PAYMENTS (UNDER CLAUSE 9.1.1, 9.2.1, 9.3.1) (Original + 1 copy)**

- i. GST compliant invoice
- ii. PVC Calculation and copy of all applicable indices, if PVC applicable.
- iii. Receipted LR (signed & stamped)
- 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, 9.3.2) (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

**9.7.3 FOR CLAIMING MRC PAYMENT**

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

**9.7.4 FOR CLAIMING PAYMENT FOR SERVICES (9.4 & 9.5)**

- i. GST compliant invoice
- ii. Respective documents as specified in clause 9.4 & 9.5.

**9.8 LOADING DETAILS IN CASE OF DEVIATIONS**

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

**9.9 BHEL'S BANKERS**

Please refer "Information Section" of PEM website [www.bhelpem.com](http://www.bhelpem.com) for details.

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**9.10 MODE OF PAYMENT/ NON PAYMENT OF INTEREST**

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.

9.11 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, BGs against the same contract,
- ii. Dues payable to Seller against other contracts in the same Region/Unit/Division of BHEL.
- iii. Dues payable to Seller against other contracts 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**

11.1 No Bank Guarantee is required where Order/ PO values (cumulative value of contract – main supply, services, mandatory spares, etc.) is less than Rs. 25 Lakhs (excluding taxes, duties and freight).

11.2 For Order/ PO values (cumulative value of contract – main supply, services, mandatory spares, etc.) equal to or above Rs. 25 Lakhs (excluding taxes, duties and freight), the vendor shall submit Contract Performance Bank Guarantee (as per Annexure-III) for 5% of Order/ Contract value (excluding taxes, duties & freight) before first submission of documents for payment to cover the due performance of Order/ Contract and to fulfill the guarantee conditions stipulated in the Order/ Contract.

Note:

1. In case of package consisting of main supply, services, spares etc., BG for cumulative value of contract (i.e. main supply, services, spares etc.) shall be applicable irrespective of separate POs and validity of BG shall be till completion of all contractual liability or guarantee period whichever is later.
2. BG value can be proportionately reduced after completion of Guarantee Period Unit-wise/ Lot-wise/ Stage-wise/Set-wise, subject to the units/lots/sets/stages being explicitly specified in delivery terms in the contract. However, BG for the last unit/set/lot/stage will be released only after completion of all contractual liability or guarantee period whichever is later.

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11.3 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.

11.4 Validity of the Bank Guarantee shall be for the entire Guarantee period. Initially, it should be at least 18 months, later extended to cover the entire guarantee period, one months before its expiry.

11.5 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.

11.6 Equivalent amount shall be recovered from payment due to the Seller/ Contractor, before releasing any payment, in absence of a valid bank guarantee.

11.7 Bank Guarantees shall be from Consortium Bank as per list and directives on [www.bhlpem.com](http://www.bhlpem.com).

11.8 The expiry of claim period should be kept min. of three months after BG validity.

11.9 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 Delhi-NCR.

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.

12.2 a) Guarantee period (Unit-wise/Lot-wise/Stage-wise/Set-wise, as applicable) for supply package shall be eighteen (18) months from the date of last dispatch or as per SCC whichever later.

b) Guarantee period for **Turnkey** packages (E&C in vendor scope), including 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 to customer or completion of O&M period Unit wise/Lot-wise/Stage-wise/Set-wise/ system wise (as 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.

Note for 12.2 (a) & (b) – Unit-wise, Lot-wise, Stage-wise, Set-wise, System-wise will be applicable if units/ lots/ sets/ stages/ system being explicitly specified in delivery terms in the contract

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12.3 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.

12.4 All the replaced and replenished plant/ equipment/ stores shall also be guaranteed as per above clauses.

12.5 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.

**13.0 DELIVERY / COMPLETION SCHEDULE**

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 for indigenous supplies and C&F for foreign supplies.

**14.0 INSPECTION AND TESTING AT CONTRACTOR'S PREMISES**

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.

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/

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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 EQUIPMENTS**

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:

- Measurement uncertainty is known and consistent with required measurement capability of the IMTE.
- Selection of IMTEs is compatible with the necessary accuracy and precision of required measurement.
- IMTEs are calibrated at the required intervals against certified equipment having known valid relationship to nationally recognized standards, at recognized calibration labs.
- Calibration records are available and traceable to the particular IMTE.
- 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.
- 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.

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**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) 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 main supply contract price excluding GST per week or part thereof, subject to a maximum of ten (10) percent of the total main supply contract price excluding GST, if the Seller/ Contractor fails to deliver any part of the ordered goods/stores within the period stipulated in the Order/ Contract.

b) LD on service portion (demonstration charges, PG test, installation check, supervision of erection / commissioning charges, engineering charges, O&M, study, calibration charges, type test, 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. However, total LD (main supply and services) shall be limiting to 10% of cumulative total contract value (main supply +services) excluding GST.

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c) 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.

d) **For Turnkey packages (Supply and E&C in vendor scope)-** 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 withheld from supply payment for delay in supply. LD on Mandatory spares shall be dealt as per clause (c) above. LD on service portion (PG test, engineering charges, 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.

NOTE:

- i. 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 received 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.
- ii. In case of any amendment/ revision, LD shall be linked to the amended/ revised contract value and delivery date(s).
- iii. 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.
- iv. 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.

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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.

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 BHEL shall arrange transit insurance policy or comprehensive MCE (marine cum erection) Insurance Policy for total project supply & services including balance of plant package 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 including theft, sabotage, fire, lightning and other natural calamities

17.2 Vendors shall inform to underwriter appointed/ nominated by BHEL/ Purchaser, through email/fax, the details of dispatches under intimation to BHEL such as LR No. and date, Truck No., P.O. No., project and value.

17.3 Insurance as applicable for field work such as third party liability, workmen compensation, Seller/ Contractor's own Tools & Plants and automobile shall be arranged by the Seller/ Contractor.

17.4 In case the damage / loss / theft of materials are attributable to negligence / failure in discharging the duties and obligations of the contractor, 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 contractor.

17.5 If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

#### 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.

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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.**

#### 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 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, wherever E&C is in the scope of Seller/ Contractor. For Supply packages, Material Receipt Certificate shall be arranged by BHEL. Vendor to provide copy of received LRs to enable BHEL to obtain MRC from site.

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#### **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 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**

##### **24.1 FOR SUPPLY PACKAGES**

- Shortage in sound cases shall be replenished free of cost by the vendor, as early as possible.
- For shortages/damages during transit/handling at site, vendor shall supply replacements, as early as possible, at the old contractual rates upon intimation to vendor within 3 months of received LR.

##### **24.2 FOR TURNKEY PACKAGES**

Any shortages or damages during unloading 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

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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 & LICENCES

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, transferable, 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 supplies, or if there be defective supplies or non-fulfilment of any other terms and conditions of the Contract as enumerated subsequently in this 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.

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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.

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 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.

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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.

**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.

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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 Not-withstanding 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 Seller'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.

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.

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- ii. 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.
- iii. 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 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

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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.bhelperm.com](http://www.bhelperm.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 ORDER OF PRECEDENCE**

The order of precedence shall be same as mentioned in clause no 1.6 of "Instruction to Bidders", GCC Rev 07.

**37.0 SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM (FOR SUPPLY PACKAGES)**

Seller/ Contractor's performance will be evaluated as per Supplier Performance Monitoring and Rating System of BHEL. Please refer BHEL website [www.bhel.com](http://www.bhel.com) for details.

**37.1 SUPPLIER PERFORMANCE MONITORING AND RATING SYSTEM (FOR TURNKEY PACKAGES)**

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. The Contractor shall submit periodical progress reports monthly/ Quarterly and other reports/information including manpower, consumables, T&P mobilization etc. as desired by BHEL. These progress reports shall also form basis for preparing time extension proposal.

37.1.2 Monthly/ Quarterly progress review between BHEL and Contractor shall be based on the agreed programme as above, availability of inputs/fronts etc., and constraints if any, as per prescribed formats. Manpower, T&P and consumable reports as per prescribed formats as handed over by regions during

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execution shall be submitted by contractor every month/ Quarter Release of RA Bills shall be contingent upon certification by BHEL Site Engineer of the availability of the above prescribed formats duly filled in and signed.

37.1.3 The burden of proof that the causes leading to any shortfall is not due to any reasons attributable to the contractor is on the contractor himself. The monthly/ Quarterly progress review shall record shortfalls attributable to (i) Contractor, (ii) Force Majeure Conditions, and (iii) BHEL

37.1.4 Online performance monitoring system is in place for vendors which 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 its 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 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

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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.

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

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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**

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

- 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 (FOR TURNKEY PACKAGES)**

- 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/services 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 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 programme shall be drawn for the balance amount of work to be completed during the period of 'Time Extension'. Review of the programme and record of shortfall shall be done as per clause no 37.1.

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<b>ANNEXURE No.</b>	<b>DESCRIPTION</b>
I	OFFER SUBMISSION AS PER NIT
II	DEVIATION SHEET (COST OF WITHDRAWL)
III	BANK GUARANTEE FOR PERFORMANCE SECURITY
IV	NON-CONFORMANCE REQUEST (NCR)
V	RISK AND COST PURCHASE
VI	NEFT DETAILS
VII	LOADING CRITERIA
VIII	INTEGRITY PACT
IX	LIST OF TURNKEY PACKAGES WITH REQUIRED FINAL DOCUMENTS
IX (A)	LIST OF SUPPLY PACKAGES WITH REQUIRED FINAL DOCUMENTS
X	BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS
XI	STATE WISE GST REGISTRATION CODE OF BHEL

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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,

- 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.
- 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.
- 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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<b>ANNEXURE-II: DEVIATION SHEET (COST OF WITHDRAWAL)</b>									
<b>PROJECT:-</b> <b>PACKAGE:-</b> <b>TENDER ENQUIRY REFERENCE:-</b>									
<b>NAME OF VENDOR:-</b>									
<b>TECHNICAL DEVIATIONS</b>									
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
<b>COMMERCIAL DEVIATIONS</b>									
<b>PARTICULARS OF BIDDERS' AUTHORISED REPRESENTATIVE</b>									
NAME	DESIGNATIONS			SIGN & DATE					
<b>NOTES:-</b>									
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) hidden in offer, will not be taken cognizance of. 4. Bidder shall submit duly/filled up/redd 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 un-priced copy of this format submitted with Part-I bid but not mentioned in priced copy of this format submitted with Part-I 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 un-priced copy of this format. 10. All techno-commercial terms and conditions of NIT shall be deemed to have been accepted by the bidder, other than those listed in un-priced 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 ordering.									

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**ANNEXURE-III****BANK GUARANTEE FOR PERFORMANCE SECURITY**

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 at .....1 through its Unit at..... (name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) having its registered office at .....2 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.....dated .....3 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 the .....8 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 exceed .....6
- b. This Guarantee shall be valid up to .....7
- 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 1 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 EXTENTION 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 <input type="checkbox"/> CE <input type="checkbox"/> IA TO  <input type="checkbox"/> 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	<input type="checkbox"/> Returned to Vendor	
	<input type="checkbox"/> Forwarded to CE (PEM) (2 Copies)	
NAME	SIGNATURE	DATE

**PART-III (TO BE FILLED IN BY PROJECT ENGINEER (PEM))**

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	<input type="checkbox"/> Returned to Vendor (in case NCR not approved)	
	<input type="checkbox"/> 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:	<input type="checkbox"/> VENDOR		
(1COPY EACH)	<input type="checkbox"/> SITE IA		
	<input type="checkbox"/> IA		
	<input type="checkbox"/> 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:

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 in the same Region/Unit/ Division of BHEL.
- c) Dues payable to seller against other contracts 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).

#### **D) PRICE VARIATION CLAUSE (PVC)**

PVC instead of firm price – Maximum ceiling of PVC as demanded by the vendor

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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 IX (A)****LIST OF SUPPLY PACKAGES WITH REQUIRED PG TEST & FINAL DOCUMENTS**

SL NO	PACKAGE NAME	FINAL DOCUMENTS LIST				FOR INFORMATION OF BIDDERS		
		AS-BUILT DRAWIN GS (Y/N)	O&M MANU AL	FINAL DRAWIN GS	INSPECTION DOCUMENTS	PG TESTING REQUIRED AS PER CUSTOMER CONTRACT (Y/N)	DEMO REQUIRED AS PER CUSTOMER CONTRACT (Y/N)	HANDING OVER [BY VENDOR TO OWNER] (Y/N)
1	ABOVE GROUND EARTHING MATERIALS	N	N	Y	Y	N	N	N
2	AIR RELEASE VALVES	N	Y	Y	Y	N	N	N
3	AIR TRAPS	N	Y	Y	Y	N	N	N
4	ALUMINIUM SHEETS/COILS	N	N	N	Y	N	N	N
5	ANUBAR ( DELTA TUBE)	N	Y	Y	Y	N	N	N
6	AUX PRDS	N	Y	Y	Y	N	N	N
7	BALL VALVES	N	Y	Y	Y	N	N	N
8	BARE GROUND CONDUCTOR FOR ABOVE GRD EART	N	N	Y	Y	N	N	N
9	BARE GROUND CONDUCTOR FOR BELOW GRD EART	N	N	Y	Y	N	N	N
10	BRANCH PIPE FOR FLOW ELEMENT	N	N	N	N	N	N	N
11	BUTTERFLY VALVES(STEAM SERVICE)	N	Y	Y	Y	N	N	N
12	BUTTERFLY VALVES(WATER SYSTEMS)	N	Y	Y	Y	N	N	N
13	C&I LAB ITEMS	N	Y	Y	Y	N	N	N
14	CABLE TERM.& JOINT KITS	N	N	Y	Y	N	N	N
15	CABLE TRAY SUPPORT SYSTEM -BOLTABLE	N	N	Y	Y	N	N	N
16	CABLE TRAY SUPPORT SYSTEM-WELDED(GALV)	N	N	Y	Y	N	N	N
17	CABLE TRAYS & ACC.	N	N	Y	Y	N	N	N
18	CAST IRON GATE/GLV/NRV/SRV	N	Y	Y	Y	N	N	N
19	CATHODIC PROTECTION**	Y	Y	Y	Y	Y	N	Y
20	CHAIN PULLEY BLOCK	N	Y	Y	Y	N	N	N
21	CHEMICAL DOSING SYSTEM	N	Y	Y	Y	N	N	N
22	COAL FLOW-ABILITY STUDY	N	N	Y	N	N	N	N
23	COLTCS	N	Y	Y	Y	Y*	Y	N
24	CONDENSATE FLOW MODEL STUDY	N	N	Y	Y	N	N	N
25	CONICAL STRAINERS	N	Y	Y	Y	N	N	N
26	CONTROL VALVE	N	Y	Y	Y	N	N	N
27	DC BATTERY CHARGER	N	Y	Y	Y	N	N	N

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28	DC LEAD ACID / NI-CD BATTERIES	N	Y	Y	Y	N	N	N
29	DC LEAD ACID BATTERIES	N	Y	Y	Y	N	N	N
30	DC NI CD BATTERIES	N	Y	Y	Y	N	N	N
31	DEBRIS FILTER	N	Y	Y	Y	Y*	Y	N
32	DISTRIBUTION BOARDS	N	N	Y	Y	N	N	N
33	DUPLEX STRAINER	N	Y	Y	Y	N	N	N
34	ELECTRIC HOIST	N	Y	Y	Y	N	N	N
35	ELECTRIC LAB EQUIPMENT	N	Y	Y	Y	N	Y	N
36	ELECTRICAL LAB (METERING & TESTING)	N	N	Y	Y	N	Y	N
37	ELECTRICAL LAB- CALIBRATION & DIAGNOSTICS	N	N	Y	Y	N	Y	N
38	ELECTROMAGNETIC FLOW METER	N	Y	Y	Y	N	N	N
39	EPR INSULATED FIRE SURVIVAL CABLE	N	N	Y	Y	N	N	N
40	EXOTHERMIC WELDING MATERIAL	N	Y	Y	Y	N	N	N
41	FIRE SEALING SYSTEM**	N	N	Y	Y	N	N	Y
42	FIRE TENDERS	N	Y	Y	Y	N	Y	N
43	FLOW ELEMENT – NOZZLE	N	Y	Y	Y	N	N	N
44	FLOW ELEMENT – ORIFICE	N	Y	Y	Y	N	N	N
45	FORK LIFT TRUCK	N	Y	Y	Y	N	N	N
46	FQA LAB-CIVIL	N	Y	N	Y	N	N	N
47	FQA LAB-ELECTRICAL							
48	FQA LAB-MECHANICAL	N	Y	Y	Y	N	N	N
49	FRP CABLE TRAYS & ACCESSORIES	N	N	Y	Y	N	N	N
50	GENERATOR CIRCUIT BREAKER	N	Y	Y	Y	N	N	N
51	GRP PIPING**	N	N	Y	Y	N	N	N
52	GUN METAL VALVES	N	Y	Y	Y	N	N	N
53	HDPE PIPING & FITTINGS	N	N	Y	Y	N	N	N
54	HEAT EXCHANGERS(PLATE TYPE)	N	Y	Y	Y	Y*	N	N
55	HT XLPE CABLES	N	N	Y	Y	N	N	N
56	HYDRAULIC MOBILE CRANE	N	Y	Y	Y	N	N	N
57	LIGHTING FIXTURES,LAMPS & MISC. ITEMS	Y	Y	Y	Y	N	N	N
58	LT HRPVC CONTROL CABLES	N	N	Y	Y	N	N	N
59	LT HRPVC POWER CABLES	N	N	Y	Y	N	N	N
60	LT PVC CONTROL CABLE	N	N	Y	Y	N	N	N
61	LT PVC POWER CABLE	N	N	Y	Y	N	N	N
62	LT XLPE FIRE SURVIVAL CABLES	N	N	Y	Y	N	N	N
63	LT XLPE POWER CABLE	N	N	Y	Y	N	N	N
64	LUBE OIL TRANSFER PUMPS	N	Y	Y	Y	N	N	N
65	M.E. BELLows	N	Y	Y	Y	N	N	N
66	MISC. PUMPS(HORZ.) TYPE-I (FLOW<300 CMH)	N	Y	Y	Y	Y*	N	N

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67	MISC. PUMPS(HORZ.) TYPE-II(FLOW>300 CMH)	N	Y	Y	Y	Y*	N	N
68	MISC. PUMPS(VERT.) TYPE-II(FLOW>1000 CMH)	N	Y	Y	Y	Y*	N	N
69	MISC. PUMPS(VERT.) TYPE-I(FLOW<1000 CMH)	N	Y	Y	Y	Y*	N	N
70	MISC.CABLING ERECTION ITEMS	N	N	Y	Y	N	N	N
71	MISC.PUMPS (HORIZONTAL)	N	Y	Y	Y	Y*	N	N
72	MOBILE PICK UP & CARRY CRANE	N	Y	Y	Y	N	N	N
73	MOTOR BOAT	N	Y	Y	Y	N	N	N
74	MS ROD FOR BELOW GROUND EARTHING	N	N	N	Y	N	N	N
75	NDCT DESIGN CONSULTANCY	Y	Y	Y	N	Y*	N	N
76	NEUTRAL GROUNDING RESISTOR	N	Y	Y	Y	N	N	N
77	OIL FILLED SERVICE TRANSFORMER	N	Y	Y	Y	N	N	N
78	OXYGEN DOSING SYSTEM	N	Y	Y	Y	N	N	N
79	PA SYSTEM**	Y	Y	Y	Y	Y	N	Y
80	POLES & MAST	N	N	Y	Y	N	N	N
81	PROOF CHECKING OF CIVIL AND STRUCTURAL D	N	N	Y	N	N	N	N
82	PVC WIRES	N	N	Y	Y	N	N	N
83	RIGID STEEL CONDUITS	N	N	Y	Y	N	N	N
84	ROTAMETER	N	Y	Y	Y	N	N	N
85	SCREENED CONTROL CABLES	N	N	Y	Y	N	N	N
86	SELF CLEANING STRAINERS	N	Y	Y	Y	Y*	Y	N
87	SIGHT FLOW INDICATORS	N	Y	Y	Y	N	N	N
88	SIMPLEX STRAINER	N	Y	Y	Y	N	N	N
89	SINGLE GIRDER EOT / HOT MISC. CRANES	N	Y	Y	Y	N	N	N
90	SITE SPECIFIC SEISMIC STUDY	N	N	Y	N	N	N	N
91	SOLENOID OPERATED VALVES	N	Y	Y	Y	N	N	N
92	SPRING FOR BFP, FAN AND MILL FOUNDATION	N	Y	N	Y	N	N	N
93	SPRING LOADED BYPASS VALVES	N	Y	Y	Y	N	N	N
94	STATION LIGHTING SYSTEM**	Y	Y	Y	Y	N	Y	Y
95	STEAM TRAPS	N	Y	Y	Y	N	N	N
96	STEEL GATE/GLOBE/NR VALVES(WATER SYSTEM)	N	Y	Y	Y	N	N	N
97	SUMP PUMPS/SUBMERSIBLE PUMPS	N	Y	Y	Y	Y*	N	N
98	THERMAL INSULATION - R-MATTRESSES/P-SECN	N	N	Y	Y	N	N	N

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99	THERMAL INSULATION - ANCILLARY MATERIAL	N	N	N	Y	N	N	N
100	THERMAL INSULATION- CERAMIC FIBRE BLANKET	N	N	Y	Y	N	N	N
101	TRAVELLING WATER SCREENS	N	Y	Y	Y	N	Y	N
102	TREFOIL CLAMPS	N	N	Y	Y	N	N	N
103	ULTRASONIC FLOW METERS	N	Y	Y	Y	N	N	N
104	VIS FOR BFP, FAN AND MILL FOUNDATION	N	Y	Y	Y	N	N	N
105	VIS FOR TD BFP	N	Y	Y	Y	N	N	N
106	VIS FOR TG FOUNDATION	N	Y	Y	Y	N	N	N
107	WIND TUNNEL TEST FOR CHIMNEY	N	N	Y	N	N	Y	N
108	WORKSHOP EQUIPMENTS	N	Y	Y	Y	N	N	N

(\*\* - Turnkey packages, if E&C in vendor scope)

(\* - if applicable as per Tech. Spec.)

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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.	
	5	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.	
	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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<p>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.</p> <p>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.</p> <p>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.</p> <p>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:</p> <ol style="list-style-type: none"> <li>Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;</li> <li>admissions made by the other party in the course of the Conciliator proceedings;</li> <li>proposals made by the Conciliator;</li> <li>The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.</li> </ol> <p>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.</p> <p>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.</p> <p>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.</p> <p>34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.</p> <p><b>Format 5 to BHEL Conciliation Scheme, 2018 STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE IEC BY BOTH THE PARTIES</b></p> <ol style="list-style-type: none"> <li>1. Chronology of the Disputes</li> <li>2. Brief of the Contract/MoU/Agreement/LOI/LOA</li> <li>3. Brief history of the Disputes:</li> <li>4. Issues:</li> <li>5. Details of Claim(s)/Counter Claim(s):</li> </ol>			

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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: ContractNo/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.

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b> Revision no. 07	<b>ANNEXURES</b>
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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: ContractNo/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.

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b> Revision no. 07	<b>ANNEXURES</b>
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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: ContractNo/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.

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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 Bengal	PSER	19AAACB4146P1ZC
24	Mizoram	PSER	15AAACB4146P1ZK
25	Orissa	PSSR	21AAACB4146P1ZR
26	Arunachal Pradesh	PSER	12AAACB4146P1ZQ

	<b>PROJECT ENGINEERING MANAGEMENT</b>	<b>GENERAL CONDITIONS OF CONTRACT (GCC)</b> Revision no. 07	<b>APPENDIX</b>
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### **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:

- 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
- 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

#### **(STIKE 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-

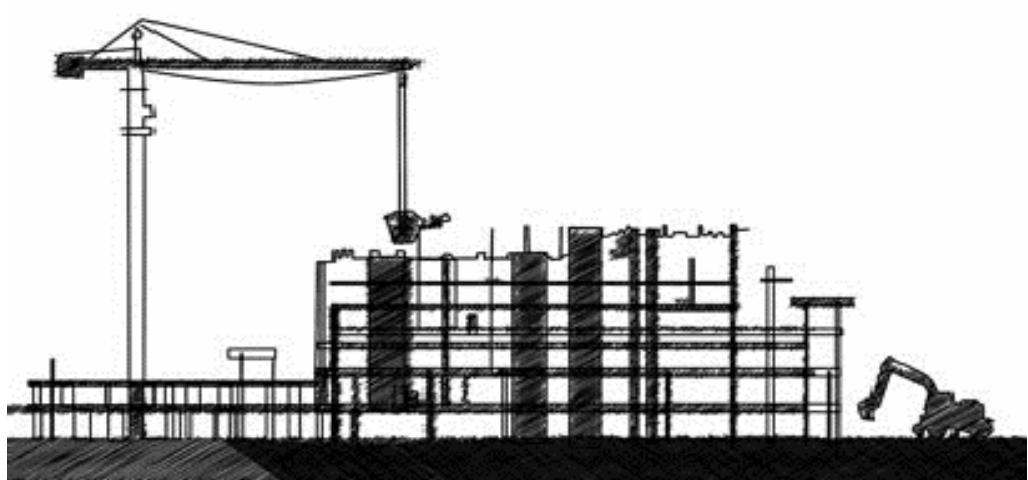
Membership Number-

Seal of Chartered Accountant-



HSEP14

# Health, Safety & Environment Plan for Site Operations by Subcontractors



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## **SECTION A**

### **CRITICAL RESOURCES FOR HSE IMPLEMENTATION**

A handwritten signature in black ink, appearing to read 'Rk'.

## 1. SHARING OF OPERATING COSTS OF FACILITIES

**TABLE A.1**

SN	FACILITY
1	Ambulance with 24 hr. First Aid Trained Driver (Specs in Annexure A)
2	Operation of Medical center, Nurses, Medical Consumables etc. (Specs in Annexure A)
3	Training Center Consumables
4	Water sprinkling for dust suppression
	(Others:)

**Note:**

- i. Responsibility of operation of above facilities shall rest with BHEL
- ii. Operating cost of the above shall be deducted from subcontractors on 'proportional to contract' value basis. Sample deduction table enclosed as Annexure A.1
- iii. "Contract value" defined above & subsequently in the document shall be considered as "Awarded contract value".
- iv. No overhead cost/ enabling cost of BHEL shall be levied on the contractors for common facilities.
- v. These running costs shall be recovered from all the available subcontractors at site for the complete operational duration of the site
- vi. No overheads shall be charged on shared operating costs

## 2. RESOURCES TO BE PROVIDED SOLELY BY THE SUBCONTRACTOR

**TABLE A.2**

SN	ITEM	SPECIFICATIONS
1.	HSE DISPLAYS, Posters and signage	Annexure B
2.	HSE Tools/ Equipment/ Devices	Annexure C
3.	Rest Sheds for Workers	Annexure D
4.	Labor Colony	Annexure E
5.	Toilets (Latrines & Urinals) - in Site and Labor Colony	Annexure F
6.	Fire Extinguishers	Annexure G

**Note:**

In case subcontractor fails to provide the required resources, same will be procured and deployed by BHEL with applicable overhead on total procurement cost

## 3. ESTABLISHMENT OF COMMON FACILITIES

In green field projects BHEL shall arrange and provide the following facilities which shall be used by all subcontractors for their employees and workers. These shall be

- i. Medical Centre
- ii. Safety park with facilities of audio-visual training & vertigo test center.
- iii. No cost shall be deducted from the subcontractors for the structure part only.
- iv. The running cost with basic inputs already mentioned at Point 1 above shall be shared by all contractors.
- v. The sub-contractors shall be required to ensure participation in trainings, medical checkup and vertigo test as per the guidelines laid in this document and required as per statutory HSE requirements.



- vi. However, in projects where these facilities are not provided by BHEL, subcontractors shall ensure the training, medical/ vertigo test of all workers at site in consultation and guidance of BHEL HSE team at site in line with provisions of this document.
- vii. The overall onus of compliance to HSE practices pertaining to training, medical checkup including vertigo test shall lie on the subcontractor only.

#### 4. CRITICAL REQUIREMENTS W.R.T. EQUIPMENT & PPES

- i. Conventional Hydra crane with carriage in front shall not be permitted. Pick & carry tyre mounted Front Cabin mobile crane (FX or TRX/ NextGen series of 'ESCORT" or equivalent make) shall only be permitted.
- ii. Any Heavy equipment (cranes, winch machines, etc.) shall be deployed only after pre-safety Inspection by safety dept. Valid AMCs/ Fitness/ other statutory clearances as per local rules shall be required to be submitted before mobilizing the equipment at site.
- iii. All other Hand tools and power tools should not be older than 5 years.
- iv. For Chimney passenger lift, winch to have double drum rope for passenger and double safety devices must be used. Winch should not more than 3 years old and winch rope must be inspected with valid certificate from competent authority within 6 months and should meet the IS standard 9507 provision of OLR and push back button arrangement or dead man switch.
- v. Gate pass for all the lifting T&Ps and construction machinery/ equipment shall be made after obtaining written acceptance (Pre-entry Safety Clearance) from BHEL Site Safety Department after physical verification and checking all requisite documents/ compliance to Safety norms
- vi. All motor vehicles should have valid registration certificate, insurance, Pollution under control (PUC) and fitness certificate as per Motor Vehicle Act 2020. The certificates should be pasted in the glass from inside.
- vii. PPEs shall be from reputed manufacturers viz. 3M, Udyogi, Karam, Frontier, Freedom, Honeywell, Liberty, Bata, Nomex, Acme, Unicare, Life Gear or equivalent. In case Subcontractor recommends any other name the same can be approved at site level by the Construction manager & Site HSE
- viii. For height work, where fall could result in death or disability, a secondary means of fall protection (Safety Net, Retractable Fall Arrestor etc.) shall be mandatorily provided by the subcontractor, failing which, a penalty of INR 10000 per case will be imposed. In addition, there should be constant supervision for such critical height work. Any non-erection activities at height eg. Housekeeping etc. shall also fall under the category of height work
- ix. **Scaffold Tagging**



Scaffolds being erected, modified or dismantled must be tagged as suitable for use. Tagging shall be done with standard tag holder. Scaffolding tag should be certified by scaffolding inspector having valid certificate.

- **GREEN** scaffold tag- shall be fixed when scaffold is complete and safe for use, signed and dated by the scaffolding competent person daily.
- **RED** scaffold tag – to be fixed if scaffold is in some way defective and cannot be used or is still under erection.
- **YELLOW** scaffold tag – to be fixed if scaffold is in under construction/maintenance.



**FIG. A.4.1 SAMPLE SCAFFOLD TAGS AND TAG HOLDER**

x. **T&P Color Coding:**

- a. Inspections and tests shall be documented by means of color coding which shall verify that inspections or testing are current and that all receptacles, portable Power tools, Lifting Tools & Tackles have been inspected and tested as required. The color codes used on the project shall be:

GREEN	BLUE	YELLOW	PURPLE
January	April	July	October
February	May	August	November
March	June	September	December

**TABLE A.4.2: T&P COLOR CODES**

- b. The cycle of colors shall be Quarterly as a minimum or as decided by BHEL. The color code tape / Sticker shall be clearly visible to designate the period for which the inspections and tests were conducted.
- c. Following the initial inspection, the equipment must be color-coded quarterly as per color-coding instructions that will be issued by the subcontractor.
- d. Fire extinguisher with the current month color-coding inspection sticker must be provided and secured in the platform.
- e. All slings shall be regularly inspected in accordance with the requirement of the project for frequent and periodic inspections and discard immediately if they fail to meet the minimum requirements of the project.
- f. The Subcontractor's HSE Officer shall ensure that all PPE is inspected prior to its issue. He is to ensure all subcontractor personnel are using safe and proper PPE equipment.

*Rk*

inspections on the PPE shall be carried out and personnel not adhering to those inspections shall be removed immediately from the site.

g. A Ten (10) day interval period shall be given into each monthly color code change. During this Ten (10) day period either color shall be acceptable.

xi. **T&P Tagging:**

All deployed Wire Rope Slings, Chain Pulley Blocks, Hooks, slings etc. shall be Tagged using aluminum or any other metal tag with punching.

## 5. HSE PERSONNEL TO BE PROVIDED SOLELY BY THE SUBCONTRACTOR

### 5.1. NUMBERS OF HSE PERSONNEL (APPLICABLE FOR EACH WORK SHIFT)

Number of HSE Officers and Supervisors shall be in proportion to number of workers as per Table A.6 below

TABLE A.5

No. of Workers	No. of HSE Supervisors	No. of HSE Officers
Up to 100	1	1
101 to 250	2	1
251 to 500	4	1
501 to 1000	6	2
1000 to 2000	6+ One additional supervisor up to every additional 250 workers	3
2000-3000	10+ One additional supervisor up to every additional 250 workers	4
3000-4000	14+ One additional supervisor up to every additional 250 workers	5

#### 5.1.1. DEPLOYMENT PLAN

- i. Above requirement is for every shift for each unit.
- ii. The dynamic deployment plan of Safety manpower at various locations containing names, areas, time periods, shifts etc. shall be submitted to BHEL for approval by subcontractor
- iii. BHEL may modify the deployment plan based on nature and volume of jobs, Risks and hazards associated etc.
- iv. For less than 20 workers HSE Officer is not mandatory. In case the number of workers exceed 20 for 3 consecutive months, HSE Officer is to be engaged. The HSE Officer shall be deployed for a minimum period of 6 months even if the number of workers fall below 20 in any month subsequent to deployment. If within that 6-month period, the number of workers is more than 20 for at least 3 months, the deployment duration of HSE Officer will extend further 6 months after completion of previous 6-month period.
- v. For Site Material Management/ Handling (Loading/ Unloading) contracts, 1 no. HSE Officer shall be required irrespective of the total manpower deployed.
- vi. HSE Officers/Supervisors of all the vendors may be required to report directly to BHEL HSE Officer at site & shall comprise as a total team for handling all HSE issues. However, each safety officer/ agency shall be individually responsible for the safe execution of work in their respective areas.



## 5.2. QUALIFICATION & EXPERIENCE REQUIREMENTS OF HSE PERSONNEL

### 5.2.1. HSE OFFICER

First HSE Officer to be mandatorily as per Option I as under and shall be designated Senior HSE Officer. In case of non-availability of HSE Officers with Option I configuration, the subsequent HSE Officers can be as per Option II below with recorded reasons and approval of Site Construction Manager of BHEL. All these deviations should be reported to Region HSE and PSHQ HSE.

#### A. Option I

- i. possesses a recognized degree in any branch of engineering or technology or architecture and had a practical experience of working in a building or other construction work in a supervisory capacity for a period of not less than two years or possesses a recognized diploma in any branch of engineering or technology and has had practical experience of building or other construction work in a supervisory capacity for a period of not less than five years;
- ii. possesses a recognized degree or diploma in industrial safety with at least one paper in construction safety (as an elective subject/ part thereof);
- iii. has adequate knowledge of the language spoken by majority of building workers from the construction site in which he is to be appointed.

#### B. Option II:

Graduation Degree in Science with Physics & Chemistry and degree or diploma in Industrial Safety (All Degrees/ Diploma from any Indian institutes recognized by AICTE or State Council of Technical Education of any Indian State) with practical experience of working in a building, plant or other construction works (as HSE Officer, in line with Indian Factories Act, 1958 or BOCW Act, 1996) for a period of not less than five years

#### Note:

- i. HSE Officer as per Option II shall be valid only on availability of Senior HSE Officer as per Option I at site.
- ii. In case of resignation of the Senior HSE Officer, the same has to be replaced within 15 days else all subsequent HSE Officers as per Option II (in case of multiple HSE Officers with a single agency) shall not be considered as valid.
- iii. The penalty shall be deducted considering non-availability of any HSE Officer at site.

### 5.2.2. HSE SUPERVISOR: EITHER OF X OR Y BELOW

X. Recognized Degree in any branch of Engineering OR Diploma in any branch of engineering with at least one-year construction experience

OR

Y. A recognized graduation Degree in Science (with Physics & Chemistry) or a recognized diploma in Engg. or Tech.

Additional requirements for option (Y) above



- i. Trained in fire-fighting as well as in safety / occupational health related subjects, with:
- ii. Minimum Two years of practical experience in construction work environment or in the field of safety and

**Note:**

- i. Option a above is by default, b is under special approval from Site HSE & Construction manager
- ii. In both cases the candidate should possess requisite skills to deal with construction & fire safety related day-to-day issues.

### 5.3. HSE IN-CHARGE

In case there is more than one HSE Officer with any subcontractor, one of them, who is senior most by experience & meets qualification as per option 1 as mentioned in clause 2.1 A above (in HSE discipline), may be designated as HSE In-charge who will be the nodal point of contact on HSE matters.

### 5.4. SUPPORTING STAFF TO HSE TEAM

- i. Supporting Staff shall include scaffolders, scaffolding inspectors, riggers, skilled and unskilled manpower
- ii. Subcontractor shall provide adequate number of workers as and when required, in order to attend and comply to Safety observations raised by BHEL/ Customer.

### 5.5. AVAILABILITY AND PENALTY FOR NON-DEPLOYMENT

- i. The subcontractor shall submit the certificates of qualification & experience of HSE manpower before deployment for BHEL to assess suitability as per requirement detailed in this document
- ii. In case of rejection, subcontractor shall arrange additional candidates and submit resume to BHEL. Penalties will be applicable during the period of non-deployment in such cases as well.
- iii. Subcontractor shall ensure physical availability of safety personnel at the place of specific work locations.
- iv. The Subcontractor shall deploy the HSE Officers as per the site's requirement. Non-deployment shall lead to stoppage of the work and final decision shall rest with Site HSE & Construction manager.
- v. The Subcontractor shall prepare an organization chart identifying the areas of operations, responsibilities and reporting structure of all safety personnel for each shift and submit the same to BHEL.
- vi. The subcontractor shall deploy sufficient HSE Officers, supervisors, as per numbers & qualifications mandated in this Section since mobilization of first batch of manpower and add more in proportion to the added strength in work force. Any delay in deployment will attract a penalty at following rates:

Non-deployment of HSE Officer – Rs. 75,000 per man-month

Non-deployment of HSE Supervisor – Rs. 50,000 per man-month



- vii. Penalty shall be collected for the period of non-availability of safety personnel after allowing a grace period of 15 days for finding a replacement. The same shall be deducted on pro-rata basis till the required manpower is deployed.
- viii. In case of abnormal delay & frequent rejections of candidates proposed by the subcontractor, BHEL shall exercise the right to deploy the safety manpower & deduct the amount from subcontractor's running bill with applicable overheads. In such cases also, the provision of logistics, transportation, food and other logistical support to the HSE personnel shall be in the scope of subcontractor in addition to the salary. After deployment of manpower by BHEL, the penalty for non-deployment specified above shall not be applicable.

## 6. COMPETENCY OF OPERATORS/ DRIVERS OF CRANE, WINCH, LIFTING/ CONSTRUCTION EQUIPMENT ETC.

- i. The Operators/ Drivers of crane, winch, construction/ lifting equipment etc. shall be experienced and have valid driving license for the class of vehicle / machinery as applicable (like Crane/ Forklift/ Rig, Construction equipment driving license etc.).
- ii. Minimum HMV driving license is required for all heavy equipment/ heavy vehicle (trailer/ Hyva /dumper /TM) operators at site.
- iii. The subcontractor shall certify competence of these persons in writing as and when they are posted at site.
- iv. Crane, Winch, Construction & lifting equipment operator should have certificate on subject course or experience certificate in employer letterhead.
- v. Where state is providing license for operating crane, tractor and other construction vehicles, same to be ensured.

**Note:** In case the statutory requirements i.e. State or Central Acts and / or Rules as applicable like the Building and Other Construction Workers' Regulation of Employment and Conditions of Service- Act,1996 or State Rules (wherever notified), the Factories Act, 1948 or Rules (wherever notified), etc. are more stringent than above, the same shall be followed.

## 7. In case of any stringent requirement of BHEL's customer over and above the specifications mentioned in current document, the same shall also be required to be complied at site by subcontractor.

## 8. REFERENCES

The Safety Rules for Construction & Erection as outlined hereunder, while setting out a broad parameter of safety norms, are not exhaustive. The subcontractor and his agencies are advised to refer to the following statutory provisions as amended from time to time for details and strict compliance therewith.

### 8.1. FOR GREENFIELD PROJECTS



- a) Building and Other Construction Workers (regulation of employment and conditions of service) Act, 1996 (briefly referred to as BOCW Act),
- b) Building and other construction workers (regulation of employment and conditions of service) Central Rules, 1998 (briefly referred to as BOCW Rules) as adopted by the various State Governments,

## 8.2. FOR EXPANSION, MODIFICATION, ALTERATION AND, OR CONSTRUCTION ACTIVITY WITHIN AN EXISTING PLANT OPERATING AS PER APPROVED SITE PLAN UNDER THE FACTORIES ACT

- a) Factories Act, 1948,
- b) Factories Rules, as adopted by the various State Governments
- c) BOCW Act
- d) BOCW Rules
- e) In case a new act/ statutory guideline/ modification/ consolidation of acts is implemented the same shall be required to be adhered by the subcontractor.
- f) The latest amendment of the above-mentioned acts/ rules shall be followed at site.

## 9. BHEL POWER SECTOR HSE MANAGEMENT SYSTEM

The Systems and procedures of BHEL Power Sector HSE Management System shall be implemented by the subcontractor, including:

- HSE PROCEDURE FOR REGISTER OF OHS HAZARDS AND RISKS
- HSE PROCEDURE FOR REGISTER OF ENVIRONMENTAL ASPECTS AND IMPACTS
- HSE PROCEDURE FOR REGISTER OF REGULATIONS
- HSE PROCEDURE FOR TRAINING AND AWARENESS
- HSE PROCEDURE FOR EMERGENCY PREPAREDNESS AND RESPONSE PLAN
- HSE PROCEDURE FOR PERMIT TO WORK
- HSE INSPECTION AND OTHER FORMATS

**Note:**

- i. BHEL reserves the right to revise/ update these systems and procedure as per requirement to address any changing HSE needs
- ii. BHEL will provide hard / soft copies of applicable HSE Procedures, Work Permits, Operational Control Procedures, Inspection/ Other Formats etc. that are necessary for ensuring safe work to the successful bidder at Site. It is the responsibility of the subcontractor to ensure availability of these documents before commencing work at site.
- iii. The subcontractor can get soft copies of these documents from respective Region SCT/ HSE for reference. The signed hard copies of the same shall not be required to be submitted along with tender document
- iv. Subcontractor shall use the Digital (Web & App-Based) HSE management Software Systems provided by BHEL whenever provided. In case not provided, hard copy systems will continue to be used. All information technology resources (Computers, mobile phones, mobile data, internet access etc.) for the use of such systems shall be ensured by the subcontractor.



## 10. CLEARANCE OF MONTHLY RUNNING BILLS SUBJECT TO SAFETY COMPLIANCE

- i. The monthly running Bills of the subcontractor shall be released subject to compliance to HSE requirements as per checklist in Annexure H
- ii. BHEL site HSE Head and Package In-charge shall be authorized to issue the clearance
- iii. Site Construction Manager of BHEL shall be the final authority on the matter.

## 11. HSE PERFORMANCE EVALUATION

- i. Subcontractor shall be assessed on monthly basis for HSE Compliance by BHEL Safety In-charge at site.
- ii. The HSE evaluation shall be based on HSE Performance Evaluation System of BHEL covering the contractual, statutory and regulatory requirements of HSE.
- iii. BHEL shall reserve the right to use these performance scores for evaluating bidder's capacity for future tenders
- iv. If safety record of the subcontractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognize the safety performance of the subcontractor may be considered by BHEL after completion of the job, provided the execution performance is satisfactory.

## 12. HSE PENALTIES

- i. Nonconformity of safety rules and safety appliances will be viewed seriously and BHEL has right to impose fines on the subcontractor for every instance of violation noticed.
- ii. As per contractual provision HSE penalties shall be imposed on subcontractors for non-compliance on HSE requirement as per following format.
- iii. Following are the applicable penalties for various Safety violations:

### **Sub: MEMO for Penalty for non-compliances in Safety**

Following lapse (tick marked) was observed and penalty (in Rs.) is imposed as stated at the bottom of this memo. It is requested that such occurrences be please avoided in future.

S. No	Nature of Non - Compliance	Penalty (in INR)	Remarks
<b>A. System Violations</b>			
1	Working without valid Work Permit/ HIRA/ Method Statement / JSA	2000	Per case
2	Controls as per Work Permit/ HIRA/MS/JSA not ensured	2000	Per case
3	Reported Safety Violations Not Closed within Stipulated Time	1000-10000	Per case
4	Absence of required Subcontractor Officials (Site Head, HS Head) in Safety Reviews/Meetings	5000	Per case
5	Not providing required PPEs (Safety Harness, Lifeline, Safety Net, Fall arrestor, Safety Helmet, Gloves, Shoes etc.) for the work by subcontractor	2000	Per case
<b>B. Competency/ Training/ Induction Violations</b>			



1	Incompetent personnel deployed for specialized jobs like height work, hot work, rigging, vehicle operation etc. (without valid license/ certificate etc.)	3000	Per case
2	Work without induction training & medical check	2000	Per case
3	Height Work without Vertigo Test and height work training	2000	Per case
<b>C. PPE Violations – Height Work</b>			
1	Not wearing/ hooking Double Lanyard Safety Harness while working at height (> 1.2 meters) or not anchoring to lifeline	1000	Per case
2	Not Providing Lifeline for height work	3000	
3	Unsafe platforms – without Top, Mid Rails and Toe-Guards for Height Work	3000	
4	Not providing secondary means of fall protection for height work (Safety Nets, Retractable Fall Arrestors etc.)	3000	Per case
<b>D. PPE Violations – General</b>			
1	Not wearing safety helmet	1000	Per case
2	Wearing of helmets without chin straps	1000	Per case
3	Not Wearing safety shoes	500	Per case
4	Not wearing gloves	500	Per case
6	Not using grinding goggles/ face shield during grinding/ cutting	2000	Per case
<b>E. Electrical Safety Violations</b>			
1	Broken/ exposed wires/ cables	2000	Per case per day
2	Electrical plug not used for connection/ hand machines	1000	Per case per day
3	Not using proper ELCBs for electrical equipment	2000	Per case per day
4	Improper earthing of welding & Other electrical machines (Lack of double earthing, improper/ untested earth pit etc.)	2000	Per case per day
5	Not using 24 V supply for lighting in confined spaces	2000	Per case
6	Cables haphazard/ blocking way/ not organized properly	1000	Per case per day
<b>F. Lifting &amp; Rigging Violations</b>			
1	Using Sling/ Chain Pulley Block and other Small T&Ps without proper, traceable Tag and Test Certificate	2000	Per T&P per day
2	Using damaged slings or not slinging properly	2000	Per T&P per day
3	Use of lifting equipment without having valid Test certificate	5000	Per equipment per seven days
4	Lifting hooks used without latches	2000	Per hook per day
5	Not effectively barricading area below lifting activity	5000	Per case
6	Using untrained/ unqualified rigger	5000	Per case
<b>G. Housekeeping</b>			
1	Non-removal of scrap from platforms	5000	Per Event Per location per 7 days
2	Not conducting scheduled housekeeping drives	5000	Per drive
<b>H. Hot Work Safety Violations</b>			
1	Gas cutting without flash back arrestor at both ends	5000	Per machine per incidence
2	Gas cutting at height without fire blanket	2000	Per event



3	Not keeping gas cylinders vertically	2000	Per event
4	Lifting cylinders without cage or rolling of cylinders	2000	Per incidence
5	Leakage in gas cylinder	2000	Per incidence
<b>I. Vehicle Safety/ Operation</b>			
1	Not having valid driving license for the type of vehicle/ T&P	2000	Per driver per incidence
2	Two-wheeler entry in construction area	2000	Per vehicle
3	Using Hydra for material movement at site in unsafe manner	2000	Per case
4	Using Two Hydra in Tandem for material movement without proper precautions as per OCP	2000	Per case
5	Vehicles, Hydras, Cranes, Dumpers and Earth Movers not having automatic back horns linked to gear	2000	Per Equipment per day
6	Not providing proper hard barricades around excavations/ unpermitted areas	5000	Per location per day
7	Not using guide rope while transporting material using Hydra or Cranes	2000	Per event
8	Over speeding	5000	Per case
9	Using Conventional Hydra crane	50000	Per day /crane
<b>J. Accidents/ Incidents/ Near Misses</b>			
1	Non-reporting of Near Miss/ Incident	20000	Per case
2	Major Accident – Worker unable to resume work within 48 hrs	100000	Per incident
3	Fatal Accident	500000	Per incident
<b>K. Miscellaneous</b>			
1.	Not providing the facility (drinking water, rest shed, labor colony etc. as per the specifications/ requirement)	5000	Per month per violation
2.	Not nominating the required number of workers for training as per plan	5000	Per incidence
3.	Lack of proper arrangement for disposal of sewage/ waste water/ effluents etc.	10000	Per incidence

Details (if any) related to non- compliance (Name of persons, Nature of deficiency, etc.):

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Penalty Amount:

1. Rate as per above chart
2. No. of Persons/ machine/ event/ labor
3. No. of times the same error is repeated: Repetition factor
4. Total Penalty= 1. X 2. X 3. =

**Witnessed by:**

(Sub- Subcontractor representative)  
representative)

(BHEL

Signature

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Name

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**Distribution:** 1 Copy: to Sub- subcontractor Site In-charge,  
1 Copy to Site Construction Manager (BHEL)  
1 Copy to Site Finance

**Note:**

- i. In case the amount of penalty imposed by BHEL's Client on BHEL for Safety violation/ incident due to or in the area of the subcontractor is more than those indicated above, same shall be imposed back-to-back on the subcontractor. However, in case such an amount is less than the specified above, penalty amount indicated above shall be imposed on the subcontractor.
- ii. For same violation only one penalty (higher of the two mentioned below) shall be applicable
  - a. Penalty imposed by BHEL's Customer over BHEL.
  - b. Penalty as indicated in current document.
- iii. For repeated violation for the same equipment/ location, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.
- iv. For repeated fatal incident in the same Unit incremental penalty shall be imposed: The subcontractor will pay 2 times the previously paid penalty in case there is repeated major/ fatal incident under the same subcontractor for the same package in the same unit.
- v. Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above.
- vi. If principal customer/statutory and regulatory bodies impose some penalty on HSE due to the non-compliance of the subcontractor the same shall be passed on to them.
- vii. The penalty amount shall be recovered by BHEL Finance department from subcontractors from the RA/Final bill.

### 13. PUNITIVE ACTIONS FOR "CRITICAL SAFETY VIOLATIONS":

**"Critical Safety Violations" include:**

- i. Not wearing required PPEs when provided and not following safe work procedure
- ii. Taking unnecessary risks especially in height work, hot work, radiation work, lifting activity
- iii. Coming to work under influence of sedatives like alcohol, drugs etc.
- iv. Coming to work without ID Card/ Gate Pass (if provided)
- v. Intimidating/ threatening at work
- vi. Using cell phones during height work, hot work, lifting activity, driving.

In case any worker carries out any of the critical safety violations as above, BHEL reserves the right to enforce punitive action in following manner:

<b>First Offence:</b>	1 Punch on Gate Pass/ Induction Card/ ID Card etc. and 1-hour HSE Training. With one day off from duty
<b>Second Offence:</b>	2 Punches and 2-hours HSE Training with one day off from duty



<b>Third Offence:</b>	3 Punches and the worker will be dismissed. Gate pass to be confiscated
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In case any employee of subcontractor carries out any of the critical safety violations as above, subcontractor Site In-charge shall issue warning letter to concerned employee with copy to BHEL

**Note:**

- i. For above violations, guilt of the worker/ employee has to be established through appropriate evidences and records maintained.
- ii. If worker/ employee has not been given the required PPEs and safety equipment by the agency and/or not facilitated by the agency to follow safety rules, he/ she will not be considered liable but the agency will be penalized as per penalty provision in this document. In such cases, the subcontractor shall not pass the penalty over to the worker/ employee through wage deduction etc.
- iii. These critical safety violations and their consequences shall be shared with all workers and employees during induction and other training programs/ meetings, toolbox talks etc.
- iv. Gate Pass shall have provision of Tagging as indicated above
- v. The appellate authority (only for final dismissal) in this case shall be the BHEL Site In-charge whose decision shall be final on the matter and binding on all parties.

## 14. LEGAL IMPLICATIONS

Any legal Costs incurred by BHEL, on account of accidents taking place in the activities of the subcontractor, shall be debited to the subcontractor on actual cost basis.

For any accident occurring at site to any worker/ employee of the subcontractor leading to legal implications to BHEL Employee/ Management shall be safeguarded by BHEL legal department. All legal expenses incurred by BHEL on this account shall be recovered from the subcontractor. The accident also includes fire, loss of property or life at site.

## 15. HSE REVIEW MEETING

- i. Subcontractor Site In-charge and HSE In-charge shall attend the HSE Review Meeting as and when called by BHEL.

The indicative agenda points are given below:

- a) Implementation of earlier MOM points
- b) Compliance Status of HSE Observations
- c) Incidents & Near Misses, their Root Causes and Actions Taken
- d) HSE performance review
- e) HSE inspection findings
- f) HSE audit and CAPA
- g) HSE training
- h) Health check-up camp
- i) HSE planning for the erection and commissioning and installation activities in the coming month



j) HSE reward and promotional activities

- ii. MOM on the discussion along with HSE observations will be circulated to the subcontractor for action.
- iii. The subcontractor shall close the observations to the satisfaction of BHEL within stipulated time frame

## 16. OTHER REQUIREMENTS

- i. If the subcontractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps and the cost shall be debited to the subcontractor with applicable overheads.
- ii. If the subcontractor succeeds in carrying out its job in time without any fatal or disabling injury incident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the subcontractor suitably for the performance.
- iii. In case of any damage to property due to lapses by the subcontractor, BHEL shall have the right to recover the cost of such damages from the subcontractor after holding an appropriate enquiry.
- iv. The subcontractor shall take all measures at the sites of the work to protect all persons from incidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding of law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the subcontractor be paid to compromise any claim by any such person, should such claim proceeding be filed against BHEL, the subcontractor hereby agrees to indemnify BHEL against the same.
- v. The subcontractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
- vi. The subcontractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard.
- vii. BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the subcontractor shall adhere to such instructions.
- viii. BHEL may prohibit the use of any construction machinery, which according to the organization is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.



## 17. MEMORANDUM OF UNDERSTANDING:

After award of work, subcontractors are required to enter into a memorandum of understanding as given below:



### Memorandum of Understanding

BHEL, Power Sector Region is committed to Health, Safety and Environment Policy (HSE Policy).

M/s.....do hereby also commit to comply with the same HSE Policy while executing the Contract Number \_\_\_\_\_

M/s.....have gone through and understood all the HSE requirements of the contract including HSE manpower, tools & equipment, systems & procedures, and agree to fulfill the same as a minimum. Any additional resources and support required for ensuring fulfillment of HSE Objectives shall be provided by subcontractor at no extra cost.

M/s..... agree that in case they fail to comply to the HSE requirements as stipulated in the contract, BHEL shall have the right to implement the same and the cost shall be recovered from the subcontractor with applicable overheads.

M/s..... shall ensure that safe work practices as per the HSE plan. Spirit and content therein shall be imbibed in all workers and supervisors for compliance.

In addition to this, M/s.....shall comply to all applicable statutory and regulatory requirements which are in force in the place of project and any special requirement specified in the contract document of the principal customer.

M/s.....shall co-operate in HSE audits/inspections conducted by BHEL /customer/ third party and ensure to close any non-conformity observed/reported within prescribed time limit.

M/s..... agree that the subcontractor shall seek HSE clearance as per BHEL format before each RA bill as mentioned in clause no. 9. The penalty amounts for not providing Safety manpower and various Safety violations have also been reviewed and agreed.

M/s..... agree to share the HSE Costs (running costs) of common facilities created by BHEL on proportional to contract value basis as calculated at Site by BHEL.

Signed by authorized representative of M/s -----

Name :

Place & Date:



## **SECTION B**

## **OPERATIONAL REQUIREMENTS**

A handwritten signature in black ink, appearing to read 'Rk'.

## 1. PURPOSE:

- 1.1. The purpose of this HSE Plan is to provide for the systematic identification, evaluation, prevention and control of general workplace hazards, specific job hazards, potential hazards and environmental impacts that may arise from foreseeable conditions during installation and servicing of industrial projects and power plants.
- 1.2. This document shall be followed by BHEL's subcontractors at all installation and servicing sites. In case customer specific documents are to be implemented, this document will be followed in conjunction with customer specific documents in complementary manner.
- 1.3. Although every effort has been made to make the procedures and guidelines in line with statutory requirements, in case of any discrepancy wherein the relevant statutory guidelines supersedes this document, the same shall be followed.
- 1.4. In case there's any specific HSE requirement from BHEL's Client, not explicitly indicated in this document the same shall be required to be fulfilled as per the decision of BHEL Site construction manager.

## 2. SCOPE:

The document is applicable to BHEL's Subcontractors at all installation / servicing activities of BHEL Power Sector as per the relevant contractual obligations

## 3. OBJECTIVES AND TARGETS:

- i. To achieve "Zero Incident at Site"
- ii. 100% compliance to all legal/statutory requirements related to EHS.
- iii. 100% Health, Safety and Environmental Induction training attendance for all workers.
- iv. 100% High Risk activities to be carried out only after approved Method Statement, HIRA / Aspect-Impact / JSA / OCP and Permit to Work are implemented.
- v. 100% PPEs compliance in high and medium risk activities.
- vi. 100% incident reporting, recording and reviewing for corrective actions.
- vii. Regular Safety Reviews to assess HSE program compliance and closure of any recognized gaps to improve safety management and incident prevention
- viii. Prevent injury and ill health of all workers at site ('Workers' refers to all personnel including managerial, supervisory, professional, technical, clerical and other workers including contract laborers)
- ix. Prevent pollution to environment
- x. Ensure the Health and Safety of all persons at work site is not adversely affected by the work.
- xi. Ensure protection of environment of the work site.
- xii. Comply at all times with the relevant statutory and contractual HSE requirements.
- xiii. Provide trained, experienced and competent personnel. Ensure medically fit personnel only are engaged at work.
- xiv. Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.



- xv. Provide all personnel with adequate information, instruction, training and supervision on the safety aspect of their work.
- xvi. Effectively control, co-ordinate and monitor the activities of all personnel on the Project sites including subcontractors in respects of HSE.
- xvii. Establish effective communication on HSE matters with all relevant parties involved in the Project works.
- xviii. Ensure that all work planning considers all persons that may be affected by the work.
- xix. Ensure fitness testing of all T&Ps/Lifting appliances like cranes, chain pulley blocks etc. are to be certified by competent person.
- xx. Ensure timely provision of resources to facilitate effective implementation of HSE requirements.
- xi. Ensure continual improvements in HSE performance.
- xxii. Ensure conservation of resources and reduction of wastage.
- xxiii. Capture the data of all incidents including near misses, process deviation etc. Investigate and analyze the same to find out the root cause.
- xxiv. Ensure timely implementation of correction, corrective action and preventive action.  
The subcontractor shall also comply with HSE Targets stipulated by BHEL from time to time.

#### **4. BHEL HEALTH, SAFETY & ENVIRONMENT POLICY:**

In BHEL, Health, Safety and Environment (HSE) responsibilities are driven by our commitment to protect our employees and people we work with, community and environment. BHEL believes in zero tolerance for unsafe work/non-conformance to safety and in minimizing environmental footprint associated with all its business activities. We commit to continually improve our HSE performance by:

- ❖ Developing safety and sustainability culture through active leadership and by ensuring availability of required resources.
- ❖ Ensuring compliance with applicable legislation, regulations and BHEL systems.
- ❖ Taking up activities for conservation of resources and adopting sound waste management by following Reduce/Recycle/Reuse approach.
- ❖ Continually identifying, assessing and managing environmental impacts and Occupational Health & Safety risks of all activities, products and services adopting approach based on elimination/ substitution/reduction/control.
- ❖ Incorporating appropriate Occupational Health, Safety and Environment criteria into business decisions, design of products & systems and for selection of plants, technologies and services.
- ❖ Imparting appropriate structured training to all persons at workplace and promoting awareness amongst customers, subcontractors and suppliers on HSE issues.
- ❖ Reviewing periodically this policy and HSE Management Systems to ensure its relevance, appropriateness and effectiveness.
- ❖ Communicating this policy within BHEL and making it available to interested parties.

**Chairman & Managing Director**



## 5. ILLUSTRATIVE RESPONSIBILITIES OF SUBCONTRACTOR EMPLOYEES

### 5.1 HSE - A LINE RESPONSIBILITY

- i. HSE is a "Line Responsibility".
- ii. The term "Line" includes management, Executives, Supervisors, Foremen, and Workers who are part of the workforce. Line is to be fully involved in HSE Planning & Implementation with the aid and advice of HSE organization.
- iii. "Line", having control of resources and manpower is responsible for overall implementation of HSE Systems and closure of HSE observations.

### 5.2 SITE IN -CHARGE:

- i. Shall sign Memorandum of Understanding (MoU)
- ii. Shall ensure availability of all necessary resources required for implementation of HSE at Site
- iii. Shall engage qualified HSE Officer(s) and supervisors (s)
- iv. Shall adhere to the rules and regulations mentioned in this code, practice very strictly in area of work in consultation with concerned engineer and the safety coordinator.
- v. Shall screen all workmen for health and competence requirement before engaging for the job and periodically thereafter as required.
- vi. Shall not engage any employee below 18 years.
- vii. Shall arrange for all necessary PPEs like safety helmets, belts, full body harness, shoes, face shield, hand gloves etc. before starting the job.
- viii. Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent person.
- ix. Shall ensure closure of all HSE non-conformities reported by BHEL or observed during internal inspection by providing appropriate resources in a timely manner.
- x. Shall ensure the implementation of provisions of applicable acts and rules pertaining to HSE.
- xi. Shall ensure availability of updated (Hazard Identification and Risk Assessment) Register for the area of activity
- xii. Shall ensure availability of Method Statements & Job Safety Analysis for all hazardous activities
- xiii. Shall ensure necessary controls to minimize risk in all applicable hazardous activities including Height Work, Hot Work, Lifting & Rigging, Confined Space, Maintenance, excavation, Radiography, Loading/ Unloading, Drilling/ Blasting etc.
- xiv. Shall ensure implementation of HSE requirements mentioned in this document and as specified in the BHEL HSE management System including training, inspection, awareness, reporting etc.
- xv. Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
- xvi. Shall ensure a secondary means of fall protection (Safety Net, Retractable Fall Arrestor etc.) for preventing fall from height
- xvii. Shall ensure that materials are not thrown from height. Cautions to be exercised to prevent fall of material from height.



- xviii. Shall report all incidents (Fatal/Major/Minor/Near Miss) to the Site engineer /HSE officer of BHEL.
- xix. Shall ensure that Horseplay is strictly forbidden.
- xx. Shall ensure that adequate illumination is arranged during night work.
- xxi. Shall ensure that all personnel working under subcontractor are working safely and do not create any Hazard to self and to others.
- xxii. Shall ensure display of adequate signage/posters on HSE.
- xxiii. Shall ensure that mobile phone is not used by workers while working.
- xxiv. Shall ensure conductance of HSE audit, mock drill, medical camps, induction training and training on HSE at site.
- xxv. Shall ensure full co-operation during HSE audits.
- xxvi. Shall ensure submission of look-ahead plan for procurement of HSE equipment's and PPEs as per work schedule.
- xxvii. Shall ensure good housekeeping.
- xxviii. Shall ensure adequate valid fire extinguishers are provided at the work site.
- xxix. Shall ensure availability of sufficient number of toilets (preferably bio-toilets) /restrooms and adequate drinking water at work site and labor colony.
- xxx. Shall ensure adequate emergency preparedness.
- xxxi. Shall be member of site HSE committee and attend all meetings of the committee
- xxxii. Power source for hand lamps shall be maximum of 24 v.
- xxxiii. Temporary fencing should be done for open edges if Hand – railings and Toe-guards are not available
- xxxiv. To record all incidents including near miss and report to BHEL and to ensure analysis & corrective actions for the same
- xxxv. Shall conduct weekly Safety Walks in the work area and record the findings.
- xxxvi. Construction of Canteen at Site, Office Infrastructure: Printer, PC, Fire Extinguishers etc.
- xxxvii. Shall analysis HSE Performance regularly in work area and take steps to improve the same
- xxxviii. Shall ensure stoppage of work in case of unacceptable Safety hazards

### 5.3 HSE OFFICER:

- i. Carry out safety inspection of Work Area, Work Method, Men, Machine & Material, P&M and other tools and tackles.
- ii. Facilitate inclusion of safety elements into Work Method Statement and creation of Job Safety Analysis (JSA)
- iii. (HSE Head) To prepare deployment plan of HSE personnel for all shifts, so as to ensure constant supervision of all areas. The plan to be submitted to BHEL
- iv. Highlight the requirements of safety through Tool-box / other meetings.
- v. Help concerned HOS to prepare Job Specific instructions/ JSA for critical jobs.
- vi. Conduct investigation of all incident/dangerous occurrences & recommend appropriate safety measures.
- vii. Advice & co-ordinate for implementation of HSE Systems & Procedures.
- viii. To stop work in case of any critical safety violation until the violation is cleared
- ix. Convene HSE meeting & minute the proceeding for circulation & follow-up acti



- x. Plan procurement of PPE & Safety devices and inspect their healthiness.
- xi. Report to BHEL on all matters pertaining to status of safety and promotional program at site level.
- xii. Facilitate administration of First Aid
- xiii. Facilitate screening of workmen and safety induction.
- xiv. Conduct fire Drill and facilitate emergency preparedness
- xv. Design campaigns, competitions & other special emphasis programs to promote safety in the workplace.
- xvi. Apprise BHEL on safety related problems.
- xvii. Notify site personnel non-conformance to safety norms observed during site visits / site inspections.
- xviii. Recommend to Site In charge, immediate discontinuance of work until rectification, of such situations warranting immediate action in view of imminent danger to life or property or environment.
- xix. To decline acceptance of such PPE / safety equipment that do not conform to specified requirements.
- xx. Encourage raising Near Miss Report on safety along with, improvement initiatives on safety.
- xi. Shall work as interface between various agencies such customer, package-in-charges, subcontractors on HSE matters.

#### 5.4 HSE SUPERVISOR:

- i. All requirements as per 5.1
- ii. To monitor allotted area for Safety violations, take required action and inform the concerned Safety Supervisor / Officer
- iii. To assist HSE Officer

#### 5.5 PACKAGE IN-CHARGES, ENGINEERS & ALL EMPLOYEES:

- i. To be aware of, get involved in and ensure implementation of all HSE related Systems and Procedures including but not limited to:
  - a. BHEL HSE Management System including HSE Procedures and OCPs, HIRA, JSA etc.
  - b. Work Permit System
  - c. Emergency Preparedness Response Plans
  - d. Contractual HSE requirements
  - e. Legal Requirements
  - f. Penalty System
  - g. Training requirements
- ii. To ensure that the persons engaged in respective area follow the safety rules like using appropriate PPEs.
- iii. To develop Method Statements and ensure availability of Job Safety Analysis for all activities in scope
- iv. To ensure that the reported HSE non-conformities in the work area are resolved immediately before resuming work
- v. To record all incidents including near miss and report to BHEL.



- vi. To adopt safe working practices at all times and act as role model for Safety
- vii. To take immediate corrective action actions in case any non-conformity is observed on product / process / system with respect to Occupational Health, Safety and Environment.
- viii. In case any particular activity / work has extremely high consequential risk or high environmental impact, same shall be brought to the notice of BHEL Package In-charge before starting the work.
- ix. To interfere/ stop work as & when identified unsafe.
- x. To maintain & promote improved level of house-keeping all the time at site.
- xi. To support/co-operate with audit team members as & when safety audits are carried out.
- xii. To involve in investigation, if any incident occurs in his work area.
- xiii. To participate in safety promotional programs
- xiv. To attend the safety committee meeting, if member/invitee
- xv. To ensure that only fit T&Ps and qualified persons are engaged for all activities.
- xvi. Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
- xvii. Shall ensure that materials are not thrown from height. Cautions to be exercised to prevent fall of material from height.
- xviii. Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent authorities.

## 6. HSE PLANNING BY SUBCONTRACTOR:

### 6.1 HAZARD ANALYSIS & RISK ASSESSMENT (HIRA), METHOD STATEMENT (MS) & JOB SAFETY ANALYSIS (JSA):

- i. Subcontractor shall identify all OHS Hazards and Risks applicable to all activities in scope and plan & implement the required control measures. HIRA Register shall be maintained.
- ii. Subcontractor shall develop Method Statements & Job Safety Analysis documents for all hazardous activities in scope and ensure the required control measures. Job Safety Analysis is to be attached along with any Work Permit request

### 6.2 REGISTER OF REGULATIONS:

Subcontractor shall prepare a register of applicable rules and regulations in the scope and plan to ensure compliance.

HIRA Register, Method Statements, Job Safety Analysis and Register of Regulations are dynamic documents and shall be revised (as applicable):

- i. At fixed frequency of 3 months
- ii. Addition/ deletion/ modification of a process/ activity
- iii. After an accident/ incident
- iv. After any change in applicable rules/ regulations/ laws.

### 6.3 MONTHLY HSE PLAN COVERING THE FOLLOWING AS A MINIMUM SHALL BE PREPARED AND SUBMITTED TO BHEL FOR APPROVAL:



- i. HSE Trainings covering all activities/ hazards/ workers
- ii. HSE Inspection Plan covering all areas/ activities/ equipment/ hazards
- iii. HSE Activities: Safety walks, Awards, housekeeping, reviews etc.

**Note:** Online/ App-based system shall be used for HSE Planning and Implementation/ Update whenever provided by BHEL otherwise Hard-copy based system shall continue

#### 6.4 MONTHLY HSE PLANNING & REVIEW OF HSE ACTIVITIES ALONG WITH BHEL:

Monthly planning and review of HSE activities shall be carried out by subcontractor as per provided **format** jointly along with BHEL

#### 7. MOBILIZATION OF MACHINERY/EQUIPMENT/TOOLS BY SUBCONTRACTOR:

- i. Subcontractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the subcontractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.
- ii. As a measure to ensure that machinery, equipment and tools being mobilized to the construction site are fit for purpose and are maintained in safe operating condition and complies with legislative and owner requirement, inspection shall be arranged by in-house competent authority for acceptance as applicable. Inspection by Third Party competent person shall be arranged:
  - a. Before first time use at site
  - b. After carrying out any modification
  - c. After repairs subsequent to involvement in any accident/ incident
- iii. As a further measure to ensure that machinery, equipment and tools being mobilized to the construction site are fit for purpose and are maintained in safe operating condition and comply with legislative and owner requirement, inspection as per provided format shall be arranged by in-house expert / competent authority (preferable) for acceptance. The equipment considered for this purpose shall include all those in the T&P list in the tender document.

#### 8. MOBILIZATION OF MANPOWER BY SUBCONTRACTOR:

- i. As a measure to ensure that manpower being mobilized to the construction site is fit and competent for safe working, screening arrangement shall be made by the sub-subcontractor to ensure competency and fitness through following measures:
  - a) **Medical Checkup:** Examination of medical fitness shall be conducted through qualified medical professional for all workers to be deployed as per provided **format**. For height workers, vertigo (height phobia) test to be carried out as qualification criteria as per Annexure K and recorded in provided **format**.



- b) **Induction Training:** Induction training of all workers to be ensured as per **provided procedure and format**. Training evaluation to be carried out and training to be repeated if not passed
- c) Only on successfully meeting above criteria, permanent gate passes to be issued
- ii. The subcontractor shall arrange induction and regular health check of their employees as per schedule VII of BOCW rules by a registered medical practitioner.
- iii. The subcontractor shall take special care of the employees affected with occupational diseases under rule 230 and schedule II of BOCW Rules. The employees not meeting the fitness requirement should not be engaged for such job.
- iv. Ensure that the regulatory requirements of excessive weight limit (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
- v. Appropriate accommodation to be arranged for all workmen in hygienic condition.
- vi. Cost of contractual, statutory and regulatory requirements like Training, medical checks, PPEs etc. shall not be transferred to the workers and such activities shall be considered as part of the job.

## 9. PROVISION OF PERSONAL PROTECTIVE EQUIPMENT (PPEs):

- i. Personnel Protective Equipment (PPEs), shall be provided by the subcontractor to all workers as per requirement of the job.
- ii. The choice of PPEs to ensure multiple (at least more than 1) means of protection against any hazard. All applicable safety precautions for a job shall be ensured notwithstanding the duration or perceived importance of the task.
- iii. The applicability of PPEs shall be as per the concept of Hierarchy of controls, i.e.:
- iv. Elimination->Substitution->Engineering Controls->Administrative Controls-PPEs
- v. Relying solely on PPEs without ensuring necessary controls to be strictly avoided.
- vi. The following matrix recommends usage of minimum PPEs against the respective job.

Activity	Type of Protection						Remarks, if any
	Hand	Eye	Ear	Body	Respiratory	Others	
Gas Welding & Cutting	LG	WG	-	LA	*SCBA/ OLBA	-	* for confined space
Electric Arc Welding	LG	HMWS	-	LA	*SCBA/ OLBA	-	* for confined space
Rigging	CG	SG	-				--
Working at Height	-	SG	-	DLFBH	-	*FAS	* for vertical columns
Grinding & Chipping	CG	FS / SG	-	LA	-	-	--
Working in High Noise	-	-	EP / EM	-	-	-	--
Handling of Cement Concrete	RG	SG	-	-	DM	-	



Blasting	CG	SG	EP*	-	-	-	* at noise area
Excavation	CG	SG	-	-	DM	-	*Gum boot in place of Safety shoe for foot
Chemical Handling	PVCG	CSG	-	PVCA	-	-	*Full body rubber suit with hood
Electrical and C&I	ERG*	SG	-	-	-	-	*For high voltages
Sand/shot blasting	CG	-	EP/EM	CA	SAMH	-	

**ABBREVIATIONS:** FS: Face Shield, CSG: Chemical splash goggles, HMWS: Helmet mounted welder's shield, GB: gum boot, DLFBH: Double lanyard full body harness, SG: Safety goggles, DM: Dust mask, SAMH L Supplied air mask/hood, EP/EM: Ear plug/Ear Muff, CG: Cotton hand gloves, LG: Leather hand gloves, LA: Leather apron, RG: Rubber gloves, PVCG: PVC Gloves, PVCA: PVC Apron, SCBA: Self-contained breathing apparatus, WG: Welding goggles, ERG: Electrical Rubber Gloves. OLBA: Online breathing apparatus

The list is not exhaustive. Additional PPEs to ensure Safe Work may need to be deployed as per the requirement of the task at no additional cost.

vii. The PPEs shall conform to the relevant standards as below (illustrative list) and bear ISI mark.

#### RELEVANT IS-CODES FOR PERSONAL PROTECTION

PPEs	IS Codes
Industrial Safety Helmets.	IS: 2925 – 1984
Rubber gloves for electrical purposes.	IS: 4770 – 1968
Industrial Safety Gloves (Leather & Cotton Gloves).	IS: 6994 – 1973 (Part-I)
Leather safety boots and shoes.	IS: 1989 – 1986 (Part-I-II)
Industrial and Safety rubber knee boots.	IS: 5557 – 1969
Code of practice for selection care and repair of Safety footwear.	IS: 6519 – 1971
Leather Safety footwear having direct molding sole.	IS: 11226 – 1985
Eye protectors.	IS: 5983 – 1978
Ear protectors.	IS: 9167 – 1979
Eye & Face protection during welding	IS: 1179-1967
Industrial Safety Belts and Harness	IS: 3521 – 1983
Guide for selection of industrial Safety equipment for body protection	IS:8519 -1977
Respiratory Protective Devices	IS:9473-2002,14166-1994,14746-1999

viii. Where workers are employed in sewers and manholes, which are in use, the subcontractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent incident to the public



- ix. All the personnel and visitors shall mandatorily use safety helmet (with company logo), safety shoe and reflective vests, in addition to any other PPEs as deemed appropriate for the area of work/ visit.
- x. Following Color scheme for Helmets shall be followed:
  - a. Workmen: Yellow
  - b. Safety staff: Green or white with green band
  - c. Electrician: Red
  - d. Others including visitors: White
  - e. For height workers, special marking on helmets besides indication on Gate Pass/ ID Card
- xi. The subcontractor shall maintain register for issue and receipt of PPEs.
- xii. All the PPEs shall be checked for quality before issue and the same shall be periodically re-checked. The users shall be advised to check the PPEs themselves for any defect before putting on. The defective ones shall be replaced.
- xiii. The Helmets shall have logo or name (abbreviation of agency name permitted) affixed or printed on the front.
- xiv. The body harnesses shall be serial numbered.

## **10. ARRANGEMENT OF INFRASTRUCTURE:**

### **10.1 DRINKING WATER:**

- i. Drinking water shall be provided and maintained at suitable places at different elevations such that minimum quantity of 5 liters is available for each worker during the day.
- ii. Drinking water tank shall be so installed so as to be available within 200 meters of each working area
- iii. Container should be labeled as "Drinking Water" in languages understood by the workers
- iv. Cleaning of the container shall be ensured at least once in a week. Mild cleaning detergents as used for cleaning vessels shall be applied and scrubbers (3M or equivalent) shall be used for removing scales and deposits on the inside surface. The tank shall be thoroughly cleaned with potable water only before it is refilled (also applicable to labor colony).
- v. Suitability of water source for drinking to be tested as per IS10500 at least once in six months.

### **10.2 WASHING FACILITIES:**

- i. In every workplace, adequate and suitable facilities for washing shall be provided and maintained.
- ii. Separate and adequate cleaning facilities shall be provided for the use of male and female workers. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition and dully illuminated for night use.
- iii. Water suitable for washing and not for drinking shall be clearly indicated as "Not for Drinking" in language understood by workers.
- iv. Overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the painters and other workers to wash during the cessation of work.



### 10.3 LATRINES AND URINALS:

- i. Latrines and urinals shall be provided in every work place as indicated in Section A
- ii. Urinals shall also be provided at different elevations.
- iii. They shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times, by appointing designated person.
- iv. Separate facilities shall be provided for the use of male and female worker if any.

### 10.4 PROVISION OF REST SHEDS FOR WORKERS DURING REST PERIOD:

Proper Rest Shed (s) with shelter shall be provided for rest during break so as to accommodate all workers as indicated in Section A

### 10.5 MEDICAL FACILITIES:

#### 10.5.1 GENERAL

- i. Provision of Medical Center, Ambulance etc. shall be as per Section A of this document
- ii. Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste – Management and Handling Rules, 1998)
- iii. Every injury shall be treated, recorded and reported.
- iv. All First Aid injuries shall be recorded as per provided Format
- v. List of qualified first aiders and their contact numbers to be displayed at conspicuous places.

#### 10.5.2 FIRST AIDER/ FIRST AID Box

- i. The first aider along with facilities should be available at a point nearest to the work location wherein majority of the workers are working.
- ii. The subcontractor shall provide necessary first aid facilities as per schedule III of BOCW. At every work place first aid facilities shall be provided and maintained.
- iii. The first aid box shall be kept by first aider who shall always be readily available during the working hours of the work place. His name and contact no to be displayed on the box.
- iv. The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time.
- v. The first aid box shall be distinctly marked with a Green Cross on white background.
- vi. Details of contents of first aid box is given in Annexure J
- vii. A slip of contents shall be pasted on the First Aid Box with following details
- viii. Monthly inspection of First Aid Box shall be carried out by the owner as per provided format
- ix. The subcontractor should conduct periodical first –aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.

#### 10.5.3 HEALTH CHECK UP

The persons engaged at the site shall undergo health check-up as per provided format before induction. In addition, the persons engaged in the following works shall undergo health check-up at least once in a year:



- i. Height workers
- ii. Drivers/crane operators/riggers
- iii. Confined space workers
- iv. Shot/sand blaster
- v. Welding and NDE personnel

#### **10.5.4 HEIGHT PHOBIA/ VERTIGO TEST:**

- i. The persons engaged in working at heights (above 2 meters) to be assessed for Vertigo and associated conditions and recorded as per provided format. Suggested Vertigo Test Procedure is given in Annexure K
- ii. Such workers are to be allowed only on successful completion of test, otherwise shall be allocated ground-based jobs.
- iii. IDs / Height passes shall be issued to such workers, besides special markings on helmets for easy identification.

#### **10.5.5 PROVISION OF CANTEEN FACILITY:**

- i. Canteen facilities shall be provided for the workmen of the project inside the project site where worker strength is 250 or more.
- ii. Proper cleaning and hygienic condition shall be maintained.
- iii. Proper care should be taken to prevent biological contamination.
- iv. Adequate drinking water should be available at canteen.
- v. Fire extinguisher shall be provided inside canteen.
- vi. Regular health check-up and medication to the canteen workers shall be ensured as per applicable regulations.
- vii. Canteen waste to be disposed of in hygienic manner

#### **10.6 PROVISION OF ACCOMMODATION/LABOR COLONY FOR WORKFORCE:**

- i. Proper accommodation for workforce to be provided in line with minimum requirements indicated in Section A
- ii. Labor colony shall be inspected each week by HSE Officer and report submitted to BHEL as per provided format

#### **10.7 PEST CONTROL:**

Regular pest control should be carried out at all offices, mainly laboratories, canteen, labor colony and stores.

#### **10.8 SCRAPYARD:**

- i. In consultation with customer, scrapyard shall be developed to store metal scrap, wooden scrap, waste, hazardous waste.
- ii. Scrap/Waste shall be segregated as Bio-degradable and non-bio-degradable and stored separately.



## 10.9 ILLUMINATION:

- i. The subcontractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations at dark places and during night hours at the work spot as well as at the pre-assembly area.
- ii. Lamp (hand held) shall not be powered by mains supply but either by 24V or dry cells.
- iii. Lamps shall be protected by suitable guards where necessary to prevent danger, in case of breakage of lamp.
- iv. Emergency lighting provision for night work shall be made to minimize danger in case of main supply failure.
- v. Adequate and suitable light shall be provided at all work places & their approaches including passage ways as per IS: 3646 (Part-II).

SUITABLE ILLUMINATION LEVELS FOR VARIOUS AREAS SHALL BE DECIDED BASED ON BROAD  
GUIDELINES INDICATED BELOW:

S. No.	Location	Lux Level (lumens/sqm)
<b>Construction Site</b>		
1	Outdoor areas like store yards, entrance and exit roads	20
2	Platforms	50
3	Entrances, corridors and stairs	100
4	General illumination of work area	150
5	Rough work like fabrication, assembly of major items	150
6	Medium work like assembly of small machined parts	300
7	Fine work like precision assembly, precision measurements etc.	700
8	Sheet metal works	200
9	Electrical and instrument labs	450
<b>Office</b>		
1	Outdoor area like entrance and exit roads	20
2	Entrance halls	150
3	Corridors and lift cars	70
4	Lift landing	150
5	Stairs	100
6	Office rooms, conference rooms, library reading tables	300
7	Drawing table	450
8	Manual telephone exchange	200

- vi. Illuminations shall be inspected on weekly basis as per provided **format** using a calibrated lux meter.



## 11. HSE TRAINING & AWARENESS:

### 11.1 TRAINING PLAN:

- i. All training programs to be carried out in a planned manner. Monthly/ Annual Training Calendar to be submitted to BHEL for approval and shall cover HSE Training requirements of all activities, workers, hazards applicable to the area(s) of work.
- ii. Subcontractor shall nominate workers as per the schedule of specific training plan, failing which, penalty shall be imposed.
- iii. Training records of all workers along with attendance, signatures, faculty details etc. shall be maintained in soft/ hard copy as per provided **formats**.
- iv. Each labor should undergo at least 0.5% of total man-hours worked in HSE training.

### 11.2 HSE INDUCTION TRAINING

- i. All persons entering into project site shall be given HSE induction training by the HSE officer of BHEL /subcontractor before being assigned to work.
- ii. The induction training shall be imparted through audio-visual medium (Classroom specialized training), and shall be minimum of 1 Complete Day.
- iii. Evaluation to be carried out after training and training shall be repeated in case of failure.
- iv. Safety Induction Card shall be printed by Subcontractor and provided to all trained workers. A Safety induction book shall also be printed and issued to each worker after induction training (Format for the same may be provided by BHEL).
- v. Induction training subjects shall include but not limited to:
  - a. Briefing of the Project details.
  - b. Safety objectives and targets.
  - c. Site HSE rules.
  - d. Critical Safety Violations and consequences
  - e. Site HSE hazards and aspects.
  - f. First aid facility.
  - g. Emergency Contact No.
  - h. Incident & Near Miss reporting.
  - i. Fire prevention and emergency response.
  - j. Rules to be followed in the labor colony (if applicable)
  - k. Accident case studies
- vi. General:
  - a. Proper safety wear & gear must be issued to all the workers being registered for the induction (i.e., Shoes/Helmets/Goggles/Leg guard/Apron etc.)
  - b. They must arrive fully dressed in safety wear & gear to attend the induction.
  - c. Any one failing to conform to this safety wear& gear requirement shall not qualify to attend.



- d. On completing attending subcontractor's in-house HSE induction, each employee shall sign an induction training form to declare that he had understood the content and shall abide to follow and comply with safe work practices.
- e. They may only then be qualified to be issued with a personal I.D. card, for access to the work site subject to clearing the medical fitness test.

SAFETY INDUCTED	
Name :	
Date :	
Sign By Trainer :	

ABOVE STICKER SHALL BE PASTED ON HELMET OF WORKERS AFTER SAFETY INDUCTION TRAINING

### 11.3 JOB-SPECIFIC SKILL BASED HSE TRAINING

The contracting agency shall also impart job specific skill-based safety training to all its employees (Minimum one day) on various related safety topics using internal/external safety professionals/consultants as per the matrix given below. Record of such trainings and attendance particulars shall be maintained in a register for ready reference to statutory authorities/engineer-in charge as per provided format.

**TRAINING MATRIX**

Name of topic	Executives	Supervisors	Skilled Workmen	Other Workers
Safety Induction	Y	Y	Y	Y
Accident Causes, factors, cost	Y	Y	Y	-
Industrial hazards & Accident Prevention	Y	Y	Y	-
Investigating, reporting, records	Y	Y	-	-
Personal Protective Equipment	-	Y	Y	Y
Construction Safety & Role of Supervisory personnel	-	Y	-	-
Permit to Work (PTW)	-	Y	Y	y
Statutory Provisions (BOCW Act/Rules, Factories Act 1948 etc.)	Y	Y	y	y
Material handling	-	y	Y	Y
Emergency Management	Y	Y	Y	-
Electrical Safety	-	Y	Y	-
Fire safety	Y	Y	Y	Y
First Aid & CPR (cardio pulmonary resuscitation)	-	Y	Y	Y (Selected)
Safety in Welding & Cutting	-	-	Y	-
Safety Audit	Y	Y	-	-
Safety in Lifting Tools & Tackles	-	Y	Y	y



Safety in Working at height	-	Y	Y	Y
Safety in Confined space work	-	Y	Y	Y
Defensive Driving	-	Y*	Y*	Y*

\*for construction vehicle operators, helpers & crane operators

Y=YES

**Note:**

- i. Subcontractor shall prepare a training plan/ matrix covering all hazards and implement the same after approval of BHEL.
- ii. It is to be ensured that every worker undergoes Job-Specific training once every 3 months.
- iii. Records of training programmes along with attendance shall be maintained by the subcontractor
- iv. Each worker to be issued a Card indicating the types of trainings undergone.

#### 11.4 HSE TOOL-BOX TALK:

- i. HSE tool Box talk shall be conducted by frontline foreman/supervisor of subcontractor to specific work groups prior to the start of work and shall be randomly attended by subcontractor engineers/ officials. The agenda shall consist of the following:
  - a. Details of the job being intended for immediate execution.
  - b. The relevant hazards and risks involved in executing the job and their control and mitigating measures.
  - c. Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
  - d. Recent non-compliances observed.
  - e. Appreciation of good work done by any person.
  - f. Any doubt clearing session at the end.
- ii. Tool box talk to be conducted before start of work in every shift.
- iii. During toolbox talk, visual check-up of workers regarding health, any signs of fatigue, intoxication etc. shall be conducted and any suspected workers to be acted upon.
- iv. Record of Tool box talk shall be maintained as per provided **format**

#### 11.5 TRAINING ON HEIGHT WORK:

- i. Training on height work shall be imparted to all workers working at height by in-house/external faculty at least once every 3 months.
- ii. For Height Workers Separate pass shall be provided by the subcontractor.
- iii. The training shall be of minimum 2-hour duration, through audio-visual medium and followed by evaluation. In case of poor scoring, training shall be repeated.
- iv. The training shall include following topics:
  - a. Proper use of PPEs – safety harness, lanyard, fall arrester, retractable fall arrester, life line, safety nets etc.
  - b. Provision of secondary means of fall protection



- c. Safe climbing through monkey ladders.
- d. Inspection of PPEs.
- e. Medical fitness requirements.
- f. Mock drill on rescue at height.
- g. Dos & Don'ts during height work.
- h. Accident case Studies

## 11.6 RE-INDUCTION TRAINING

The induction training shall be repeated for every worker after at least 1 year and shall be a pre-requisite for renewal of Gate Pass/ ID card.

## 11.7 PENALTY TRAINING

The personnel involved in Safety Violations/ Incidents shall mandatorily undertake penalty training pertaining to the violation/ incident. Penalty training shall be at least half-day duration.

## 11.8 HSE PROMOTION-SIGNAGE, POSTERS, COMPETITION, AWARDS ETC.:

- i. HSE Displays shall be installed as indicated in Section A
- ii. Contracting agencies shall arrange for display of safety hoardings depicting suitable safety cartoons/messages/ cautionary notices at appropriate places of project site to remind the workers to perform their duties safely.
- iii. Apart from safety hoardings, each agency should maintain a safety bulletin board at all their work locations. Such safety bulletin boards should depict the activities being planned for the day, good practices, permit details etc.
- iv. Safety suggestion boxes shall be kept at each subcontractor's office at site for obtaining safety suggestions from the workers. Best suggestions should be implemented and may be rewarded suitably to encourage the workers for safety.
- v. Safety awareness campaigns, competitions, plays, movie shows, songs etc. to be organized for workers at Site and Labor colony from time to time to enhance Safety Awareness

## 11.9 HSE REWARDS & INCENTIVE SCHEME

Subcontractor shall implement a reward & incentive scheme for workers & supervisors displaying adherence to safety principles. Such workers shall be felicitated in a monthly function, attended by Subcontractor top management and BHEL representatives. Suitable gift shall be given to such workers for encouragement.

## 11.10 HSE AWARENESS PROGRAM FOR OFFICIALS:

Subcontractor shall arrange monthly HSE awareness program on different topics including medical awareness for all engineers/ supervisors / officials working at site. This program can be part of progress/ safety review meetings.



## 12. HSE COMMUNICATION AND PARTICIPATION:

### 12.1 HSE INCIDENT REPORTING, INVESTIGATION & CORRECTIVE ACTION:

- i. All incidents (near misses, property damage, first-aid cases, minor, major and fatal incidents) shall be reported to BHEL as they happen immediately through SMS and Hard/Soft copy as per provided format
- ii. All incidents including near miss, minor, major and fatal incidents shall be recorded
- iii. All incidents shall be investigated for Root Causes and corrective actions ensured to prevent recurrence shall be implemented.
- iv. Work shall be put on hold in the area till corrective actions are verified by BHEL
- v. The Root Cause Analyses and Corrective actions taken shall be recorded

### 12.2 HSE EVENT REPORTING:

- i. Important HSE events like HSE training, Medical camp etc. organized at site shall be reported to BHEL site management in detail with photographs for publication in different in-house magazines
- ii. Celebration of important days like National Safety Day, World Environment Day etc. shall also be reported as mentioned above.

### 12.3 MONTHLY HSE REPORTING:

- i. All routine and non-routine HSE activities shall be reported to BHEL on monthly basis by the subcontractor as per provided format. The reporting medium can be hard/soft as per BHEL requirement.
- ii. The period of reporting shall be 25th of the preceding month to 24th of the present month and shall be submitted by the end of the calendar month.
- iii. Report shall include good quality images of HSE Activities

### 12.4 DAILY HSE ACTIVITY REPORTING:

Daily HSE activities shall be reported by subcontractor to BHEL as per provided format

### 12.5 HSE SUGGESTIONS:

All workers and employees shall be encouraged to provide suggestions for improvement in Health, Safety & Environment performance at site. The suggestions shall be recorded in a "Suggestions Register" as per provided format. Suggestions found suitable for implementation shall be implemented and recognition / reward to be given to the submitter.

Suggestion Register to be placed at Site and Labor Colony and shall be reviewed on periodic basis



## 12.6 CLIENT COMMUNICATION:

All HSE related communication from BHEL, customer / external statutory and regulatory agencies to be handled on priority. Same to be recorded and issues to be resolved in expeditious manner

## 13. SAFETY DURING WORK EXECUTION:

Safety during work execution shall be ensured by following appropriate Safety Rules, providing adequate resources, deploying competent and trained manpower, regular training & inspection and non-conformity resolution. Main aspects are indicated as under:

### 13.1 OPERATIONAL CONTROL PROCEDURES:

In order to reduce the risk associated with hazardous activities, applicable OCPs (Operational control procedures) will be followed by subcontractor as per BHEL instructions, outcomes of Hazard Analysis & other requirements. This will be done as part of normal scope of work. Illustrative list of reference OCPs is given below.

TABLE 13.1 ILLUSTRATIVE LIST OF REFERENCE OCPs

No.	Topic	No.	Topic	No.	Topic
0	General Safety	22	Steam blowing	44	Material preservation
1	Handling of chemicals	23	Working in confined area	45	Electro-resistance heating
2	Electrical safety	24	Operation of passenger lift, material hoists & cages	46	Blasting
3	Energy conservation	25	Vehicle/ Crane maintenance	47	Transformer charging
4	Welding and gas cutting operation	26	Radiography	48	Handling of battery system
5	Fire safety	27	Waste disposal	49	DG set
6	Use of hand tools	28	Handling & storage of mineral wool	50	Sanitary maintenance
7	First aid	29	Working at night	51	Piling rig operation
8	Food safety at canteen	30	Computer operation	52	Passivation
9	Use of cranes	31	Storage in open yard	53	EDTA Cleaning
10	Storage and handling of gas cylinders	32	Drilling, reaming and grinding(machining)	54	Chemical cleaning of Pre boiler system
11	Manual arc welding	33	Stress relieving	55	Boiler Light up
12	Use of helmets	34	Hydraulic test	56	Rolling and Synchronization
13	Good house keeping	35	Trial run of rotary equipment	57	Loading of Unit



<b>14</b>	Safe excavation	<b>36</b>	Batching	<b>58</b>	Air compressor
<b>15</b>	Working at height	<b>37</b>	Cable laying/tray work	<b>59</b>	Hydra Operation
<b>16</b>	Filling of hydrogen in cylinder	<b>38</b>	Spray insulation	<b>60</b>	Duct Pre-assembly
<b>17</b>	Illumination	<b>39</b>	Compressor operation		Resumption of construction activities after lockdown and prevention of coronavirus infection during site operations
<b>18</b>	Handling and erection of heavy metals	<b>40</b>	Gas distribution test	<b>61</b>	
<b>19</b>	Acid cleaning	<b>41</b>	Cleaning of Hot well / Deaerator	<b>61A</b>	Prevention of Covid-19 infection in labour colony
<b>20</b>	Oil flushing	<b>42</b>	Electrical maintenance		
<b>21</b>	Alkali boil out	<b>43</b>	O&M of control of AC plant & system	<b>62</b>	Truss/ Structure fit-up and alignment

- a. The reference OCPs shall be suitably modified by subcontractor as per specific requirements to control the hazards.
- b. In case any other OCP is found to be applicable during the execution of work at site, then subcontractor will prepare and follow those as well.

### 13.2 WORK PERMIT SYSTEM:

- i. The following activities shall be carried out by the subcontractor strictly after obtaining Permit to Work from BHEL
  - a) Height working
  - b) Hot working
  - c) Confined space Work
  - d) Excavation more than 2-meter depth
  - e) Radiography
  - f) Heavy / Complex / Critical Lifting Activity
  - g) Night / Holiday Work
  - h) Material Loading / Unloading
  - i) Grating, Safety Net, Safety Facility Removal
  - j) Live Electrical Maintenance etc. - Lockout / Tagout
  - k) Beam / truss/ duct/ structure alignment
- ii. The Work Permit Formats shall be provided by BHEL at Site. It is the responsibility of the subcontractor to ensure their availability
- iii. The above list is not exhaustive. BHEL reserves right to introduce additional Permits or modify requirements for usage of existing Permits. The conditions for using the Permit are specified in the Format (General Requirements).
- iv. Where customer is having separate Work Permit System the same shall be followed in conjunction / merged to ensure all activities and checks are covered in all systems.
- v. Details of working Group to be attached along with work permit request.



- vi. All the Permits along with JSA/HIRA must be initiated by Agency Execution Team
- vii. Permit applicant shall apply for work permit of particular work activity at particular location before starting of the work with Job Hazard Analysis.
- viii. All Permit signatories (including subcontractor's package in-charge and HSE Officer) shall physically visit the work area and check that all the safety control measures necessary for the activity are in place. Only then the permit shall be issued.
- ix. Signatory shall physically visit the area of work and ensure all required safeguards before signing the Permit
- x. Signatory shall periodically visit the area to confirm the availability of required safeguards throughout the currency of the permit
- xi. In case any Permit requirement is not available, work will be stopped till it is made available
- xii. Permit holder shall implement and maintain all control measures during the period of permit. The permit will be closed after completion of the work.
- xiii. Online Work Permit System shall be used whenever provided by BHEL, otherwise hard copy shall be used

### 13.3 ACTIVITY-SPECIFIC PRECAUTIONS/ CONTROLS

Detailed HSE precautions for various activities undertaken at Site by the subcontractors are specified in **Annexure I**. Same are to be ensured by the Sub-subcontractor while carrying out respective activities at Site

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## 14. ENVIRONMENTAL CONTROL & SOCIAL RESPONSIBILITY

- i. Environment protection has always been given prime importance by BHEL. Environmental damage is a major concern of the principal subcontractor and every effort shall be made, to have effective control measures in place to avoid pollution of Air, Water and Land and associated life. Banned substances like asbestos and Chlorofluorocarbons such as carbon tetrachloride and trichloroethylene shall not be used. Waste disposal shall be done in accordance with the guidelines laid down in the project specification.
- ii. Any chemical including solvents and paints, required for construction shall be stored in designated bonded areas around the site as per Material Safety Data Sheet (MSDS).
- iii. In the event of any spillage, the principle is to recover as much material as possible before it enters drainage system and to take all possible action to prevent spilled materials from running off the site. The subcontractor shall use appropriate MSDS for clean-up technique
- iv. All subcontractors shall be responsible for the cleanliness of their own areas
- v. Regular dust suppression using sprinklers shall be carried out in respective area
- vi. The subcontractors shall ensure that noise levels generated by plant or machinery are as low as reasonably practicable. Where the subcontractor anticipates the generation of excessive noise levels from his operations the subcontractor shall inform to Construction Manager of BHEL accordingly so that reasonable &practicable precautions can be taken to protect other persons who may be affected.
- vii. It is imperative on the part of the subcontractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, enhancing good relation with local populace etc.
- viii. The subcontractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.



## 15. HOUSEKEEPING

- i. Keeping the work area and access roads clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the subcontractor. Such cleanings have to be done by subcontractor within quoted rate, on daily basis.
- ii. If such activity is not carried out by subcontractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost along with BHEL overheads will be deducted from subcontractor's bill. Such decisions of BHEL shall be binding on the subcontractor
- iii. Dedicated Housekeeping gangs shall be deployed, who shall be provided all required PPEs and safety training
- iv. Mass housekeeping shall be carried out for half a day in a week
- v. Proper housekeeping to be maintained at work place and the following are to be taken care of on daily basis.
- vi. All surplus earth and debris are removed/disposed off from the working areas to identified locations.
- vii. Unused/Surplus cables, steel items and steel scrap lying scattered at different places/elevation within the working areas are removed to identified locations.
- viii. All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from workplace to identified locations.
- ix. Sufficient waste bins shall be provided at different work places for easy collection of scrap/waste. Scrap chute shall be installed to remove scrap from high locations.
- x. Access and egress (stair case, gangways, ladders etc.) path should be free from all scrap and other hindrances.
- xi. Workmen shall be educated through tool box talk about the importance of housekeeping and encourage not to litter.
- xii. Labor camp area shall be kept clear and materials like pipes, steel, sand, concrete, chips and bricks, etc. shall not be allowed in the camp to obstruct free movement of men and machineries.
- xiii. Fabricated steel structures, pipes & piping materials shall be stacked properly.
- xiv. No parking of trucks/trolleys, cranes and trailers etc. shall be allowed in the camp, which may obstruct the traffic movement as well as below LT/HT power line.
- xv. Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas.

## 16. WASTE MANAGEMENT

- i. Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained.
- ii. Details of E-Waste, Hazardous Waste, biomedical waste etc. and their disposal plan, shall be submitted to BHEL every 6 months as per provided **formats**.



## 16.1 BINS AT WORK PLACE

- i. Sufficient rubbish bins shall be provided close to workplaces.
- ii. Bins should be painted yellow and numbered.
- iii. Sufficient nos. of drip trays shall be provided to collect oil and grease.
- iv. Sufficient qty. of broomsticks with handle shall be provided.
- v. Adequate strength of employees should be deployed to ensure daily monitoring and service for waste management.

## 16.2 STORAGE AND COLLECTION

- i. Different types of rubbish/waste should be collected and stored separately.
- ii. Paper, oily rags, smoking material, flammable, metal pieces should be collected in separate bins with close fitting lids.
- iii. Rubbish should not be left or allowed to accumulate on construction and other work places.
- iv. Do not burn construction rubbish near working site.

## 16.3 SEGREGATION

- i. Earmark the scrap area for different types of waste.
- ii. Store wastes away from building.
- iii. Oil spill absorbed by non-combustible absorbent should be kept in separate bin.
- iv. Clinical and first aid waste stored and incinerated separately.

## 16.4 DISPOSAL

- i. Sufficient containers and scrap disposal area should be allocated.
- ii. All scrap bin and containers should be conveniently located.
- iii. Provide self-closing containers for flammable/spontaneously combustible material.
- iv. Keep drainage channels free from choking.
- v. Make schedule for collection and disposal of waste.

## 16.5 WARNING AND SIGNS

- i. Appropriate sign to be displayed at scrap storage area
- ii. No toxic, corrosive or flammable substance to be discarded into public sewage system.
- iii. Waste disposal shall be in accordance with best practice.
- iv. Comply with all the requirements of Pollution Control Board (PCB) for storage and disposal of hazardous waste.

# 17. TRAFFIC MANAGEMENT SYSTEM

## 17.1 SAFE WORKPLACE TRANSPORT SYSTEM

- i. Traffic routes in a work place shall be suitable for the persons or vehicles using them. This shall be sufficient in number and of sufficient size. This shall reflect the suitability of traffic routes for vehicles and pedestrians.



- ii. Where vehicles and pedestrians use the same traffic routes there shall be sufficient space between them. Where necessary all traffic routes must be suitably indicated. Pedestrians or vehicles must be able to use traffic routes without endangering those at work. There must be sufficient separation of traffic routes from doors, gates and pedestrian traffic routes.
- iii. For internal traffic, lines marked on roads / access routes and between buildings shall clearly indicate where vehicles are to pass.
- iv. Temporary obstacles shall be brought to the attention of drivers by warning signs or hazard cones.
- v. Speed limits shall be clearly displayed for each kind of vehicle.
- vi. Speed ramps preceded by a warning signs or marker are necessary.
- vii. The traffic route should be wide enough to allow vehicles to pass and re-pass oncoming or parked traffic and it may be advisable to introduce on-way system or parking restrictions.
- viii. Safest route shall be provided between places where vehicles have to call or deliver.
- ix. Avoid vulnerable areas/items such as fuel or chemicals tanks or pipes, open or unprotected edges and structures likely to collapse
- x. Safe areas shall be provided for loading and unloading.
- xi. Avoid sharp or blind bends. If this is not possible hazards should be indicated e.g. blind corner.
- xii. Ensure road crossings are minimum and clearly signed.
- xiii. Entrance and gateways shall be wide enough to accommodate a second vehicle without causing obstruction.
- xiv. Set sensible speed limits which are clearly sign posted.
- xv. Where necessary ramps should be used to retard speed. This shall be preceded by a warning sign or mark on the road.
- xvi. Forklift trucks shall not pass over road hump unless of a type capable of doing so.
- xvii. Overhead electric cable, pipes containing flammable hazardous chemical shall be shielded by using goal posts height gauge posts or barriers.
- xviii. Road traffic signs shall be provided on prominent locations for prevention of incidents and hazards and for quick guidance and warning to employees and public. Safety signs shall be displayed as per the project working requirement and guideline of the state in which project is done. Vehicles hired or used shall not be parked within the 15m radius of any working area. Any vehicle, that is required to be at the immediate/near the vicinity, shall be approved by the person in-charge of the site.

## 17.2 TRAFFIC ROUTE FOR PEDESTRIANS

- i. Where traffic routes are used by both pedestrians and vehicles road shall be wide enough to allow vehicles and pedestrians safely.
- ii. Separate routes shall be provided for pedestrians to keep them away from vehicles. Provide suitable barriers/guard at entrances/exit and the corners or buildings.
- iii. Where pedestrian and vehicle routes cross, appropriate crossing shall be provided.



- iv. Where crowd is likely to use roadway e.g. at the end of shift, stop vehicles from using them at such times.
- v. Provide high visibility clothing for people permitted in delivery area.

### 17.3 WORK VEHICLE

Work vehicle shall be as safe stable efficient and roadworthy as private vehicles on public roads. Site management shall ensure that drivers are suitably trained. All vehicle e.g. heavy motor vehicle forklift trucks dump trucks mobile cranes shall ensure that the work equipment conforms to the following:

- i. A high level of stability.
- ii. A safe means of access/egress.
- iii. Suitable and effective service and parking brakes.
- iv. Windscreens with wipers and external mirrors giving optimum all round visibility.
- v. Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
- vi. Provision of seat belts.
- vii. Guards on dangerous parts.
- viii. Driver protection - to prevent injury from overturning and from falling objects/materials.
- ix. Driver protection from adverse weather.
- x. No vehicle shall be parked below HT/LT power lines.
- xi. Valid Pollution Under Control certification for all vehicles
- xii. Wheel stopper shall be use during the parking of vehicle
- xiii. Helper to be deployed in each vehicle as per site requirement.

### 17.4 DAILY CHECK BY DRIVER

- 1. There should also be daily safety checks containing below mentioned points by the driver before the vehicle is used.

Brakes	Mirrors	Warning signals
Tires	Windscreen waters	Specific safety systems i.e. controls & interlocks
Steering	Wipers	

- 2. Management should ensure that drivers carry out these checks.

### 17.5 TRANSPORTATION OF PERSONNEL AND MATERIALS BY VEHICLES

- i. All drivers shall hold a valid driving License for the class of vehicle to be driven and be registered as an authorized BHEL driver with the Administration Department.
- ii. Securing of the load shall be by established and approved methods, i.e. chains with patented tightening equipment for steel/heavy loads. Sharp corners on loads shall be avoided when employing ropes for securing.
- iii. All overhangs shall be made clearly visible and restricted to acceptable limits
- iv. Load shall be checked before moving off and after traveling a suitable distance.
- v. On no account is construction site to be blocked by parked vehicles Drivers of vehicles shall only stop or park in the areas designate by the stringing foreman.



- vi. Warning signs shall be displayed during transportation of material.
- vii. All vehicles used by BHEL shall be in worthy condition and in conformance to the Land Transport requirement.
- viii. Wheel stopper shall be use during the parking of vehicle
- ix. Helper to be deployed in each vehicle as per site requirement.

## 17.6 MAINTENANCE

All Vehicles used for transportation of man and material shall undergo scheduled inspections on frequent intervals to secure safe operation. Such inspections shall be conducted in particular for steering, brakes, lights, horn, doors etc. Site management shall ensure that work equipment is maintained in an efficient, working order and in good repair. Inspections and services carried out at regular intervals of time and or mileage. No maintenance shall be carried below HT/LT power lines.

## 18. EMERGENCY PREPAREDNESS AND RESPONSE

- i. Emergency preparedness and response capability of site shall be developed as per Emergency Preparedness and Response plan issued by BHEL
- ii. Availability of adequate number of first aiders and fire warden shall be ensured with BHEL and its subcontractors
- iii. All the subcontractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Subcontractor should nominate his supervisor to coordinate and implement the safety measures.
- iv. Assembly point shall be earmarked and access to the same from different location shall be shown
- v. Fire exit shall be identified and pathway shall be clear for emergency escape.
- vi. Appropriate type and number of fire extinguisher shall be deployed as per Fire extinguisher deployment plan and validity shall be ensured periodically through inspection
- vii. Adequate number of first aid boxes shall be strategically placed at different work places to cater emergency need. Holder of the first aid box shall be identified on the box itself who will have the responsibility to maintain the same.
- viii. First aid center shall be developed at site with trained medical personnel and ambulance
- ix. Emergency contact numbers (format given in EPRP) of the site shall be displayed at prominent locations.
- x. Tie up with fire brigade shall be done in case customer is not having fire station.
- xi. Tie up with hospital shall be done in case customer is not having hospital.
- xii. Disaster Management group shall be formed at site
- xiii. Mock drill shall be arranged at regular intervals. Monthly report of the above to be given to BHEL HSE Officer as per prescribed BHEL formats
- xiv. Mock drill shall be conducted on different emergencies periodically to find out gaps in emergency preparedness and taking necessary corrective action



## 19. HSE INSPECTION

Inspection on HSE for different activities being carried out at site shall be done to ensure compliance to HSE requirements. The subcontractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test as applicable, to enable inspection agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.

Online/ App-based HSE Inspection system shall be used for inspection whenever provided by BHEL otherwise Hard-copy based system shall continue

	<input type="checkbox"/> <b>OK</b>	<input type="checkbox"/> <b>NOT OK</b>
Contractor Name:		
Equipment Identification No :		
Inspection Date :		
Next Inspection Date :		
Inspected By :		

**Every Inspected Equipment shall display above sticker**

### 19.1 INSPECTION PLAN

Subcontractor shall prepare an inspection plan covering all areas/ activities/ equipment/ hazards and implement the same after getting approval of BHEL. Responsibility to ensure coverage of all areas/ activities rests with the subcontractor.

All Inspections shall be witnessed by BHEL – only then they shall be considered as valid

### 19.2 INSPECTION REPORTS

Monthly inspection reports as per plan shall be submitted to BHEL HSE Head

### 19.3 NON-CONFORMANCES

Any non-conformances identified during inspection observed shall be addressed on priority.

The responsibility of resolution shall rest with the Subcontractor Site In-charge

In case immediate closure of non-conformities is not possible:

- work to be halted in the area
- non-conformance to be generated and submitted to responsible person and BHEL
- non-conformance to be resolved through responsible agency / person

Only after closure of non-conformances, work to be allowed to resume

### 19.4 DAILY HSE CHECKS

Both the Site Supervisors and HSE Officer of Subcontractor are to conduct daily site Safety inspection around work activities and premises to ensure that work methods and the sites



are maintained to an acceptable standard. The following are to form the common subjects of a daily safety inspection:

- i. Personal Safety wears & gear compliance.
- ii. Complying with site safety rules and permit-to-work (PTW).
- iii. Positions and postures of workers.
- iv. Use of tools and equipment etc. by the workers.

The inspection should be carried out just when work starts in beginning of the day, during peak activities period of the day and just before the day's work ends.

## 19.5 INDICATIVE LIST OF INSPECTIONS AND PERIODICITIES

Indicative list & periodicity of Inspections is given as under. It is the responsibility of the subcontractor to develop an inspection plan covering all areas & activities in the scope.

SL. No.	Format Name	Frequency of check (if applicable)
01	Inspection of First Aid Box	Weekly
02	Inspection of PPE	Weekly
03	Inspection of T&Ps	Monthly
04	Inspection of Cranes	Monthly
05	Inspection of Winches	Monthly
06	Inspection on Height Working	Weekly
07	Inspection on Welding & Gas Cutting	Monthly
08	Inspection on Electrical Installation	Monthly
09	Inspection on Elevator	Weekly
10	Inspection of Excavation	Weekly
11	Inspection of Labor Colony	Monthly
12	Inspection of Illumination Levels	Weekly

The checklists shall be provided by BHEL at Site. It is the responsibility of the subcontractor to ensure their availability before start of work

### 19.5.1 INSPECTION OF PPE

- i. PPEs shall be inspected by HSE officer at random once in a week as per provided **format** for its compliance to standard and compliance to use and any adverse observation shall be recorded in the PPE register.
- ii. The applicable PPEs for carrying out particular activities are listed below.

### 19.5.2 INSPECTION OF TOOLS & PLANTS (T&Ps)

- i. A master list of T&Ps shall be maintained by each subcontractor in provided **format**.
- ii. All T&Ps being used at site shall be inspected by HSE officer once in a month as per provided **format** for its healthiness and maintenance.
- iii. The T&Ps which require third party inspection shall be checked for its validity during inspection. The third-party test certificate should be accompanied with a copy of the concerned competent person's valid qualification record.



- iv. BHEL shall be given advance intimation of Third-Party Inspection. BHEL shall associate with Inspection as per discretion.
- v. The validity of T&P shall be monitored as per provided **format**

### 19.5.3 INSPECTION OF CRANES AND WINCHES

- i. Cranes and winches shall be inspected by the operator through a daily checklist for its safe condition (as provided by the equipment manufacturer) before first use of the day.
- ii. Cranes and Winches shall be inspected by HSE officer once in a month as per provided **format** for healthiness, maintenance and validity of third-party inspection.
- iii. The date of third-party inspection and next due date shall be painted on cranes and winches.
- iv. The operators/drivers shall be authorized by sub-subcontractor based on their competency and experience and shall carry the I-card.
- v. The operator should be above 18 years of age and should be in possession of driving license of HMV man & goods), vision test certificate and should have minimum qualification so that he can read the instructions and check list.

### 19.5.4 INSPECTION OF HEIGHT WORKING

- i. Any activity carried out at more than 2 m height is classified as height work.
- ii. Inspection of height working shall be conducted daily by Supervisors before start of work to ensure safe working condition including provision of
  - a. Fall arrestor
  - b. Lifelines – connected to rigid & independent structure
  - c. Safety nets deployed below all height work activities
  - d. Fencing and barricading
  - e. Warning signage
  - f. Covering of opening
  - g. Proper scaffolding with access and egress.
  - h. Illumination
- iii. For full duration of height work, constant supervision to be maintained by dedicated HSE personnel
- iv. Inspection on height working shall be conducted once in a week by HSE officer as per provided **format**.
- v. Medical fitness of height worker shall be ensured.
- vi. Height working shall not be allowed during adverse weather.

### 19.5.5 INSPECTION OF WELDING AND GAS CUTTING OPERATION

- i. Supervisor shall ensure that no flammable items are available in near vicinity during welding and gas cutting activity.
- ii. Gas cylinders shall be kept upright.
- iii. Use of Flash back arrestor shall be ensured at both ends.



- iv. Inspection during welding and gas cutting operations shall be carried out by HSE officer once a month as per provided **format**.
- v. Use of fire blanket to be ensured to avoid falling of splatters during welding or gas cutting operation at height.
- vi. Availability of fire extinguisher at vicinity shall be ensured.

#### 19.5.6 INSPECTION OF ELECTRICAL INSTALLATION / APPLIANCES

- i. Ensure proper earthing in electrical installation
- ii. Use ELCB at electrical booth
- iii. Electrical installation shall be properly covered at top where required
- iv. Use appropriate PPEs while working
- v. Use portable electrical light < 24 V in confined space and potentially wet area.
- vi. Inspection shall be carried out as per provided **format**.

#### 19.5.7 INSPECTION OF ELEVATOR

- i. Elevators shall be inspected by concerned supervisors once in a week as per provided **format**
- ii. All elevators shall be inspected by competent person and validity shall be ensured.
- iii. The date of third-party inspection and next due date shall be painted on elevator.

#### 19.5.8 INSPECTION OF EXCAVATION

Excavation activities shall be inspected as per provided **format**

#### 19.5.9 INTERNAL/ EXTERNAL HSE AUDITS/INSPECTIONS

- i. All non-conformities and observations on HSE identified during internal or external HSE audit shall be disposed of by site in a time bound manner and reported back the implementation status.
- ii. Corrective action and Preventive action on HSE issues raised by certification body issued by BHEL shall be implemented by site and reported to Site management.

### 20. TERMS AND DEFINITIONS:

#### 1. Incident

Work- related or natural event(s) in which an injury, or ill health (regardless of severity), damage to property or fatality occurred, or could have occurred.

#### 2. Near Miss:

An incident where no ill health, injury, damage or other loss occurs, but it had a potential to cause, is referred to as “Near-Miss”.

#### 3. Man-Hours Worked:

The total number of man hours worked by all employees including subcontractors working in the premises. It includes managerial, supervisory, professional, technical, clerical and other workers including contract labors. Man-hours worked shall be calculated from the payroll or time clock recorded including overtime. When this is not feasible, the same shall be estimated by multiplying the total man-days worked.



period covered by the number of hours worked per day. The total number of workdays for a period is the sum of the number of men at work on each day of period. If the daily hours vary from department to department separate estimate shall be made for each department and the result added together.

**4. First Aid Cases:**

First aids are not essentially all reportable cases, where the injured person is given medical treatment and discharged immediately for reporting on duty, without counting any lost time.

**5. Lost Time Injury:**

Any work injury which renders the injured person unable to perform his regular job or an alternative restricted work assignment on the next scheduled work day after the day on which the injury occurred.

**6. Medical Cases:**

Medical cases come under non-reportable cases, where owing to illness or other reason the employee was absent from work and seeks Medical treatment.

**7. Type of Incidents & Their Reporting:**

The three categories of Incident are as follows:

**8. Non-Reportable Cases:**

An incident, where the injured person is given medical help and discharged for work without counting any lost time.

**9. Reportable Cases:**

In this case the injured person is disable for 48 hours or more and is not able to perform his duty.

**10. Injury Cases:**

These are covered under the heading of non-reportable cases. In these cases, the incident caused injury to the person, but he still continues his duty.

**11. Total Reportable Frequency Rate**

Frequency rate is the number of Reportable Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula read as:

Number of Reportable LTI x 1,000,000/ Total Man Hours Worked

**12. Severity Rate:**

Severity rate is the Number of days lost due to Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula reads as:

Days lost due to LTI x 1,000,000/ Total Man Hours Worked

**13. Incidence Rate:**

Incidence Rate is the Number of LTI per one thousand manpower deployed. Mathematically, the formula reads as:

Number of LTIx1000/Average number of manpower deployed



**14. HIRA:**

Hazard Identification and Risk Assessment (HIRA) is a process of identifying Hazards in work area and then assessing them properly

**15. Method Statement:**

A method statement is prepared by the Execution/ Engineering Department detailing the steps, equipment, competencies and safety precautions required for carrying out any activity

**16. Job Safety Analysis:**

A job safety analysis (JSA) is a procedure which helps integrate accepted safety and health principles and practices into a particular task or job operation. In a JSA, each basic step of the job is to identify potential hazards and to recommend the safest way to do the job. Other terms used to describe this procedure are job hazard analysis (JHA) and job hazard breakdown.

**17. Safety Walk:**

It's conducted periodically by an official - it's a walk through a portion or whole of a site as a HSE officer who notes down HSE observations, speak to concerned workmen and supervisor on observation, get the same corrected with personal follow up- this sends out a strong message on Management's commitment to safety.

**18. Heavy & Complex Lifting:**

A heavy and complex lifting activity includes:

1. Lifting above 20 Tons
2. Tandem Lifting using multiple cranes

Total load exceeding 75% of capacity of crane. Depending up the condition of cranes, hydra cranes, winch machines & other lifting accessories

3. Lift of unusual difficulty or geometry or rigging
4. Lift over operating units
5. Any other lift as decided by site HSE / Erection

**19. Safety Committee:**

As per the BOCW, Safety Committee shall be constituted if there are more than five hundred or more construction workers are employed at any site. As per the Factories Act, 1948 it is for 250 workers. It shall be represented by equal number of representatives of employer and construction workers.

**20. Night Work:**

Work conducted after sunset when only a fraction of total manpower is available





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## ANNEXURES



## ANNEXURE A

### Medical Centre & Ambulance



## A. Medical Centre

1. Paramedical staff
  - a. When < 500 workers, 1 Trained Male Nurse (round the clock deployment)
  - b. When >=500 workers\*:
    - i. Registered Medical Practitioner (Qualified MBBS) to be deployed for at least 8 hours in a day, 5 days per week
    - ii. 2 Trained Male Nurses (round the clock deployment)
2. All articles as per Schedule IV of BOCW Central Rules, 1998 to be made available in the Medical Centre (given under for convenience)
3. Basic Facilities/ Requirements to be provided as per location eg. Refrigerator, Air Conditioner, Anti Venom Serums etc.
4. Tie-ups with speciality hospitals to be ensured for referring serious patients

\* In case the number of workers is envisaged to exceed 500, a medical practitioner is to be engaged.

**SCHEDULE IV (BOCW CENTRAL RULES, 1998) ARTICLES FOR AMBULANCE ROOM  
[SEE RULE 226 (C)]**

- i. A glazed sink with hot and cold water always available.
- ii. A table with a smooth top at least 180 cm x 105 cm.
- iii. Means for sterilising instruments.
- iv. A couch.
- v. Two stretchers.
- vi. Two buckets or containers with close fitting lids.
- vii. Two rubber hot water bags
- viii. A kettle and spirit stove or other suitable means of boiling water.
- ix. Twelve plain wooden splints 900 cm x 100 cm x 6 cm.
- x. Twelve plain wooden splints 350 cm x 75 cm x 6 cm.
- xi. Six plain wooden splints 250 cm x 50 cm x 12 cm.
- xii. Six woollen blankets.
- xiii. Three pairs of artery forceps.
- xiv. One bottle of spiritus annemia aremations (120 ml).
- xv. Smelling salt (60 gm).
- xvi. Two medium size sponges.
- xvii. Six hand towels.
- xviii. Four kidney trays.
- xix. Four cakes of toilet, preferably antiseptic soap.
- xx. Two glass tumblers and tow wine glasses.
- xxi. Two clinical thermometers.
- xxii. Two tea spoons.
- xxiii. Two graduated (120 ml) measuring glasses.
- xxiv. Two minimum measuring glasses.
- xxv. One wash bottle (1000 cc) for washing eyes.
- xxvi. one bottle (one litre) carbolic lotion 1 to 20.
- xxvii. Three chairs.
- xxviii. One screen.
- xxix. One electric hand torch.
- xxx. Four first-aid boxes or cupboards stocked to the standards prescribed in
- xxxi. An adequate supply of tetanus toxide.
- xxxii. Injections—morphia, pethidine, atropine, adrenaline, coramine, novocaine (6 each).
- xxxiii. Cramine liquid (60 ml).
- xxxiv. Tablets—antihistaminic antispasmodic (25 each).
- xxxv. Syringes with needles—2 cc, 5 cc, 10 cc and 500 cc.



- xxxvi. Three surgical scissors.
- xxxvii. Two needle holders, big and small.
- xxxviii. Suturing needles and materials.
- xxxix. Three dissecting forceps
  - xl. Three dressing forceps
  - xli. Three scalpels.
- xlii. One stethoscope and a B. P. apparatus.
- xlii. Rubber bandage—pressure bandage.
- xliv. Oxygen cylinder with necessary attachments.
- xlv. Atropine eye ointments.
- xlvi. I. V. Fluids and sets 10 nos.
- xlvii. Suitable, foot operated, covered, refuse containers.
- xlviii. Adequate number of sterilised, paired, latex hand gloves.

## B. Ambulance

1. When number of workers is <500:  
If the distance to a major hospital capable of handling critical injuries expected at Site is <= 50 KM from Site, then 1 BLS (Basic Life Support)/ Type B Ambulance otherwise ALS\* (Advanced Life Support)/ Type D Ambulance
2. If no. of workers increases to >2000 workers one additional BLS Ambulance to be deployed
3. Minimum Articles as per Schedule V of BOCW Central Rules to be ensured in each Ambulance. (given under for convenience)

\*Final call to be taken at Site in consultation with all the contractors

**SCHEDULE V (BOCW CENTRAL RULES, 1998)**  
**CONTENTS OF AMBULANCE VAN OR CARRIAGE**  
**[SEE RULE 227]**

The Ambulance Van shall have equipment prescribed as under:

- a) General—a portable stretcher with folding and adjusting devices with the Head of the stretcher capable of being tilted upward. Fixed suction unit with equipment. Fixed oxygen supply with equipment. Pillow with case, sheets, blankets, towels, emergency bag, bed pan, urinal glass.
- b) Safety Equipment-Flares with life of three thousand minutes, floor lights, flash lights, fire extinguishers (dry power type), insulated guntlets.
- c) Emergency Care Equipment—
  - i. **Resuscitation**—Portable suction unit, portable oxygen unit, bag valve mask, hand operated artificial ventilation unit, airways, mouth gag tracheostomy adapters, short spine board, I.V. FLUIDS with administration unit, B. P. manometer cuff stethoscope.
  - ii. **Immobilisation**—Long and short padded boards, wire ladder splints, triangular bandage—long and short spine boards.
  - iii. **Dressing**—Gauze pads—100 m x 100 mm universal dressing 250 x 1000 mm, roll of aluminium foils—soft roller bandages 150 mm x 5 mm yards adhesive tape in 75 mm roll safety pins, bandage sheets, burn sheets.
  - iv. **Poisoning**—Syrup of Ipecac, activated charcoal pre packeted dose, snake bit kit, drinking water.
  - v. **Emergency Medicines**—As per requirement (under the advice of construction Medical Officer).



## ANNEXURE A.1

Sample calculation for deduction of operational cost of facilities

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## Annexure A.1

### Cost Calculation Methodology of Operation of Facilities (Data is indicative only)

(Period of 48 months is considered - shall be on actual basis)

#### A. Project Info:

Total time of Project	48 months
Project cost	1000 Crore
No. of packages	10 (A1-A10)

#### B. Item-wise Calculation:

Item	Nos.	Rate	Unit	Amount
Ambulance with Driver	2		Monthly/Unit	170000
Nurse/First aider	2 X 2 shifts	15000	Per month	30000
Training center one time cost	1	100000	Once	100000
Medical center one time cost	1	200000	Once	200000
Medicines at medical center	1	10000	Monthly	10000
Dust suppression water tank	2	2000	Monthly	4000
Doctor	1	70000	Monthly	70000
Cleaning staff	1	12000	Monthly	12000
Recurring monthly expenditure				296000
Total one-time expenditure				300000

#### C. Package-wise Deduction Plan for a period of 48 months

Period (In Months)	6	36	6
	For 1-6 months	For 7-42 months	For 43-48 months
Cost to be incurred from contractors	7%	81%	12%
	1.17% per month	2.25% per month	2.00% per month

## D. Calculation For One-Time Running Cost

Packages/ Contracts	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	
Contract Values (in Thousands)	100000	250000	2000000	200000	500000	1500000	1000000	1000000	250000	200000	7000000
Share of common facilities one time running cost (in Thousands)	4	11	86	9	21	64	43	43	11	9	Individual Pkg value X Total one time running cost / All Pkg award values
Timeline of work	1-6	1-8	2-48	6-36	7-15	10-48	6-48	7-40	40-48	41-48	
Month Count of work	6	8	47	31	9	39	43	34	9	8	
Deduction per month (in Thousands)	1	1	2	0	2	2	1	1	1	Total of One time Running cost (in thousands)	% deduction share of one time running cost per month
Month No.										Nos. of active packages in month	
1	1	1								2	1%
2	1	1	2							4	1%
3	1	1	2							4	1%
4	1	1	2							4	1%
5	1	1	2							4	1%
6	1	1	2	0		1				5	2%
7		1	2	0	2		1	1		8	3%
8		1	2	0	2		1	1		8	3%
9			2	0	2		1	1		7	2%
10			2	0	2	2	1	1		8	3%
11			2	0	2	2	1	1		8	3%
12			2	0	2	2	1	1		8	3%
13			2	0	2	2	1	1		8	3%
14			2	0	2	2	1	1		8	3%
15			2	0	2	2	1	1		8	3%
16			2	0		2	1	1		6	2%
17			2	0		2	1	1		6	2%
18			2	0		2	1	1		6	2%
19			2	0		2	1	1		6	2%
20			2	0		2	1	1		6	2%
21			2	0		2	1	1		6	2%
22			2	0		2	1	1		6	2%
23			2	0		2	1	1		6	2%
24			2	0		2	1	1		6	2%
25			2	0		2	1	1		6	2%
26			2	0		2	1	1		6	2%
27			2	0		2	1	1		6	2%
28			2	0		2	1	1		6	2%
29			2	0		2	1	1		6	2%
30			2	0		2	1	1		6	2%
31			2	0		2	1	1		6	2%
32			2	0		2	1	1		6	2%
33			2	0		2	1	1		6	2%
34			2	0		2	1	1		6	2%
35			2	0		2	1	1		6	2%
36			2	0		2	1	1		6	2%
37			2			2	1	1		6	2%
38			2			2	1	1		6	2%
39			2			2	1	1		6	2%
40			2			2	1	1	1	7	2%
41			2			2	1		1	7	2%
42			2			2	1		1	7	2%
43			2			2	1		1	7	2%
44			2			2	1		1	7	2%
45			2			2	1		1	7	2%
46			2			2	1		1	7	2%
47			2			2	1		1	7	2%
48			2			2	1		1	7	2%
Total	4	11	86	9	21	64	43	43	11	9	300
											100%



## D. Calculation For Recurring Running Cost

Packages/Contracts	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10		
Contract Values (in Thousands)	100000	250000	2000000	200000	500000	1500000	1000000	1000000	250000	200000	7000000	
Timeline of work	1-6	1-8	2-48	6-36	7-15	10-48	6-48	7-40	40-48	41-48	Total of Recurring cost (in thousands)	Nos. of active packages in month
Month No.	6	8	47	31	9	39	43	34	9	8		
1	85	211									296	2
2	13	31	252								296	3
3	13	31	252								296	3
4	13	31	252								296	3
5	13	31	252								296	3
6	8	21	167	17			83				296	5
7		15	120	12	30		60	60			296	6
8		15	120	12	30		60	60			296	6
9			126	13	31		63	63			296	5
10			95	10	24	72	48	48			296	6
11			95	10	24	72	48	48			296	6
12			95	10	24	72	48	48			296	6
13			95	10	24	72	48	48			296	6
14			95	10	24	72	48	48			296	6
15			95	10	24	72	48	48			296	6
16			104	10		78	52	52			296	5
17			104	10		78	52	52			296	5
18			104	10		78	52	52			296	5
19			104	10		78	52	52			296	5
20			104	10		78	52	52			296	5
21			104	10		78	52	52			296	5
22			104	10		78	52	52			296	5
23			104	10		78	52	52			296	5
24			104	10		78	52	52			296	5
25			104	10		78	52	52			296	5
26			104	10		78	52	52			296	5
27			104	10		78	52	52			296	5
28			104	10		78	52	52			296	5
29			104	10		78	52	52			296	5
30			104	10		78	52	52			296	5
31			104	10		78	52	52			296	5
32			104	10		78	52	52			296	5
33			104	10		78	52	52			296	5
34			104	10		78	52	52			296	5
35			104	10		78	52	52			296	5
36			104	10		78	52	52			296	5
37			108			81	54	54			296	4
38			108			81	54	54			296	4
39			108			81	54	54			296	4
40			103			77	51	51	13		296	5
41			120			90	60		15	12	296	5
42			120			90	60		15	12	296	5
43			120			90	60		15	12	296	5
44			120			90	60		15	12	296	5
45			120			90	60		15	12	296	5
46			120			90	60		15	12	296	5
47			120			90	60		15	12	296	5
48			120			90	60		15	12	296	5
Total	143	388	5676	329	235	3102	2334	1772	132	96	14208	



## ANNEXURE B

### HSE Displays

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## A. Types of Displays

### 1. Based on Content

SN	Type
1.	<b>HSE Hazards &amp; Precautions</b> Height Work, Housekeeping, Fire Safety, PPEs, Hot Work, Lifting & Rigging Activity, Site-specific Hazards – eg. for Refineries, Nuclear plants etc.; COVID Precautions; Environment Protection etc.
2.	<b>Other Displays, Signage etc.</b> HSE Policy, ISO Certificate, Safety Statistics, Assembly Area Location/ Route, Emergency Contact Numbers, Site Safety Rules & Regulations, Speed Limit, Work in Progress, Lock-Out Tag-Out (LOTO) Boards etc.

### 2. Based on Mounting

[Type 1]	[Type 2]	[Type 3]
Flex Sign Boards of Wooden Frame – directly mounted on Structures (walls, stairs, railings etc.)	Flex Sign Boards with Wooden Frame – mounted on metallic/ wooden legs – preferably double-sided	Coloured weather-proof Paintings on Walls (after due concurrence of BHEL/ Customer – Type 1 in case of no concurrence/ space)

## B. General Requirements:

- Displays should be weather-proof as per installation location, i.e. rain-proof, wind-proof and sun-proof.
- Installation location and size to ensure visibility for the intended viewers (workers and moving personnel)
- Displays to have at least 50% graphical elements preferably (as applicable). Language should be understandable by majority of the workers
- Displays to be relevant to the hazards in the area
- Proper installation to ensure boards don't obstruct activities and should not be prone to fall so as to pose danger
- In case of multiple elevations (eg. Boiler, Power-house etc.), each elevation to have displays for applicable hazards including Height-Work, Housekeeping
- For temporary work locations, posters/ boards may be erected and shifted after task is over
- Minimum size of displays should be A1 unless otherwise specified
- In case of damage, displays shall be reviewed and repaired/ replaced
- In areas where night work is envisaged, fluorescent displays shall be installed and these should comprise of at least 20-30% of total displays
- Total Number of displays to be not less than 1 per 10 workers and are to be dynamically updated based on number of workers



### C. Area-wise Displays

Below is list of Area-wise displays that are to be installed at Sites (Numbers, locations may be adjusted for specific requirements)

SN	Area	Suggested Subjects	Minimum Size	Minimum Quantity	Locations
1	<b>Walls/ Foundations/ Cement Structures etc. belonging to the package area</b>	Safety Hazards Prevention and other HSE Awareness content	[Type 3]	As per BHEL assessment from time to time	
2	<b>Site Interior Roads belonging to the package area</b>	At least every 20 meters: 1. Speed Limit Indication, Safe Driving board 2. Boards for hazard awareness	1. As needed [Type 2] 2. A1 or equivalent each [Type 2]	As indicated	Sides of Roads; Height to ensure good visibility
3	<b>Specific Package Areas</b>	<p><b>A. Common</b></p> <p>At entry to respective Package/ Work Area, each contractor to put up daily updated board with following for each shift:</p> <ol style="list-style-type: none"> <li>1. Scope of work and start date</li> <li>2. Emergency Contact Numbers</li> <li>3. Emergency Assembly Location, Escape Plan</li> <li>4. Locations and supervisors of various gangs in the area,</li> <li>5. Current Work permit Details</li> <li>6. Safety Supervisor Location assignments - Names, Mobile Nos., Assigned Locations</li> <li>7. Details (Name, Contact No. etc.) of Package In-charge - Contractor &amp; BHEL</li> <li>8. Details (Name, Contact No. etc.) of Safety In-charge - Contractor &amp; BHEL</li> <li>9. LTI Free Man-days &amp; details of last LTI also to be indicated</li> </ol> <p>In addition, Area-Specific Displays as indicated in Table 1</p>	A0 [Type 2]	1 per Package Area	Entry/ Ground Level

**Table 1**  
**(Area/ Package-wise HSE Display Plan – As applicable)**

Prepared By (Subcontractor)				
S. No.	Area	Suggested Minimum No. of Displays & Types	Type	Numbers Installed
1	Boiler	3 per working elevation	[Type 1]	
2	Powerhouse	5 per elevation	[Type 1]	
3	ESP	5 Per Pass	[Type 1]	
4	Buildings	5 per elevation	[Type 1]	
5	Cooling Tower (NDCT/ IDCT/ ACC)	20 per Structure	[Type 1]	
6	Chimney	20 per Structure	[Type 1]	
7	Fabrication Yard	10 per Yard	[Type 2]	
8	Batching Plant	5 per Plant	[Type 1]	
9	Material Storage Yard – Open	20 per Yard	[Type 2]	
10	Material Storage Shed – Semi-Closed/ Closed	10 per Shed	[Type 1]	
11	Electrical Booths	2 per booth + Line diagram, Emergency contact details	[Type 1]	
12	Medical & First Aid Centre	2 per Centre	[Type 1]	
13	Rest Shed	2 per Shed	[Type 1]	
14	Canteen	2 per Canteen	[Type 1]	
15	Drinking Water Area	1 Per Outlet	[Type 1]	
16	Washing Water Area	1 Per Outlet	[Type 1]	
17	Training Centre	10 per room	[Type 1/2]	
18	Assembly Area	5	[Type 1/2]	
19	Stairs	1 per landing elevation	[Type 1]	
20	Cylinder Storage Area	5 + Signage: Type of Gas, Empty, Filled etc.	[Type 1/2]	
21	Labor Colony	Electrical Safety with Distribution Plan/ Line Diagram - 1 COVID Precautions Posters – 5 Safety Awareness Posters – 10 Hygiene awareness posters - 2	[Type 1]	
22	Others	As per requirement	[Type 1/2]	

Date:

Sign (Contractor)

Sign (BHEL)



## ANNEXURE C

### HSE Tools/ Equipment/ Devices



Following equipment conforming to relevant IS/ISO/BS Codes/ Standards in indicated quantities shall be ensured by subcontractor. This list is tentative, not exhaustive. Quantity and date/ period of deployment shall be as per site requirement.

#### A. HSE Tools/ Equipment/ Devices

SN	Item
1	Lifelines
2	Retractable Fall Arrestors
3	Safety Nets (10m X 5m) fire proof double mesh
4	Sky Climbers
5	Fire Blanket
6	Honey Bee Removal Suit & Kit
7	Scaffolding Pipes
8	Flashback Arrestors
9	Barricading Tape
10	Binoculars
11	Walkie-Talkies
12	LOTO kit
13	24-Volt light
14	Sand Buckets
15	Hard barricading Pipes
16	Standby Fire kits
17	Hand-held Megaphone
18	Small Public Address System
19	Foldable Stretcher
20	Height Rescue Kit (Non-Motorized)
	(Others:)

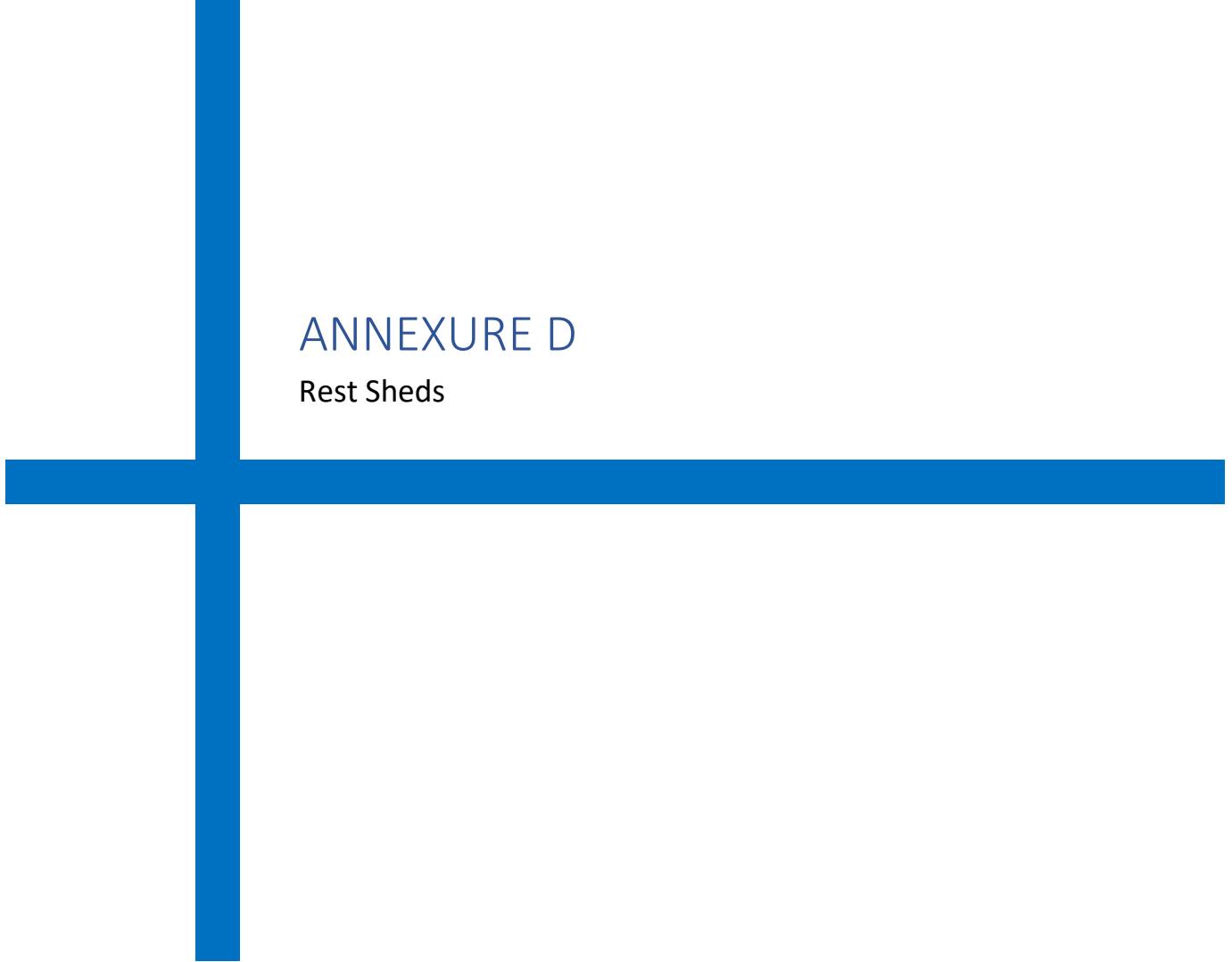
#### B. Test & Measurement Devices

SN	Device
1	ELCB Tester
2	Multi meter (Light cables)
3	Earth Resistance Meter
4	Lux Meter
5	Sound Meter
6	Anemometer
7	Breath Analyzer (Alcohol)
8	Multi-gas dozi-meter/ detector
9	Gas leakage detector / alarm
10	Gas monitor (confined space)
11	Radiation meter & Badges
12	Blood Pressure Monitor
13	Fire detectors
14	Hand held signaling light
	(Others:)



## ANNEXURE D

### Rest Sheds



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## 1. Determining the Number, Sizes and Locations of Rest Shelters

### i. **Numbers:**

The number of rest shelters shall be determined based on maximum number of workers at any one time (across all shifts). Formula is:

Wmax = Maximum number of workers at any time in the Site

Space per worker = 1.1 sq meter

Total space required, Tspace = Wmax X 1.1

Based on total space requirement calculated above, the number of rest sheds can be decided according to availability of locations and concentration of workers – so as to ensure the required space.

### ii. **Locations:**

The rest sheds should be so located so as to minimize the distance to be travelled by the workers from their locations of work considering all the practical constraints

### iii. **Other:**

The Rest shelter should be fenced so that it cannot be used as parking area.

## 2. Design & Construction of Rest Sheds

### a. **Permanent/ Long duration Rest Sheds**

- i. For locations where, permanent rest sheds can be constructed without possibility of removal for relatively long period of time, a semi-closed shed can be constructed covered with tin roof and supported with well-grouted beams. The floor of the shed to be preferably cemented/ solidified.
- ii. Adequate structural requirements suitable to the local weather (wind/ rain etc.) to be ensured.
- iii. The design of the rest shed to be approved by Civil Engineering Department of BHEL Site before commencing work

### b. **Temporary/ Movable/ Portable Rest Sheds**

- i. For locations where, permanent rest sheds cannot be constructed either due to non-availability of permanent location or other reasons, temporary rest shed shall be constructed.
- ii. Temporary rest sheds shall comprise of Tent arrangement carried out by professional agencies

## 3. Amenities in Rest Sheds

### a. **Essential Amenities**

Following amenities shall be essentially ensured in a rest shed:

- i. Hygienic environment with regular cleaning and housekeeping (with records)
- ii. Adequate illumination
- iii. Adequate ventilation/ heating as per weather conditions
- iv. Clean Drinking water source
- v. Hand Washing area
- vi. Toilets & Urinals
- vii. Benches/ mats for sitting/ lying
- viii. Any other essential requirement deemed necessary by the Site
- ix. Dust bins of sufficient quantity/ size that are vacated each day/ as per requirement

### b. **Additional/ Optional Amenities**

Following amenities are optional but are recommended to enhance the level of satisfaction of work force:

- i. Hot/ Cold drinks (Tea, Coffee, Glucose etc.) as per requirement
- ii. Snacks
- iii. Fans/ Coolers/ Heating arrangements as per requirement and weather conditions
- iv. A nice, welcoming interior design, music etc.
- v. Water cooler



#### **4. Health & Safety Requirements of Rest Sheds**

Use of asbestos in construction is banned and shall not be used.

In addition, following essential Safety features shall be ensured in Rest sheds:

- i. Availability of Fire extinguishers (preferably CO2 type)
- ii. Display of Safety Posters
- iii. Pest/ reptile protection
- iv. Mosquito prevention measures

#### **5. Note:**

Any suitable closed spaces/ newly constructed buildings etc. available at project may also be used for the purpose of rest shed with due concurrence of BHEL



## ANNEXURE E

### Labor Colony



1. These Guidelines suggest minimum requirements. However, additional requirements based on feasibility and circumstances, while adhering to directions of GOI/District Administration/Local Authority guidelines to be considered
2. Norms for social distancing, training/ awareness, face masks, disinfection, sanitization, gate entry, quarantine, medical, action in case of suspect cases of COVID and other communicable diseases etc. to be followed as per Govt. and BHEL guidelines issued from time to time
3. Labor colony to be developed as close to the Site as possible to avoid lengthy commute
4. A "Suggestion Register" shall be made available at the labor colony for residents. The feedback shall be reviewed on weekly basis and acted upon by concerned Contractor. Same shall be reviewed periodically by authorized BHEL Site Official.
5. **Canteens, Latrines & Urinals, Washing Facilities, Crches, Residential Accommodation and other infrastructure/ facilities:**

Numbers/ Quantities and Features of these facilities shall be in line with the following as applicable:

- a. BOCW Act & State Rules
- b. The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act & State Rules
- c. Factories Act & State Rules
- d. Other Relevant Acts & Rules

#### **6. Cleanliness & Hygiene/ Housekeeping:**

- a. Regular cleaning of the labor colony to be ensured.
- b. Daily cleaning of Sanitary facilities.
- c. Proper drainage system to prevent water-logging
- d. Regular fogging to prevent spread of mosquitoes
- e. Prevention of foul smell through necessary interventions
- f. Dust suppression as per requirement
- g. Cutting of Grass at regular intervals and other necessary measures to prevent pests & reptiles
- h. Stray animals to be banned from labor colony.
- i. Outside every common facility, eg. Toilet, washroom, food hall/ canteen etc., provision of washbasin with flowing water and soap (preferably liquid soap) to be ensured

#### **7. Power Supply Layout:**

Electrical supply Layout of Labor Colony shall have the provision of Safety devices like MCBs, ELCBs etc. and to be clearly displayed

#### **8. Washing & Drinking Water Availability**

- a. Adequate water to be provided in line with: "Estimation of Water Requirements for Drinking and Domestic Use (Source: National Building Code 2016, BIS)"
- b. Drinking water tank to be cleaned every week and sticker for the same pasted on the tank
- c. Drinking water source should be tested as per IS 10500

#### **9. Waste Disposal:** Separate bins for dry, wet and biomedical waste to be installed. These bins to be evacuated regularly

#### **10. Training & Awareness/ Displays**

- a. **HSE Awareness Displays:** Posters/ banners/ boards to be displayed in labor colony. Subjects of displays shall be precautions for applicable hazards at work site.
- b. **Emergency Contact Numbers** including that of Doctor, Hospital, Labor Colony Supervisor, HSE Officials to be displayed prominently



**11. Doctor Visits:**

Regular and need-based visits by Doctors to be ensured through tie-ups etc.

**12. Inspection & Review:** Regular inspection of labor accommodation to be carried out by the Contractor as per prescribed format. Last inspection date, inspector and next due date to be prominently indicated near main gate

**13.** Provision of a Fair Price shop in the premises to be ensured as per requirement

**14.** Adequate arrangements to be ensured in case of children/ families



## ANNEXURE F

### Toilets



**Toilets (Latrines and urinals shall be ensured at Site and Labor Colony in accordance with the Inter-State Migrant Workmen Act, 1979 as given below:**

LATRINES	URINALS
<p>1. Latrines shall be provided in every establishment on the following scale, namely: -</p> <ul style="list-style-type: none"> <li>a. Where females are employed, there shall be at least one latrine for every 25 females;</li> <li>b. Where males are employed, there shall be at least one latrine for every 25 males:</li> </ul> <p>Provided that where the number of males or females exceeds 190, it shall be sufficient if there is one latrine for 25 males or females, as the case may be, up to the first 100, and one for every 30 thereafter</p> <p>2. Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.</p>	<p>1. There shall be at least one urinal for male workers up to fifty and one for female up to fifty employed at a time:</p> <p>Provided that where the number of male or female workmen, as the case may be, exceeds 500 it shall be sufficient if there is one urinal for every fifty females up to the first 500 and one for every 100 or part thereof thereafter.</p> <p>2. The urinals shall be designed and located so as to ensure privacy.</p>

**Important:**

1. Where workers of both sexes are employed there shall be displayed outside each block of latrine and urinal a notice in the language understood by the majority of the workers '**For Men Only**', or '**For Women Only**', as the case may be.
2. The notice shall also bear the figure of a man or of a woman, as the case may be.
3. The latrines and urinals shall be conveniently situated and accessible to workers at all times at the establishment.
4. The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
5. Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the public health authorities.
6. Water shall be provided by the means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
7. At Site, on ground, **Modular Bio-toilets** as per industry standard specifications and regular professional cleaning shall be ensured. The toilets should be sufficient in number and easily accessible to workers from every work area
8. At Site, in various elevations, suitable urinals with proper drainage to be ensured at each elevation in line with IS 2064 (1993). Same to be cleaned regularly



## ANNEXURE G

### Fire Extinguishers

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SN	Type of Fire Risk (Class of Fire)	Extinguishing Medium & Relevant INDIAN STANDARD	Scale of Equipment (Minimum recommended)
1.	<b>CLASS 'A'</b> Fires involving ordinary combustible materials like wood, paper, textiles, rubber etc. (Ordinary hazard or low fire load)	WATER Soda acid type, water type (gas pressure) and water type (constant air pressure) IS: 934 -1976; IS: 940 -1976; IS: 6234 -1971	For every 600 square meter floor area or part, one 9-litre capacity. Minimum 4 numbers per floor or room; should not be required to travel more than 15 meter to reach any extinguisher.
2.	<b>CLASS 'A'</b> (Extra hazard & high fire load)	-do	-do – (Also, consult local fire authority).
3.	<b>CLASS 'A'</b> (Special hazards)	-do	-do – Extra provision For every 100 square meter floor area or part, one 4.5 Kg. CO2; minimum 2 numbers per room; should not be required to travel more than 10 meter to reach any extinguisher.
4.	<b>CLASS 'B'</b> (Fires in flammable liquids like oils, solvents, petroleum, products, varnishes, paints, etc. where blanketing effect is essential) (Storage and handling in small quantities)	FOAM / CARBON DIOXIDE / DRY CHEMICAL POWDER IS: 933 -1976; IS: 2878 1976; IS: 2171 1976; IS: 4308 -1982	For every 50 square meter floor area or part, 2 numbers 9-liters foam or 5 kg dry powder; should not be required to travel more than 10 m in the area of storage to reach any extinguisher.
5.	<b>CLASS 'B'</b> (Bulk storage other than in tank form))	-do -	-do- (but minimum 3 numbers per room)
6.	<b>CLASS 'C'</b> (Fires involving gaseous substances under pressure where it is necessary to dilute the burning gas at a very fast rate with an inert gas or powder) (storage and handling of gas cylinders)	CARBON DIOXIDE / DRY CHEM. POWDER. The best way to extinguish such fire is by stopping the flow of fuel gas to the fire. Container is kept cool with water spray. IS: 2878 1976; IS: 2171 -1976; IS: 4308 -1982	For every 100 square meter floor area or part; 2 numbers, 10 kg powder extinguisher or 6 kg CO2; minimum 3 nos. per room; should not be required to travel more than 10 meter to reach any extinguisher.
7.	<b>CLASS'D'</b> Fires involving metals like magnesium, aluminum, zinc, potassium etc. where the burning metal is reactive to water and which require special extinguishing media or technique	SPECIAL DAY POWDER IS: 2171 -1976 IS: 4861 -1968	For every 50 square meter floor area or part, 2 nos. 5 kg special dry powder; minimum 3 nos. per room; should not be required to travel more than 10 meter to reach any extinguisher.
8.	<b>MIXED OCCUPANCY</b> (electrical); Generators; Transformers; etc.	CARBON DIOXIDE DRY POWDER, IS: 2878 1976; IS: 2171 -1976	For every 100 square meter floor area or part one 10 kg CO2. Minimum 2 numbers for every location should not be required to travel more than 10 meter to reach an extinguisher.

**Note:** Due to peculiarities of the power plant construction sites, there would be locations in the construction areas of Boiler, Turbine, Generator, Transformer, etc. where different types of fire risk (classes of fire) may co-exist. Special care shall be taken while selecting and installing portable fire extinguishers for such locations so that all types of fire risk that may co-exist, are adequately covered. Similar special care shall be taken for storage areas.

a. All Electrical welding booths shall be equipped with appropriate Fire Extinguisher



- b. Appropriate Fire Extinguishers shall be made within easy reach of all welding operations
- c. Fire extinguishers shall be regularly tested and last checked date to be indicated on each. Master list shall be prepared with location and details
- d. Providing appropriate fire-fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
- e. Subcontractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labour colony etc. Such fire protection equipment shall be easy and kept open at all times.
- f. The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders.
- g. All other fire safety measures as laid down in the "codes for fire safety at construction site" issued by safety coordinator of BHEL shall be followed.
- h. Non-compliance of the above requirement under fire protection shall in no way relieve the subcontractor of any of his responsibility and liabilities to fire incident occurring either to his materials or equipment or those of others.
- i. Emergency contacts nos. must be displayed at prominent locations
- j. Tarpaulin being inflammable should not be used (instead, only non-infusible covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.



## ANNEXURE H

### HSE Compliance Certificate



Bill Ref no: \_\_\_\_\_ Date: \_\_\_\_\_

NAME OF THE AGENCY: \_\_\_\_\_ Work-Area/Package: \_\_\_\_\_

Sl. No.	Description	Remarks
1	<b>HOUSE KEEPING:</b>	
1.1	All working areas at site (specific to the agency) are free from garbage's, scraps & any other undesired non-plant materials. There is no encroachment in safe passage of man, material & T&P to carry out activities safely	
1.2	All the plant materials under the custody of the agency are stacked & stored properly.	
2	<b>GENERAL ILLUMINATION:</b>	
2.1	ALL the working areas at site & office of the agency including passages are having proper & sufficient illumination.	
3	<b>STATUTORY &amp; REGULATORY REQUIREMENT:</b>	
3.1	Sufficient water for drinking & other purposes and sanitation in work area and labour colony are available.	
3.2	Periodical Medical check-up of workers & staff done regularly & report submitted to BHEL	
3.3	Regular EYE testing is done for Crane operators/Welders and data's are available with agency	
3.4	All the T&P, Cranes etc used by the agency are having proper T.Cs & Fitness certificate available from competent authority.	
4	<b>SAFETY COMPLIANCE:</b>	
4.1	Number of Tool box meetings between Safety officers, erection staff & workers of the agency held in this month with location mentioned	
4.2	All precautions & Safety measures including PPE compliances are taken before working at HEIGHT	
4.3	Permit for working at Height is taken & complied accordingly	
4.4	ELCB is used in Construction Power Supply source by the agency & Proper Distribution board and electrical cabling has been used by the agency and regularly checked by electrician & safety officer of the agency	
4.5	Unsafe areas barricaded properly & unsafe opening closed properly	
4.6	Proper Platforms & Hand-rails used in areas earmarked earlier	
4.7	Proper safety signage's, Slogans & Emergency contact phone numbers including FIRE contact nos. are made available by the agency in locations mentioned	
5	Whether any penalty imposed by BHEL towards non-compliance of above points.	

<u>VENDOR'S SIGNATURE</u>	
Erection Engineer	
HSE Officer	
Site-in-Charge	

<u>BHEL'S SIGNATURE</u>	
Erection Engineer	
HSE Officer	
Package-in-Charge	



## ANNEXURE I

### Activity-Specific Safety Precautions/ Controls

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## General

The philosophy of hierarchy of controls as below shall be followed

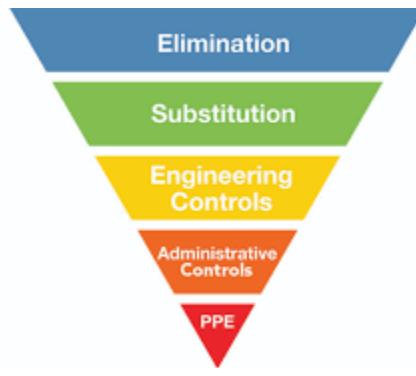


Fig. 1.1

It shall be ensured that there are multiple protections against any accident/ incident. For example, for height work there shall be safe platforms and walkways, Safety Nets and Lifelines for hooking double lanyard Safety harness by workers.

Monitoring and modifying worker behavior shall be part of ensuring safety. All personnel should be competent and trained for the job

Brief Safety guidelines for various hazardous activities are indicated below, besides the mandatory requirements based on Hazard Identification studies, HSE Procedures, Operational Control Procedures, Work Permits, applicable Indian Standard Codes and other provisions detailed in this document. Constant supervision at all times to be maintained by Execution & Safety Team to ensure implementation of these provisions.

### 1. WORK AT HEIGHT:

- a. All work at height above 2 meter above ground level without complete platforms, handrails and other related fall protection shall require a work permit in the prescribed form. This shall require approval by the competent authority. The HSE officer of sub-contractors shall follow the checklist religiously by physically verifying the condition of the work area before recommending for approval.
- b. Prior to the start of work at elevation, the HSE Officer involved with the work must meet the work supervisor to review the scope of work, and must review all the possible fall hazards and effective safety responses. The evaluation / analysis must be documented and kept on file and on site by the HSE Officer.
- c. Whenever a fall hazard or other exposure exists for working at heights more than 2.0m/6ft, the nature and scope of work will be evaluated for conditions and environmental factors before selecting the appropriate fall protection system (active, passive or a combination of measures, as appropriate).
- d. All Engineering and Administrative Controls including barricading, safe platform, Safety Nets etc. shall be made available at work location. Under no circumstances, there shall be total reliance on PPEs only
- e. **Safety Nets**
  - i. Contractor shall maintain sufficient stock of Safety Nets for deployment
  - ii. Safety Nets as per IS: 11057:1984 should be used extensively for prevention / arrest men and materials falling from height.
  - iii. The safety nets shall be fire resistant, duly tested and shall be of ISI marked.

- iv. Safety Nets shall be deployed below all platforms where height work is envisaged. Duration of work, delay shall be no excuses for non-installation of Safety Net
- f. Reaching beyond barricaded area without lifeline support, moving with support of bracings, walking on beams without support, jumping from one level to another, throwing objects and taking shortcut must be discouraged.
- g. Monkey Ladder shall be fitted with cages. Rope ladder should be discouraged.
- h. In case of pipe-rack, persons should not walk on pipes and walk on platforms only.
- i. In case of roof work, walking ladder/ platform should be provided along with lifeline and/ or fall arrestor.
- j. For chimney or structure painting, both hanging platform and men should be anchored separately to a firm structure along with separate fall arrestor.
- k. The procedures for the safety response to identified fall hazards developed and rescue plans must be reviewed with all individuals exposed to the hazards.
- l. The HSE Officer must establish an inspection process of fall protection systems. Some equipment requires documented inspections by its manufacture on a regular schedule. Such equipment must have evidence of the inspection and re-certification process on it. This information must be reviewed before the equipment is actually used. Individuals must visually inspect the fall protection equipment before each use. Failure to complete this inspection process could result in serious injury or death.
- m. Immediately remove from service any fall protection equipment that is identified as defective, damaged, or has been subjected to an impact. Damaged fall protective equipment must be destroyed to prevent re-use and not be discarded into trash containers, as the worn or damaged equipment could be unintentionally re-used.
- n. Aerial lifting devices, excluding scissor lifts require the use of full body harnesses and lanyards in any elevated position.
- o. Where Height related works are applicable then rescue team (consist of 5- 10 person) shall be identified and trained for potential rescue.

## **1.1 Personnel fall protection system must include:**

### **a. Safety Harness**

All height workers must use Full Body Safety harness with double lanyards with shock absorber (only). The primary lanyard is never unhooked until the secondary lanyard is secure. The design of the working platform should be such that under no circumstances, worker should have both lanyards unhooked while at height.

### **b. Lanyard**

- i. The type of work and the environment conditions determine lanyard and lifeline selection. If welding, chemical cleaning that may damage lanyards, connectors or lifelines, sandblasting, etc., either protect the components or use more appropriate type of system.
- ii. Lanyards and lifelines must incorporate, or be used with, an appropriate deceleration (shock absorbing) device. Deceleration devices include rope grabs, rip-stitch lanyards, specially woven lanyards, tearing, or deforming lanyards, automatic self-retracting lifelines and lanyards which dissipate or limit the energy imposed on the employee during fall arrest.
- iii. Once in use, the system's effectiveness is to be monitored. In some cases, a program for cleaning and maintaining the system may be necessary. Lanyard and lifelines must use locking snap hooks only and under



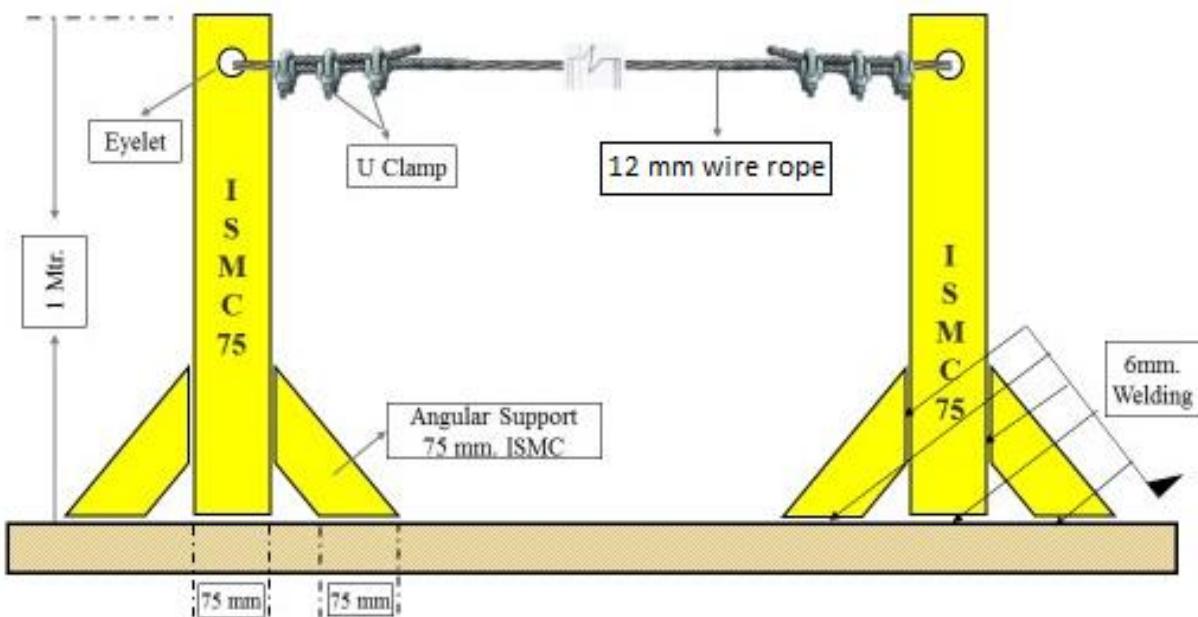
no circumstances must two lanyard snap hooks be connected.

#### c. Lifeline

All lifelines in general are to be made of min 12mm dia. steel rope (plastic coated) and tied to columns with 3 clamps at each end. Wherever columns are not available to tie the lifelines, the vertical posts as per the design below are to be provided after carrying out drop load test initially. A load of 240kg to be dropped off the mid-point of lifeline in this test.

#### d. Lifeline Post

**DIAGRAM : LIFELINE POST**



**Fig. 2.1 Lifeline Post**

- i. The support at vertical post shall be fixed at end-to-end (welded/ bolted). The maximum length of one end to another end shall be 6 meters
- ii. If the length of a lifeline is more than 6 meters, then intermediate vertical post(s) are to be used. Such intermediate post(s) will act as supports and the lifeline rope should simply pass through the eyelets (holes) of such supports without being anchored
- iii. The lifeline need not be wrapped / clamped to any intermediate post
- iv. Such intermediate posts must be used at an interval of every 6 meters
- v. The post(s) in which the original lifeline is to be installed should be capable of sustaining a tensile stress of 2268 Kgs.
- vi. In a horizontal lifeline installation, maximum allowable sagging is 500-600 mm
- vii. For a single spun lifeline, no more than 3(Three Nos.) persons are allowed to work; for more than two workers, another lifeline should be installed
- viii. Horizontal lifeline should be so installed that it does not impede safe movement of workers
- ix. All the installation work must be carried out by competent person with adequate knowledge

## 1.2 Working Platform

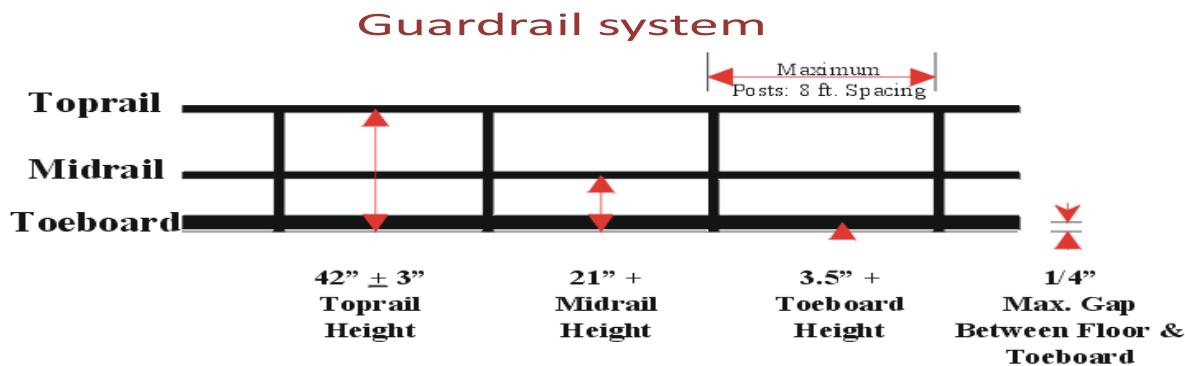
- a. Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or

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floor level, they shall be closely boarded and shall have adequate width, which shall not be less than 750 mm and be suitably fenced.

**b. Precautions against the fall of Materials, Persons and Collapse of Structures:**

- i. Every opening in the floor or a building or in a working platform shall be suitably barricaded to prevent the fall of persons by providing suitable fencing or railing whose minimum height shall be 90 cm.
- ii. Adequate precautions should be taken such as the provision of fencing, or barriers to protect any person who might be injured by the fall of materials, or tools or equipment being raised or lowered. Hard barricading shall be made at such places made of scaffolding pipe & clamps covered with reflective net. Cradle may be used for lifting materials - however this shall be made of MS angles and flats only and duly certified by the HSE officer. Operators may also use designed containers for lifting small tools.
- iii. Guardrails (including scaffolding) erected over/adjacent working areas must have the guardrails screened (opening < 0.5), to prevent material from falling outside the platform/decking.
- iv. Guardrails must be able to withstand a 200-pound force exerted in any one direction.
- v. Where necessary to prevent danger, guys, stays or supports should be used or other effective precautions should be taken to prevent the collapse of structures or parts of structures that are being erected, maintained, repaired, dismantled or demolished.
- vi. All openings through which workers are liable to fall should be kept effectively covered or fenced and indicated in the most appropriate manner.
- vii. Guardrails and toe-board/barricades and sound platform conforming to IS: 4912-1978 and other Indian laws and regulations as depicted below should be provided.



**Fig. 2.2 Guard Rail System**

- viii. Guardrails shall be provided to protect workers from falling from elevated work places. The rails are generally made of MS pipes of suitable dia. Rebar shall not be used for any handrails, ladder or cover purpose. Wherever the guard-rails and toe-boards cannot be provided:
  - a. adequate safety nets or safety sheets shall be erected and maintained; or
  - b. adequate safety harnesses shall be provided and used and / or
  - c. adequate fall arrestor shall be provided and used.

As mentioned under PPE clause, all these PPEs shall be defect free and regularly inspected for any defect.

The full body safety harness shall have double lanyard only with max 1.8m length.

- ix. The monkey ladders shall have sufficient fall arrestors. Adequate lifelines of 8mm steel wire rope shall be provided across the work area.
- x. The HSE officer shall recommend appropriate PPEs after analyzing hazards and risks involved.

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### 1.3 Scaffolding

All scaffolds shall be conformant to the relevant standards including IS 3696 and IS 4014 as applicable. A sketch of the scaffolds proposed to be used shall be prepared and approval of the BHEL Engineer obtained prior to construction / use. Only cup lock type scaffoldings will be allowed in site. Where cup lock type scaffolding arrangement is not feasible by the virtue of the location, in that case only pipe and clamp type scaffolding will be allowed.

- a. The scaffolding work must be carried out by a competent person, who shall train the scaffold users on safety aspects
- b. All scaffolds shall be erected / dismantled by scaffolding crew under direct supervision of competent scaffolding supervisors.
- c. All scaffolds shall be capable of supporting 4 times maximum intended load and erected on sound, rigid footing, capable of carrying the maximum intended load without settling or displacement. Bamboo scaffolding is not permitted for use on site.
- d. Each employee on the scaffold shall use an approved safety harness attached to an independent lifeline. The lifeline is to be securely attached to substantial members of the structure (not the scaffold itself) or to securely rigged lines, which shall safely suspend a worker in event of a fall.
- e. Guard rails and toe boards shall be installed on all open sides and ends of platforms more than (2) meters above ground or floor
- f. Scaffold planks must be at least 5 cm x 25 cm (2" x 10") full thickness lumber scaffold grade or better.
- g. Scaffold planks shall not span distances greater than 2.5 meters (8 feet).
- h. Scaffold planks shall extend over end supports not less than 6 inches nor more than 12 inches and be secured to the scaffold. Scaffolding and accessories with defective parts shall be immediately repaired or replaced.
- i. All scaffolding must be a minimum of two planks wide. No one may work from a single plank.
- j. Scaffold planks must be inspected before use. Planks that have been damaged must be removed from the site.
- k. Access ladders must be provided for each scaffold. Climbing the end frames is prohibited unless the design incorporates an approved ladder.
- l. Adequate mudsills or other rigid footing capable of withstanding the maximum intended load must be provided.
- m. Scaffolds more than 6 meters (20 feet) in height must be tied to the building or structure at intervals which do not exceed 4 meters (13 feet) vertically and 6 meters (20 feet) horizontally.
- n. Do not overload scaffolds. Material should be brought up as needed. Scaffolding must not be loaded in excess of its rated capacity.
- o. Barrels, boxes, kegs, blocks or similar unstable object must never be used as work platforms or to support scaffold.
- p. Where persons must work under or pass under a scaffold then a 18 gauge wire mesh screen must be installed between the toe board and guard rail.
- q. Employees exposed to overhead hazards while working on a scaffold will be protected by 5 cm (2") thick planks.
- r. Wooden/bamboo ladders shall not be allowed at any cost. Ladder's rungs shall be fitted /welded



properly. Before every use the rungs should be checked for safe use.

- s. Wooden scaffolds shall not be used in areas where fire / fire products are expected
- t. Ropes made of jute / Plastic and other fire prone material shall not be used to tie up scaffolding components together
- u. The platform should have permanent hand rail and mid rail with Toe board without fail.
- v. All platforms are to be tightly planked for the full width of the scaffold, except as may be necessary for entrance openings. Platforms shall be secured in place.
- w. On suspension scaffolds designed for a working load of 500 pounds, no more than two workers are permitted to work on the scaffold simultaneously. On suspension scaffolds with a working load of 750 pounds, no more than three workers are permitted on the scaffold simultaneously.

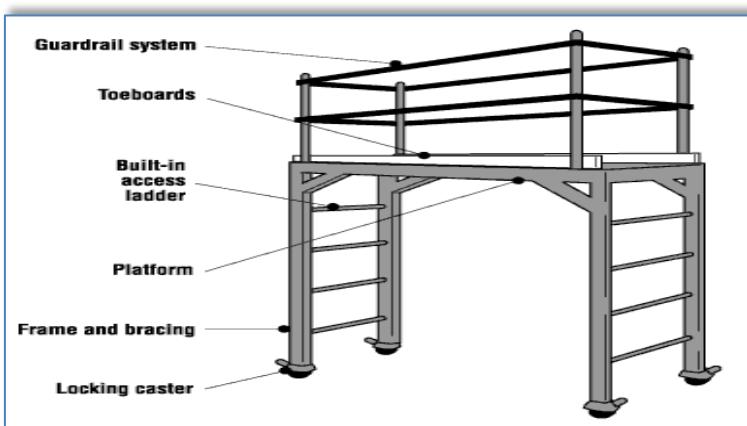
**x. Requirements for different types of Scaffolds:**

**A. Suspended Scaffold**

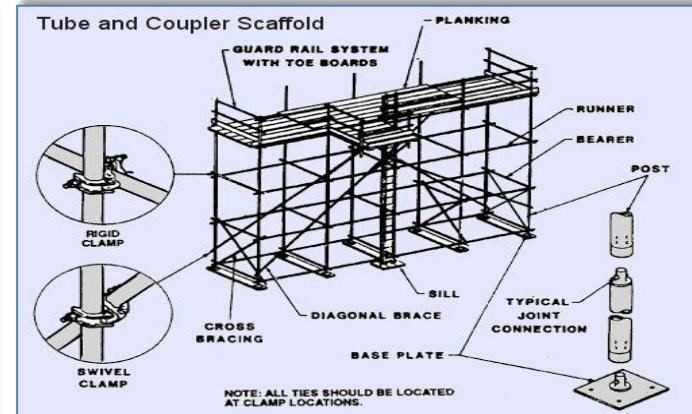
- i. Suspended scaffolds are platforms suspended by ropes, or other non-rigid means, from an overhead structure.
- ii. Requirements for use are to be preapproved by HSE Head, under a specific Permit to Work.

**B. Rolling Scaffolds**

- i. The height of rolling scaffolds shall not exceed three times the minimum base dimension.
- ii. The minimum base dimension of rolling scaffold will be 1.25 meters (4 feet).
- iii. Adequate help must be provided when moving a rolling scaffold.
- iv. Secure or remove all loose materials, equipment and tools before moving a rolling scaffold.
- v. No one is permitted to ride a rolling scaffold when it is being moved. Castor brakes must be locked-on when the scaffold is not being moved.



**Rolling Scaffold**



**Tube & Coupler Scaffold**

**Fig. 2.3 Types of Scaffolds**

## 1.4 Ladder Safety

A sketch of the ladders proposed to be used shall be prepared and approval of the BHEL Engineer obtained prior to construction / use

**a. Safe Use of Ladders:**

- i. Fall protection is required when working on a ladder above 2 meters and when climbing above nearby guardrails.

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- ii. Ladders must be inspected prior to use and by a competent person quarterly, with documentation.
- iii. Use portable ladders for height up to 4 M only
- iv. Provide fixed ladders for height above 4 M
- v. Place the ladder at an angle of 75 degrees (approx.) from the horizontal (1:4)
- vi. Extend ladder at least 1 M above the top landing
- vii. Secure top and bottom of the ladder firmly to prevent displacement- anti skid lining at the bottom
- viii. Ensure that the width of the ladder is not less than 300 mm and distance between rungs is not more than 300 mm
- ix. Provide landings of minimum size 600 x 600 mm at intervals not more than 6 M for fixed ladders. Check the ladders daily for any defects
- x. Ensure that the areas around base and top of the ladder are clear. Getting on and off the ladder is more hazardous than using it. Use a mudsill if the ladder is to rest on soft, loose or rough soil
- xi. Do not use ladders of conducting material near power lines, and only use ladders near power line or other energized system with exposed parts if they are confirmed locked-out and de-energized.
- xii. Stand no higher than the fourth rung from the top for carrying out any job standing on a ladder.
- xiii. Never reach out from a ladder to perform work where your belt buckle protrudes past the ladder rung.
- xiv. Always face the ladder while climbing up or down
- xv. Maintain three-point contact while climbing up or down a ladder i.e. two hands and one foot or two feet and one hand on the ladder at all the times.
- xvi. Avoid climbing up or down a ladder while carrying anything in hands. Lift tools, equipment and materials with a rope.
- xvii. Work from portable and extension ladders near guardrail where fall exposure exists over the guardrail regardless of height, and above 2.0 mtr. heights from the working/walking surface will require the use of personal fall arrest equipment

## 2. EXCAVATION & CIVIL WORKS

All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.

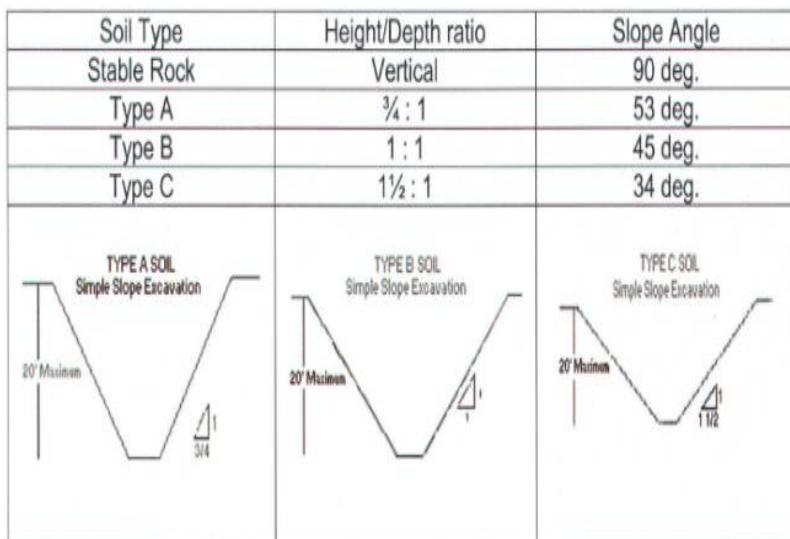
### 2.1 Excavation

The following safety measures are to be ensured before and during excavation:

- a. All Excavation activities more than with depth of 1.22 meter or more shall require an Excavation Work Permit
- b. Check for underground utilities like electrical / telephone cables, sewage, water lines and proper care has to be exercised to protect and prevent damage to it.
- c. Electrical cables and service lines to be identified using cable detector/locator device before carrying out the excavation work
- d. Proper and adequate slope is maintained while excavating
- e. Adequate shoring or sheeting is done wherever required to prevent soil sliding
- f. Safe access through ladder or steps for exit & entry to excavation
- g. No material /excavated soil is kept within one meter from the edge
- h. Safe way is planned and provided for movement of HEM /transport equipment near excavation
- i. Safety helmet and shoes/gum boots are provided and worn by the workmen at excavation works



- j. Dewatering arrangement is made where water seepage is prevailed.
- k. Stop blocks are provided to avoid vehicles reversing into the excavated trenches
- l. Danger signs /Caution boards are displayed at work spot
- m. Hard Barricading is provided at excavated pits. It should be made of scaffolding pipe and clamp with reflective nets.
- n. All Excavated area of depth 3mtr or more is to be hard barricaded with pipe.



Determining Soil Type		
Type	Description	Examples
<b>A</b>	Cohesive soils with an unconfined compressive strength of 1.5 tons per square foot or greater.	Clay, silty clay, sandy clay, clay loam and in some cases: silty clay loam and sandy clay loam.
<b>B</b>	Cohesive soils with unconfined compressive strength greater than 0.5 tsf but less than 1.5 tsf.	Angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases silty clay loam and sandy clay loam.
<b>C</b>	Cohesive soils with unconfined compressive strength greater than 0.5 tsf or less.	Granular soils such as gravel, sand and loamy sand; submerged soil or soil from which water is freely seeping; submerged rock that is not stable.

**Fig. 3.1 Excavation Reference**

## 2.2 Piling

Ensure the following precautionary measures before starting piling works:

- a. Inspection of piling equipment by responsible person for its condition before initiating piling operation.
- b. Checklist and OCP for piling to be prepared using manufacturer's instructions and used
- c. Testing and its certification wire rope, slings, D-shackles, chain pulley blocks using in the process of piling work by competent person
- d. Adequate support and secured foundation of the piling equipment to avoid toppling
- e. Hoses should be lashed and adequately secured
- f. Proper work platform is to be provided on piling frame
- g. Safe work procedures and close supervision to prevent unsafe acts of operators/any unsafe conditions that may arise
- h. Only experienced and trained operators are engaged for the piling operation
- i. Provision of Personal Protective Equipment (PPE) like safety shoes/gumshoes/safety helmet/safety belt etc. and its use by their workmen.
- j. Special care and precautions If work is near electrical live cables/ electrical equipment
- k. Cordoning of work area to prevent un authorized entry
- l. Guarding of revolving parts
- m. Specific measures to prevent over turning of pile driver/missing of hammer/ hammer movement out of range

## 2.3 Batching Plant Operation

Following Safety considerations for batching plant are to be ensured:

- 1. Modern type batching plant should be used in which all the moving parts are protected and emergency

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and safety features are incorporated.

2. Installation of external Electric moto-vibrators in the feeding hopper of all batching plants to reduce human intervention.
3. Installation of safety devices like pull-chord on both the sides of conveyor for stopping the conveyor in emergency
4. Workers carrying cement / sand to be given appropriate PPEs like respiratory masks & gloves.
5. Conveyor belt/rotating parts must be guarded properly.
6. Safety awareness shall be inculcated in workmen about the risk involved in rotating parts.
7. The agency shall ensure to erect the batching plant as per drawing including installation of all safety devices as provided by manufacturer and witnessed by BHEL Engineer in charge before starting of machine in future.
8. Safety audit to also focus on Batching plant.
9. The site shall impose penalty on the agency who has violated the safety norms as per contract.

## 2.4 Mobile Plant

Mobile plant includes tractors, trailers, dumpers, excavators, bulldozers, road rollers etc. for earthmoving purpose and concrete mixers, concrete transit mixtures, concrete pumps etc for concreting purpose. Due to the very nature of their function and movement in difficult terrains, congested areas, working in tandem with manual work and other operations the danger is inherent.

Automatic reverse camera with reverse horn connected with reverse gear is compulsory for all moving machineries.

### **Following Safety measures to be ensured for Mobile Plant:**

- a. Where movement around site is involved, routes should be planned, obstruction free and well maintained
- b. Observe specified speed limits
- c. Operating personnel should be aware of associated risks and its preventive measures
- d. Only experienced, trained and authorized persons with valid license (wherever applicable) should operate the mobile equipment/vehicles
- e. Provide and use Warning lights and reverse horn for cautioning the people around
- f. Operation should be on level and stable ground with adequate working clearance.
- g. Loading of out riggers/stabilizers should be well within safe ground bearing capacity
- h. No person should be on equipment or vehicle during loading and unloading of material
- i. Operators should be protected by warning barriers or switching off power when working in close proximity of overhead power lines
- j. The equipment /vehicles should be well maintained and provided with effective brake system and other safety devices (wherever require)
- k. Rotating parts of equipment should be adequately guarded
- l. Provide necessary personal protective appliances and ensure its use by the operating personnel Ensure effective measures at source to control harmful emissions, dust, fumes contaminating atmosphere and cause health hazards to the operators and people in the vicinity.
- m. No overloading/over stressing of vehicles/plant is allowed
- n. Hoses, pipes, receivers, gauges and valves involved in carrying out hydraulic fluid/ compressed air should be checked for leaks and tested prior to operation.



- o. Adequate safe clearance for swing and movement is to be judged during operation of Concrete mixer
- p. Setting of machines on firm and level ground with wheel locked to prevent movement of machine
- q. Proper instructions and Special precautions are to be ensured to prevent entry in to the danger zone of projectile of bucket while dropping bucket
- r. Operator leaving work spot should ensure that the equipment/vehicle is kept in neutral position and place on firm and level ground.
- s. The hand brake should be kept in position and block road wheels as additional safety measure
- t. Blades/buckets should be kept low while moving
- u. The dozer blades should not be used as brakes except in emergency
- v. The ground should be examined for its bearing capacity and general safety especially when operating road roller at the edges of slopes, embankments.
- w. The roller should not be moved downhill with the engine out of gear
- x. If operating near excavations the following precautionary measures are to be ensured
- y. Barricading, edge protection to prevent fall of persons/vehicles over running while reversing etc.
- z. Suitable support system and adequate allowance to avoid the danger of side collapsing
- aa. Experienced signaler /attendant should be always accompanied with operator/driver for proper direction /signal and also to caution others in the working Zone during operation of mobile plant

## 2.5 Concrete Vibrators

- a. Revolving parts/belt drives should be adequately guarded and Vibrating unit shall be completely enclosed and have suitable overload relays and effectively earthed
- b. Ensure sufficient length of cable to the Vibrator.
- c. Ensure electric starters and other accessories are firmly fixed adequately supported
- d. Ensure locking of needle load while inserting needle in to the vibrator,
- e. Ensure periodical lubrication and maintenance

## 2.6 Concrete Mixers

- a. Setting of machines on firm and level ground with wheel locked to prevent movement of machine
- b. Proper instructions and Special precautions are to be ensured to prevent entry in to the danger zone of projectile of bucket while dropping bucket

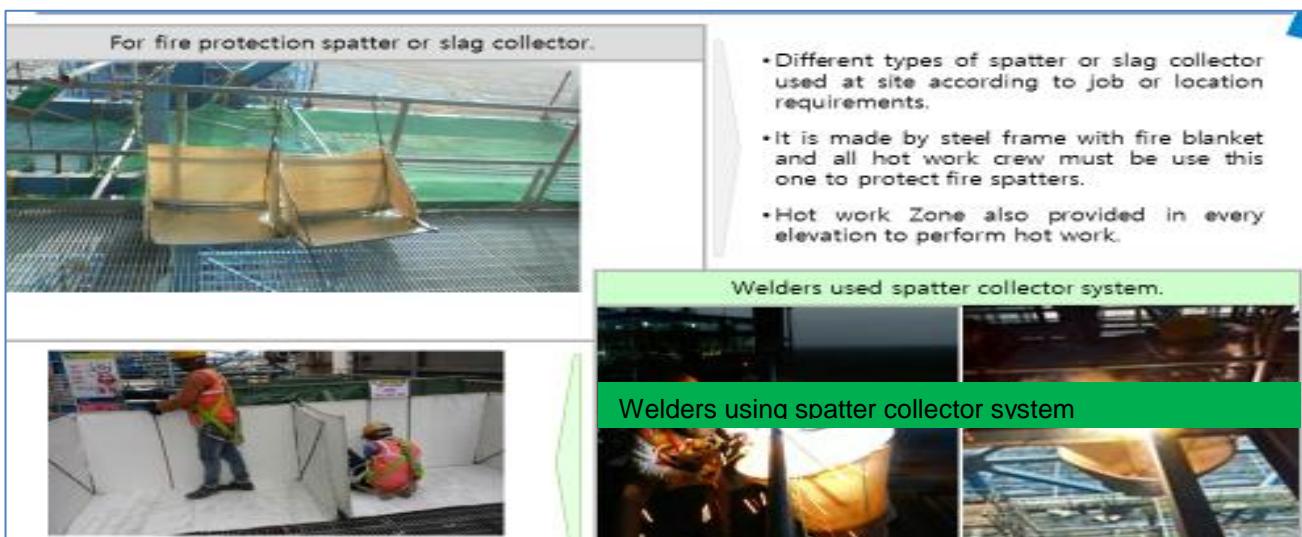
## 3. WELDING & GAS CUTTING SAFETY (HOT WORK)

- a. All Hot Work shall require a Hot Work Permit
- b. Inbuilt Voltage Reduction Device (VRD) equipped arc welding machine will only be allowed for work.
- c. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced.
- d. All safety precautions shall be taken for welding and cutting operations as per IS-818.
- e. When possible, items to be welded, cut, heated, etc. shall be moved to a safe location free of combustible or flammable material. If this is not possible, then all combustibles/ flammables that can be removed from the area shall be removed within a 35-foot circumference and a positive means of confining arcs and sparks generated by the process shall be ensured and additional person(s) shall be stationed as fire-watch for the area(s) still exposed, along with obtaining the Hot Work Permit as applicable.
- f. Appropriate fire-fighting equipment is to be available in close proximity of any welding and gas cutting operations at all times suitable for the type of Fire.



- g. Drums, tanks, and similar containers that have contained flammable or toxic material shall not be welded, cut, or heated until they have been made safe by water filling, thorough cleansing or similar accepted practices. The container shall also be ventilated during the welding, cutting, or heating process.
- h. Proper ventilation is required for any welding or torch operations performed in a confined space.
- i. Any welding or gas cutting operations performed on metals of toxic compounds or coating such as zinc, stainless steel, lead, cadmium, chromium, and beryllium shall be properly ventilated and/or proper respiratory protection shall be worn by any person that could be exposed to fumes, vapors, and gasses created by the welding and gas cutting processes.
- j. Wherever it is practical, all arc welding operations shall be shielded to prevent direct light rays or sparks from contacting persons in the vicinity or from reaching areas normally used to travel through or into the vicinity. Where this is not practical, persons who shall be in the area are to use proper eye and skin protection. Other persons who are not participating in the welding or gas cutting operations are not to be allowed into the hazard zone.
- k. Welders and other employees who are exposed to arc welding radiation shall wear suitable clothing and protective apparel to prevent burns and other types of ultraviolet radiation damage to the skin.
- l. Arc welding machines shall be shut down when being moved or when they are not in continuous use. Electrode holders left unattended shall have electrodes removed and shall not be left where they might contact employees or conducting objects.
- m. Arc welding power supply cable shall be of proper rating and material, e.g. copper.
- n. Welders shall guard against allowing materials adjacent to or behind them to reflect radiation back toward them or towards others in the area. Reflected radiation can cause skin burns and eye flash burns.
- o. Valve caps shall be in place when cylinders are not in use. Valve caps shall never be used for lifting the cylinder vertically.
- p. Torches shall only be lit by approved strikers; never with matches, cigarette lighters, or hot-work.

q. **Splatter / Slag Collector:**



**Fig. 4.1 Splatter / Slag Collector**

While carrying out job at height, the sparks or molten slag shall be prevented from falling down by putting a fire-resistant (non-asbestos) sheet or patter/ slag collector or even MS Sheet. The passage of falling sparks

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or molten slag shall be barricaded till ground floor and any cable/ tubes/ any other objects interfering in the passages shall either be removed or covered with Fire-resistant sheet or MS Sheet.

#### r. COMPRESSED GAS

- i. All cylinder valves shall be closed when any work is finished and when any Cylinders are empty or being moved. Valve protection caps shall be placed and secured properly before gas cylinders are transported, moved or stored.
- ii. Compressed gas cylinders shall be secured in an upright position with chain or appropriate means during storage & use. However, a trolley shall be used for transportation.
- iii. Compressed gas cylinders shall always be secured from tipping or falling, whether in use, in storage or in transit. The cylinders shall always be secured upright, except during times when actually being hoisted or carried.
- iv. When cylinders are transported by powered vehicle they shall be secured in a vertical position.
- v. Regulators shall be removed when cylinders are not in use or are in transit, unless the cylinder is firmly secured on a special carrier designed for this purpose.
- vi. Gas cylinders are not allowed to be used in man-basket when occupied.
- vii. Cylinders containing oxygen or fuel gasses shall not be taken into confined spaces.
- viii. Oxygen cylinders shall be stored a minimum of 6 meters from fuel gas cylinders or shall have an approved firewall between them.
- ix. All cylinders shall be kept at a safe distance from welding or cutting operations or shielded from arc/ sparks / slag.
- x. All cylinders shall be placed where they cannot become part of the electrical circuit.
- xi. Oxygen and acetylene shall not be stored together. Oxygen must be separated from acetylene (or ANY fuel gas) or combustible material by at least 20ft or a barrier with a 30-minute fire resistance rating.
- xii. All Cylinders should be stored upright in a designated area with labels for the type of gas. All applicable precautions to be ensured during storage
- xiii. Oxygen and fuel gas regulators, hoses and associated equipment shall not be altered and shall be in proper working order while in use.
- xiv. Compressed air can be extremely dangerous if allowed to penetrate the skin. As such, the use of compressed air to clean off yourself or other workers shall be strictly prohibited.
- xv. All gas cylinders shall be stored in upright position. Suitable trolley shall be used for cylinder movement, the design of which shall be submitted to BHEL Engineer for approval.
- xvi. No of cylinders shall not exceed the specified quantity as per OCP
- xvii. Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.
- xviii. All cylinder should be kept only in cylinder trolley.
- xix. Cylinder shall be transported in upright vertical position by suitable mean.

#### 4. LIFTING & RIGGING SAFETY

- a. All Heavy / Complex Lifting operations as defined in Clause 6.12 shall require a Lifting Work Permit. A written rigging procedure and plan must be prepared for all individual heavy/ complex lifting operations.



- b. All the cranes and lifting tools & tackles shall be inspected on daily / weekly basis as well as monthly by expert as per applicable formats.
- c. In addition, inspection / certification as mandated by law shall be carried out wherein these shall be tested and certificates of fitness shall be obtained from 3rd party State Govt. approved competent agency before deploying at site and later periodically. BHEL shall be given advance intimation of any such inspections
- d. The last date of Third-Party Inspection and the next Due date shall be conspicuously displayed on all cranes. A copy of certificate shall be pasted on operator's cabin of all the lifting equipment.
- e. Specifically designed heavy steel plates lifting clamps shall be used for lifting heavy metal sheets. Manmade lifting clamp chapa shall not be used for lifting/shifting of plates.
- f. Following requirements shall be mandatorily followed, wherever applicable:
  - i. The manufacturer's instruction for maintenance shall also be followed. All safety measures shall be followed.
  - ii. All tools tackles, lifting appliances; material-handling equipment etc. used by the subcontractor shall be of safe design and construction.
  - iii. The operators, slingers and signalers shall be qualified as per IS 13367 (part-1):2003 "Safe use of cranes- code of practices".
  - iv. There shall be a person responsible for co-ordination among cranes where multiple cranes are used, and lifting over load chart of the crane to be avoided.
  - v. Mobile phone should be banned for crane operator and lifting operation. Only walkie talkie shall be allowed in rigging/Lifting purpose.
- g. Lifts/Movements between 5 Tons and 20 Tons:
  - i. Shall include a rigging plan, detailing schematic representation of the handling/lifting operations that must be included on the Method Statement.
  - ii. When performing similar lifts of identical items, only one rigging plan need be prepared, provided each of the lifts can be performed in accordance with the rigging plan.
- h. Lifts/Movements Less Than 5 Tons:
  - i. An equipment rigging plan is not required for lifts less than 5 tons, safety measures are covered in the JSA. This could change as per BHEL requirement

**i. Personnel Lifts (Man-Basket / Jhoola):**

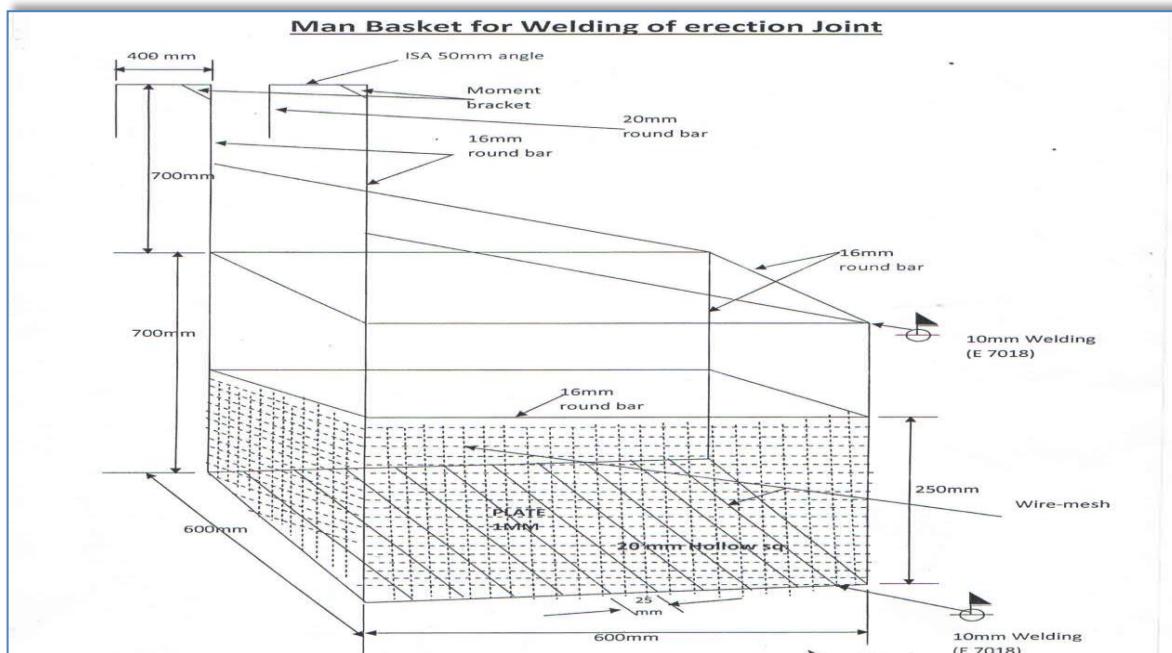
The design of personnel man basket shall be submitted to BHEL Engineer for approval before use. Relevant permit (Height work & others as applicable) shall be completed prior to lifting any people, along with a rigging plan.

- i. A separate Lifeline / fall arrestor anchored to a fixed structure outside of Jhoola shall be provided for the workers inside the basket. All occupants of the basket shall have Safety Harnesses equipped with rope grabs, which are to be hooked to the vertical lifeline.
- ii. Man-basket shall be used where access through ladders or scaffolding is not feasible.
- iii. Man-baskets shall be designed and engineered by a manufacturer (job made man-baskets are not allowed, unless designed and tested by a certified engineer), and built robust with MS Angles and flats or plates or channels only.
- iv. Guard rails top and mid, must be in place and screened-in to avoid material from falling out of



basket. The factor of safety shall be 200%.

- v. It shall have a door with double latches and shall open inside. Anchor points shall be identified within the man-basket.
- vi. The man-basket shall be thoroughly inspected and load tested and a trial run performed without personnel before being put to job.
- vii. It shall be treated as a lifting tool (T&P Item) and shall undergo same certification cycle and inspection as other lifting equipment.
- viii. An additional sling of required lifting capacity shall be fixed the man-basket main lifting point and attached to the crane above the ball or block.
- ix. While lifting man-basket, the crane shall maintain a uniform speed of lift without any swing.
- x. Once man-basket reaches the destination, the lift brakes shall be locked as long as the basket
  - a. remains at that point. The same care shall be taken in its descent.
- xi. As for hanging man-basket, the same shall be hung off a rigid structure with help U-shaped handle welded to man-basket. This shall be tested once in a year by a competent person.
- xii. Use of Rebar steel for making and monkey-ladder must be avoided.

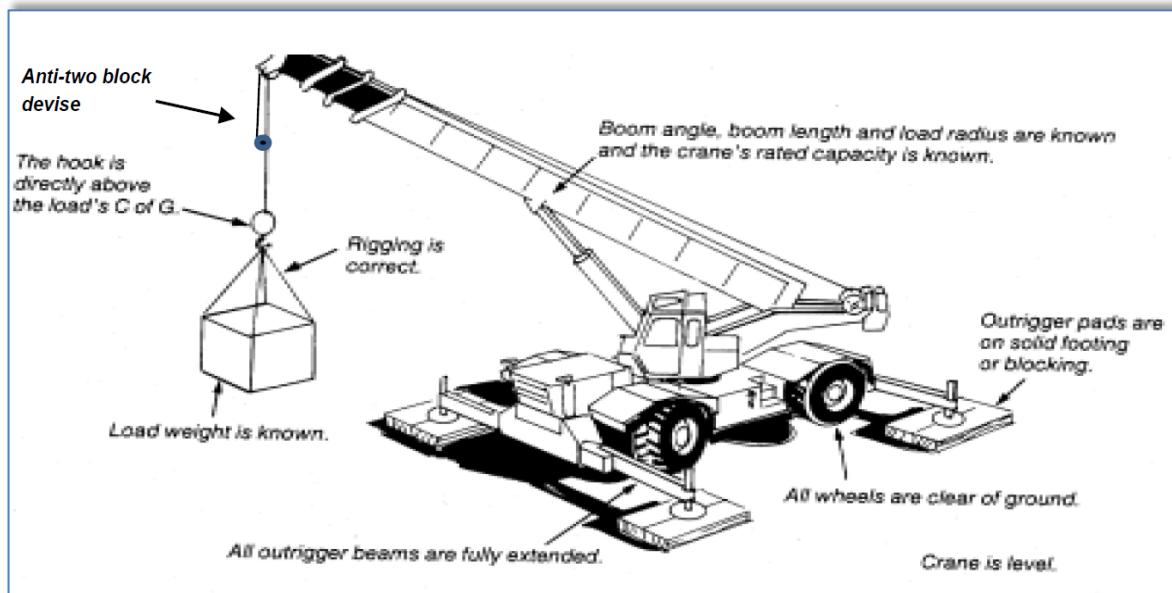


**Fig. 5.1 Man Basket for Welding Erection Joint**

#### 4.1 Cranes & Hoisting Equipment:

This section provides the guidelines to ensure proper rigging and lifting activities are accomplished safely and in accordance with applicable specifications, codes, and regulations.

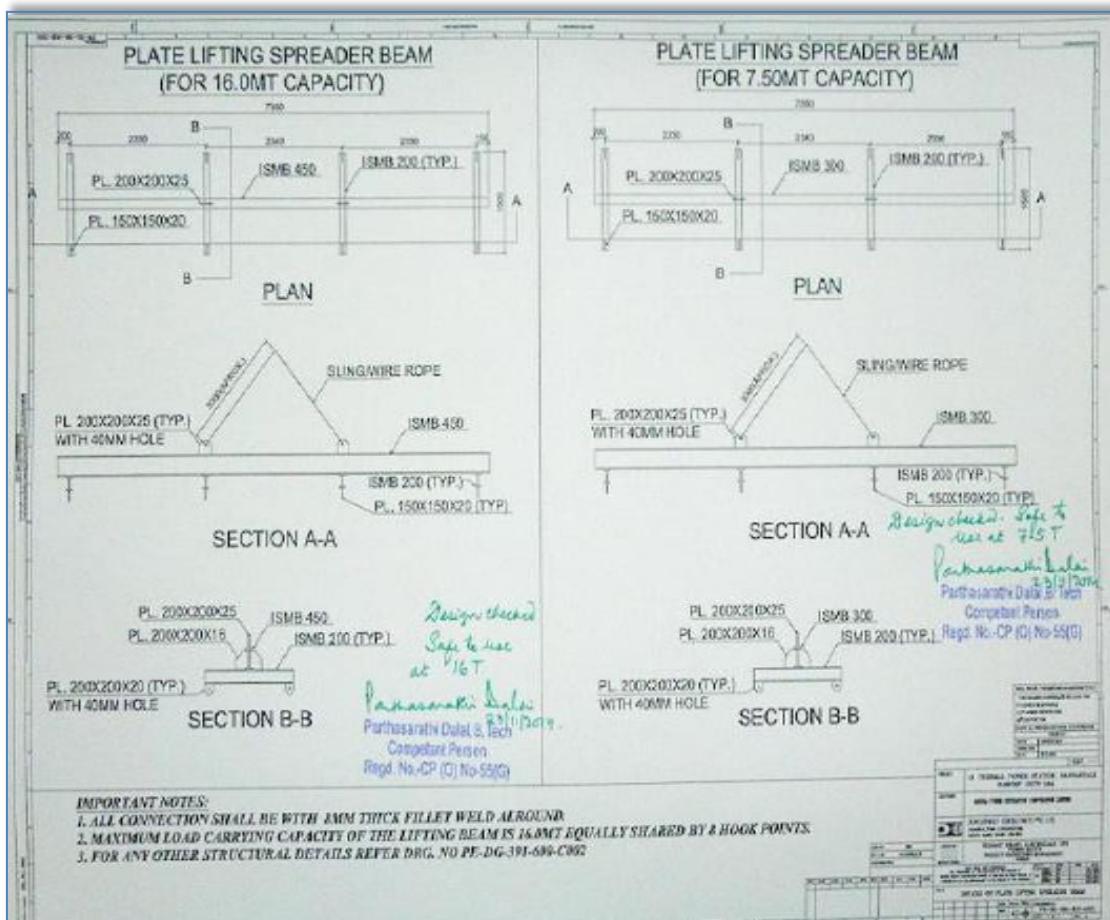
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**Fig. 5.2 Proper Crane Setup**

- a. On every crane or piece of hoisting equipment notices of all rated load capacities, recommended operating speeds, and any hazard warnings or special instructions shall be conspicuously posted. All instructions and warning shall be visible from the equipment operator 's station.
- b. Cranes shall have an Anti-Two-block safety device installed
- c. All mobile cranes shall have overload and backup alarms, load angle indicators and limit switches
- d. All areas within swing radius of cranes that are potentially accessible by pedestrian, vehicular, or equipment movement shall be barricaded to prevent anyone or any vehicle or equipment from being struck by the crane or hoisting equipment, or its load(s).
- e. No part of the lifting equipment or its load shall be within the distance as specified in the Indian Electricity Act from an energized power line
- f. Cranes shall have annual certified third-party inspection and be inspected before use by the operator. Any defects shall be corrected before use. Logs of crane inspection shall be kept with the crane.
- g. Make certain that the rigging personnel, material, and equipment have the necessary capabilities for the job and are in safe condition.
- h. Communicate with person(s) directly responsible for accomplishing the work and / or work area to establish requirements/responsibilities and make certain that all preparatory work is complete.
- i. Mats/Pads must be used on all lifting equipment, equipped with out riggers.
- j. Pick and carry must have the load secured to the rig in front.
- k. Only BHEL Approved Plate Lifting Spreader Beam configuration shall be used (Sample in Fig. 11.3.5.3)
- l. Crane operators must follow the following:
  - i. Pass an annual Operator's Physical examination
  - ii. Carry a valid training certification card at all time while operating issued by the Govt. or other recognized institute.

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**Fig. 5.3 Typical Plate Lifting Spreader Beam Configuration for 7.5 MT and 15 MT Loads**

**m. Safe Rigging Practices**

- Review the planned operation and requirements with the operator and rigging crew.
- Ensure a pre-lift meeting is conducted with crane operator, tagline operator, signal personnel, and Safety Manager.
- Designate a qualified person from the rigging crew to observe clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desire clearance by visual means.
- Clear the lift area of all unnecessary personnel.
- Hydras shall only be allowed for loading & unloading works & shall not be allowed to move with load

**n. Rules for Safe Rigging**

- Use loops, thimbles and corner pads to prevent damage to slings when used around corners or on cutting edges.
- Never allow wire rope to lie on the ground for any length of time or on rusty steel or near solvents, chemicals or corrosive substances.
- Slings must not be pulled from between or under loads with load resting on the sling.
- Keep all rope away from flame cutting or welding operations.
- Never use rope as sling material.
- Never wrap a wire rope completely around a hook.

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- vii. Do not bend wire rope near any attached fitting.
- viii. The sling must be selected to suite the most heavily loaded leg rather than the total weight when using multi-legged sling to lift loads in which one end is heavier than the other.
- ix. When using 3 and 4-legged sling configurations, any two legs must be capable of supporting the entire load.
- x. Where possible, wire rope choker hitches must include a shackle with the eye around the shackle pin to prevent breaking wires of the choke. The choker hitch must be "snugged down" prior to lifting, not after tension is applied.
- xi. Unless authorized by the hook manufacturer when more than two rope eyes are placed over a hook, install a shackle, pin resting in the hook, and place the rope eyes in the bowl of the shackle.
- xii. Properly rig all loads to prevent dislodgment of any part.
- xiii. Use guide ropes or tag lines to prevent the rotation or uncontrolled motion of the load when necessary.
- xiv. Loads must be safely landed and properly blocked before being unhooked and unslung. Tag lines must not be used in situations that jeopardize the safety of the lift.
- xv. Lifting beams must be plainly marked with their weight and designed working load and must only be used in the manner for which they were designed.
- xvi. The hoist rope or chain must never be wrapped around the load. The load must be attached to the hook by slings or other rigging devices that are adequate for the load being lifted.
- xvii. Multiple part lines must not be twisted around each other.
- xviii. The hook must be brought over the center of gravity of load before the lift is started.
- xix. If there has been a slack rope condition, determine that the rope is properly seated on the drum and in the sheaves prior to lifting.
- xx. Keep hands away from pinch points as the slack is being taken up.
- xxi. Leather gloves are recommended when handling wire rope.
- xxii. Avoid impact loading caused by sudden jerking when lifting or lowering. Lift the load gradually until the slack is eliminated.
- xxiii. Never ride on a load that is suspended.
- xxiv. Avoid allowing the load to be carried over the heads of any personnel.
- xxv. Never work under a suspended load until the load has been adequately supported from the floor and all conditions have been approved by the supervisor in charge of the operation.
- xxvi. Never leave a load suspended unless emergency evacuation is required.
- xxvii. Never make temporary repairs to sling.
- xxviii. The capacity of a sling is determined by its angle, construction, type of hitch and size.
- xxix. Never lift loads with one leg of a multi-leg sling until the unused legs are made secure.
- xxx. Never point load a hook unless it is especially designed and rated for such use.
- xxxi. Make certain that the load is broken free before lifting and that all legs are taking the load.
- xxxii. When using two or more slings on a load make certain all slings are made from the same materials.
- xxxiii. Lower the loads on to adequate blocking to prevent damage to the slings.
- xxxiv. Materials and equipment being hoisted must be loaded and secured to prevent any movement which could create a hazard in transit.



- xxxv. The weight of the hook, load block and any material handling devices must be included when determining crane capacity.
- xxxvi. Calculated weights cannot exceed load chart without written approval.
- xxxvii. Personnel must be completely clear of loads being picked up or set down by crane. Tag lines will be used to control the loads. Loads must not be touched by hand while placing/ moving.

**o. Slings**

The following are rules for safe use of synthetic slings:

- i. Synthetic slings must be marked to show the rated capacity for each type of hitch and type of web material.
- ii. Nylon web slings must not be used where fumes, vapors, sprays or mists or liquids of acids or phenolic are present. Web slings with aluminum fittings must apply in this category.
- iii. Synthetic web slings must be removed from service and destroyed if any of the following conditions are present:**
  - a. Acid or caustic burns
  - b. Melting or charring of any part of the sling surface
  - c. Snags, punctures, tears or cuts
  - d. Broken stitches
  - e. Distortion of fittings
  - f. Synthetic web slings of polyester or nylon must not be used at or come in contact with temperatures in excess of 82°C
  - g. Polypropylene web slings must not be used at or come in contact with temperatures in excess of 93°C
  - h. Insulated hooks must be tested yearly to ensure insulation integrity to at least manufacturer's specifications.

**p. Wire Rope Slings must be removed from service and destroyed if any of the following conditions are present:**

- i. In (10) randomly distributed wires broken in one (1) rope lay, or five (5) broken wires in one (1) strand in one (1) rope lay.
- ii. Wear or scraping of one-third the original diameter of outside wires.
- iii. Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure such as:
- iv. Evidence of heat damage.
- v. End attachments that are cracked, deformed worn.
- vi. Corrosion of the rope or end attachments.

**q. Metal mesh slings must be immediately removed from service if any of the following conditions are present:**

- i. A broken weld or broken brazed joint along the sling edge.
- ii. Reduction in wire diameter of 25 percent due to abrasion or 15 percent due to corrosion.
- iii. Lack of flexibility due to distortion or corrosion.

**r. Requirements of Plate Clamps:**

- i. The rated load of the plate clamp must be marked on the main structure.



- ii. Care must be taken to make certain the load is correctly distributed for the plate clamp being used.
- iii. Do not allow load or plate clamp to come into contact with any obstruction.
- iv. The plate clamp must not be used for side pulls or sliding the load.
- v. When lifting stainless steel or special alloys, ensure plate clamp is designed for use on the specific metal.

#### **s. Signaling Practices:**

- The "slinger" is responsible for attaching and detaching the load to and from the crane. He shall:
  - have received appropriate training on general safe lifting operations;
  - be capable of selecting lifting gears suitable for the loads;
  - liaise with the operator and direct the movement of the crane safely.
- The "signaller" is responsible for relaying the signal from the slinger to the crane operator. He shall:
  - have received appropriate training on general safe lifting operations;
  - be able to direct the movement of the crane and loads.

**Suggested hand signals**



**Note:** During the lifting operation, either the slinger or signaller shall communicate with the operator. Other communication methods (e.g., wireless walkie-talkies, telephones, etc.) may also be used.

**Fig. 5.4 Recommended Signaling Practices**

#### **5. DEMOLITION WORK**

Before any demolition work is commenced and also during the process of the work the following shall be ensured, besides using the Work Permit:

- a. All roads and open areas adjacent to the work site shall either be closed, suitably protected or restricted for movement
- b. No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.

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- c. All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.

## 6. T&PS GENERAL

- a. All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test /calibration certificates bearing endorsement from competent authority of BHEL.
- b. Subcontractor to also submit monthly reports of T&Ps deployed and validity test certificates to BHEL safety Officer as per the format/procedure of BHEL.
- c. Tagging and punching in all lifting tool is compulsory with SWL, sr. no. and due date.
- d. All T&Ps shall be inspected by authorized Third Party agency as per applicable frequency. BHEL shall be kept informed of any such scheduled inspection
- e. All T&Ps shall be internally inspected in each quarter and colour coded.

## 7. CHEMICAL HANDLING

- a. Displaying safe handling procedures & MSDS for all chemicals such as lube oil, acid, alkali, sealing compounds etc. at work place.
- b. Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the subcontractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The subcontractor shall be responsible for obtaining the same.
- c. The used containers of chemicals shall be segregated and disposed of suitably
- d. In case the used containers need to be re-used, all traces of the chemical to be removed by thorough cleaning with detergents etc. under trained supervision

## 8. ELECTRICAL SAFETY

- a. Only electricians licensed by appropriate statutory authority shall be employed by the subcontractor to carry out all types of electrical works. The subcontractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
- b. No PDB or any other distribution board shall be more than 03 (three) years of purchase. Only modern PDB with industrial sockets as shown in layout below to be allowed to use at site.
- c. Power supply to all equipment at site to be routed through MCBs of appropriate rating. A 'Power Supply Distribution Plan' shall be prepared and submitted to BHEL Engineer for approval
- d. All power supplies through cables shall be underground or overhead with height > 3mtrs.
- e. All power distribution boxes shall be locked and the key controlled by site management of concerned subcontractor.
- f. All individual equipment & tools at site shall be powered through Earth Leakage Circuit Breakers of 30 mA sensitivity.
- g. These MCBs and ELCBs shall be regularly tested as per Clause 14
- h. All fuses and fuse wires shall be of standard size and rating.
- i. All electrical appliances used in the work shall be in good working condition and shall be properly double earthed other than armour earthling.



- j. All extension boards shall have separate switches for all sockets / connections.
- k. All portable electric tools used by the subcontractor shall have safe plugging system (industrial top & socket) to source of power and be appropriately earthed.
- l. Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts especially in confined spaces like inside water boxes, turbine casings, condensers etc.
- m. Electrical appliance shall have proper earthing and for appliances equal to & more than 415V shall have two separate earthing (as per IS-3043-1987)

**n. Portable Electric Lights**

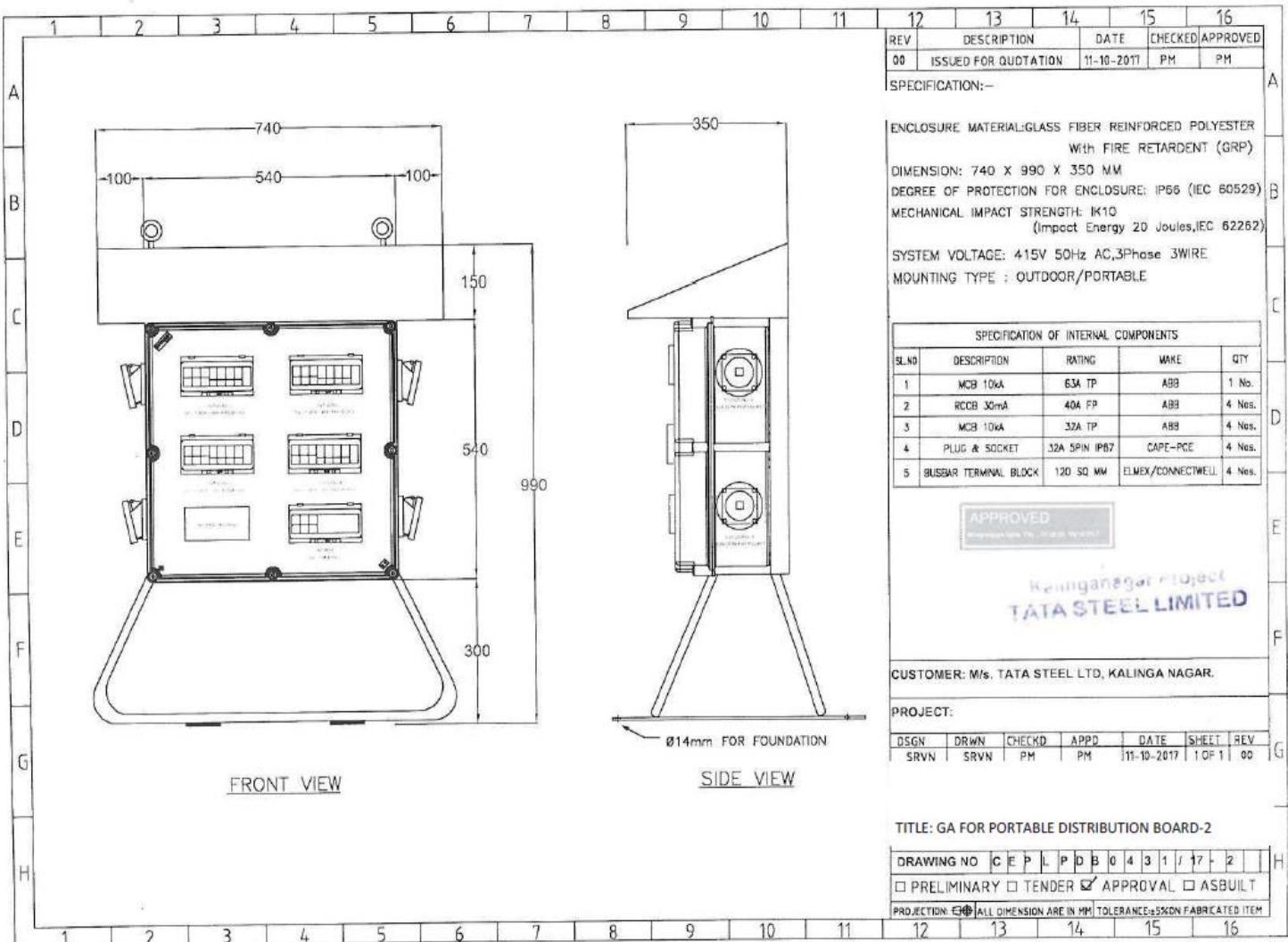
- i. Portable electric lights used in wet or potentially wet locations must be either low voltage type (24 volts or less) or protected by a GFI (ground fault interrupter).
- ii. They must be visually checked before each use and periodically while in use to assure their original integrity is maintained.
- iii. Cords with cuts, breaks, deep abrasions, etc. shall be taken out of service immediately.
- iv. Repairs to extension cords shall only be performed by qualified/ licensed electricians.
- v. Must not be allowed to lie in wet or potentially wet areas.

**o. Underground Cables:**

- i. Every electric line or cable of unknown origin that is discovered or exposed during a digging, drilling, probing, or similar operation is to be considered as energized and life threatening.
- ii. The senior company employee on the site will ensure that all necessary safety precautions are taken in order to isolate the line from all workers and the public.
- iii. Such precautions may include halting the operation if appropriate.
- iv. The senior company employee on the site is to then contact the proper authorities to have the line identified and either confirmed to be abandoned and/or made safe for continuing the work.
- v. Any and all underground lines that are discovered or become severed must be considered energized on both sides, and be treated accordingly.
- p. Details of earth resource and their test date to be given to BHEL safety officer as per the prescribed formats of BHEL
- q. The subcontractor shall use only properly insulated and armoured cables and conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site.
- r. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the risk & cost of the subcontractor.
- s. No maintenance work shall be carried out on live equipment
- t. Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public
- u. The subcontractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.
- v. Wiring and Branch Circuits Must be protected by a proper amperage over-current device such as a HRC fuse or circuit breaker. Such installations must be located so as to prevent physical damage to the wire conductors & panels.



w. The sub-contractor shall supply modern power distribution board of different combination (1-phase & 3-phase). All the distribution of power should be through modern PDB. Equipment drawing is mentioned below.



**Fig. 9.1 Layout of a modern Power Distribution Board**

**x. General Electrical Safety**

- In general, equipment or machinery being moved or transported must maintain minimum clearances of 25 ft. to all power lines.
- TAG IN/ TAG OUT must be in force in Switch Room and all Distribution Boxes for live power line. The authorized person's name and contact no shall be displayed
- Ensure "double insulated" three - core cables and three pin connectors are used and are properly ground "all insulated" types, all electrical tools and appliances must be manufactured for industrial use.
- All connections shall be electrically and mechanically sound and properly insulated. Taped joints are not permitted. Connections to socket outlets must be made with proper plugs (industrial top and socket).
- Splices in electrical cords are not permitted. Repairs must be made at the socket connection and retain the same mechanical and dielectric condition of the original connection.

*Rk*

- vi. Damaged or defective electric tools, equipment and extension cords, etc. must not be used and shall be tagged out of service, removed from the work area and taken back to stores.
- vii. Only licensed electricians are authorized to repair and work on electrical equipment. Tampering with electric tools or equipment by others could result in termination.
- viii. Temporary electric cabling should be elevated 2.2 meters above the floor/ground or covered for protection. It must be kept clear of walkways and other locations where it may be exposed to damage or create a tripping hazard.
- ix. Energized wiring in junction boxes, circuit breaker panels and similar places must be covered and locked at all times.
- x. Areas with live high voltage wires or terminals must be barricaded against entry and warning signs posted Danger – High Voltage and Authorized Personnel Only.
- xi. Personnel should never work on energized equipment, de-energizing (lockout/tag out) the equipment is always the first requirement.
- xii. The lockout and tag out procedure will be used when testing or working on, or around, energized installation.
- xiii. Working around energized equipment should never be done alone. A second electrician must always be available for assistance.
- xiv. If lockout/tag out of the work is infeasible (must be demonstrated), work on energized electrical circuits must be approved by the Site In-charge. All safety precautions necessary must be taken, PPE use must be evaluated per the exposure and used, i.e high/low voltage gloves, insulated shoes, overcoats/aprons, face shields, and other protective equipment like insulated tools, blankets, mats, etc. must be used.
- xv. The welding machines earth leads shall be properly fixed without loose contacts. The earth cable only has to be used. No steel members shall be used as earth leads.
- xvi. Electrical crews must be qualified for the equipment and tools they work on, including being trained in Cardio-Pulmonary Resuscitation (CPR) methods and First Aid for rendering help in the event of electric shock.

**y. Qualified Persons for Electrical Works**

(One who is trained and wiremen licensed to Govt. of Respective State and familiar with the construction, operation and safety hazards of the equipment upon which they are permitted to work.)

- i. Qualified persons are intended to be only those who are well acquainted/experienced with and thoroughly conversant in the electric equipment and electrical hazards involved with work being performed.
- ii. Only qualified persons may be permitted to work on or near exposed energized parts. Such persons are required to have been trained in three specific areas:
- iii. Qualified persons must be capable of working safely on energized circuits;
- iv. Must be familiar with the proper use of special precautionary techniques and procedures bases on equipment and exposure; and
- v. Must be familiar with required personal protective equipment, insulating and shielding materials, and insulated tools.



- vi. Qualified persons are expected to be able to evaluate unknown situations and adjust their activities in such a way that only safe work practices are used. Such behavior is the responsibility of the qualified person.
- vii. It is possible and likely for an individual to be 'qualified' with regard to certain equipment in the work place, and unqualified on other equipment they must know their limitation and stop work if not qualified on what equipment they were to work on.
- viii. An employee who is undergoing on-the-job training, who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training, and who is under the direct supervision of a qualified person is considered to be a qualified person for the performance of those duties. The process must be documented as proof.

**z. Mandatory PPEs of electrical work on LV & HV**

- i. HV arc flash suit with protective hood (for protection of face and head) as specified for hazard risk category-4 in NFPA-70E or similar IS specification for working on HT switch gear (for all voltage >690 V) to the concerned licensed electrician or competent person.
- ii. LV arc flash jacket/FR as specified for hazard risk category-4 in NFPA-70E or similar IS specification having ATPV rating of 8.5 to 9 cal/cm<sup>2</sup> for working on LV (>260V and <=690V) to the concerned licensed electrician or competent person.



- iii. The LV arc flash jacket as shown above shall be worn continuously while working on LV (>260V and <=690V). The color specification of LV arc flash jacket should be blue.
- iv. Electrical hand gloves should have following specification: Flame resistance, arc flash and cut protection of voltage rating (>260V and <=690V).
- v. Electrical safety over shoe of relevant IS make for foot protection of licensed electrician or competent person while working in HV & LV line or equipment.

**9. USE OF HAND TOOLS AND POWER-OPERATED TOOLS**

**a. General Provisions**

- i. All hands and power tools and similar equipment, shall be maintained in safe condition.
- ii. When power operated tools are designed to accommodate guards, they shall be equipped with such guards, when in use;
- iv. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains and other reciprocating, rotating or moving parts of the equipment shall be similarly guarded;
- v. Personnel using hand and power tools and exposed to the hazard of falling, flying, abrasive, and splashing objects, or exposed to harmful dusts, fumes, mists, vapors, or gases shall be provided with the particular personal protective equipment necessary to protect them from the hazards;

- vi. All hand-held powered platen sanders, grinders, grinders with wheels of 5 cm or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws and jigsaws with blade shanks of 0.5 cm wide or less shall be equipped with only a positive on-off control.
- vii. All hand-held powered drills, tappers, fastener drivers, horizontal, vertical or angle grinders with wheels greater than 5 cm in diameter, disc sanders, belt sanders, reciprocating saws, saber saws and other operating powered tools shall be equipped with a momentary contact on control provided that turnoff can be accomplished by a single motion of the same finger or fingers that turn it on.

**b. Hand Tools**

- i. The subcontractor shall not issue or permit the use of unsafe hand tools;
- ii. Wrenches including adjustable pipe end and socket wrenches shall not be used when saws are sprung to the point that slippage occurs;
- iii. Impact tools such as drift pins, wedges and chisels shall be kept free of mushroomed heads;
- iv. The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tools.

**c. Power Operated Tools**

- i. Electric power operated tools shall be either of the approved double-insulated type or shall be grounded;
- ii. The use of electric cords for hoisting or lowering loads shall not be permitted;
- iii. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming incidentally disconnected;
- iv. Safety clips or retainers shall be securely installed or maintained on pneumatic impact (percussion) tools to prevent attachments from being incidentally expelled;
- v. All pneumatically riveting machine staplers and other similar equipment provided with automatic fastener feed, which operate at more than 7 kg/cm<sup>2</sup> pressure at the tool a safety device on the muzzle to prevent the tool from ejecting the fasteners unless the muzzle is in contact with the work surface;
- vi. Compressed air shall not be used for cleaning purposes except when the pressure is reduced to less than 2 kg/cm<sup>2</sup> and that too with effective chip guarding. The 2 kg/cm<sup>2</sup> pressure requirement does not apply to concrete form, mill scale and similar cleaning purposes;
- vii. The manufacturer's safe operating for hoses, pipes, valves, filters and other fittings shall not be exceeded;
- viii. Only personnel who has been trained in the operation of the particular tool shall be allowed to operate power-actuated tools;
- ix. The tool shall be tested each day before loading to see that the safety devices are in proper working condition. The method of testing shall be accordance with the manufacturer's recommended procedure;
- x. Any tool found not in proper working order, or that which develops a defect during use, shall be immediately removed from service and not used until properly repaired;
- xi. Tools shall not be loaded until just prior to the intended firing time. Neither loaded nor empty tools are to be pointed at any other person. Hands shall be kept clear of the open barrel end;
- xii. Loaded tools shall not be left unattended;
- xiii. Fasteners shall not be driven into very hard or brittle materials including, but not limited to, cast iron, glazed tiles, surface hardened steel, glass block, live rock, face brick or hollow tiles;



- xiv. Driving into materials that can be easily penetrated shall be avoided unless backed by a substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side;
- xv. No fastener shall be driven into a palled area caused by an unsatisfactory fastening;
- xvi. Only non-sparking tools shall be used in an explosive or flammable atmosphere;
- xvii. All tools shall be used with the correct shield, guard or attachment as recommended by the manufacturer.

**d. Abrasive Wheels and Tools**

- i. All grinding wheel must be ISO certified only.
- ii. All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation;
- iii. Grinding machines shall be equipped with suitable safety guards;
- iv. The maximum angular exposure of the grinding wheel periphery and sides shall not be more than 900, except that when the work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure shall not exceed 1200. In either case, the exposure shall begin not more than 8.650 above the horizontal plane of the spindle. Safety guards shall be strong enough to withstand the bursting of the wheel;
- v. Floor and bench-mounted grinders shall be work-rests, which shall be rigidly supported and readily adjustable. Such work-rests shall be kept at a distance not to exceed 5 mm from the surface of the wheel;
- vi. Cup type wheels used for external grinding shall be protected by either revolving cup guard or a band type guard;
- vii. When safety guards are required, they shall be mounted as to maintain proper alignment with the wheel and the guard and the guard and its fastening shall be adequate strength to retain the fragments of the wheel in case of incidental breakage. The maximum angular exposure of the grinding wheel periphery and sides shall not exceed 1800;
- viii. Portable abrasive wheel used for internal grinding shall be provided with suitable safety flanges;
- ix. When safety flanges are required, they shall be used only with wheels designed to fit the flanges. Only safety flanges, of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of incidental breakage, shall be used;
- x. All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects;
- xi. Grinding wheels shall fit freely on the spindle and shall not be forced on. The spindle nut shall be tightened only enough to hold the wheel in place;
- xii. All employees using abrasive wheels shall be protected by suitable eye protection equipment.

**e. Wood Working Tools**

- i. All fixed power-driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off-position;
- ii. The operating speed shall be attached or otherwise permanently marked on all circular saws over 0.5 m in diameter or operating at over 3000 peripheral rpm. Any saw so marked shall not be operated at a speed other than that marked on the blade. When a marked saw is re-tensioned for a different speed,



the marking shall be corrected to show the new speed;

- iii. Automatic feeding devices shall be installed on machines wherever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points;
- iv. All portable power-driven circular saws shall be equipped with guards above and below the base plate or shoe. The upper guard shall cover the saw to the depth of the teeth, except for the minimum arc required to permit the base to be tilted for bevel cuts. The lower guard shall cover the saw to the depth of the teeth, except for the minimum arc required to allow proper retraction and contact with the work. When the tool is withdrawn from the work, the lower guard shall automatically and instantly return to the covering position.

## **10. START UP, COMMISSIONING AND TESTING:**

There are various activities involved prior to commissioning- the major ones are -Hydraulic Test, Steam Blowing, Transformers Charging, Boiler Light Up, Rolling and Synchronisation and Full loading of unit.

- a. These activities shall be personally supervised by the site executive along with the commissioning engineer.
- b. Appropriate Work Permits shall be taken as applicable
- c. The readiness of upstream and downstream system shall be ensured before taking up.
- d. These shall be handled strictly by the authorized persons only and the team shall be suitably briefed about the activity including hazards & risks involved and control plan by the concerned executive-in-charge before start.
- e. Entry of persons to the area of activity shall be suitably restricted and the emergency functions like Ambulance, first aid center and Fire station shall be intimated about the plan well in advance.
- f. Tag-in/ Tag-out shall be in place while charging transformer and whenever necessary.
- g. Electricians with valid wiremen license only shall be permitted to work on power lines.
- h. The area and the passage shall be adequately illuminated.

## **11. FIRE SAFETY**

- a. The Fire Prevention, Protection and Preparedness Program is an integral part of the overall HSE Program. Effort and consideration must be given to safety, life and potential for delays in construction schedules and plant startup, as well as protection of property on a given project. The purpose of which is to prevent
  - i. Inception of fire
  - ii. Loss of life or personal injury
  - iii. Loss of Property
  - iv. Interruption of operations
- b. Site-in-charge / Safety Officer will make periodical review of the site Fire Protection, Prevention Preparedness Programme, Site conditions and available fire protection equipment. It is very imperative that the Sub-contractors along with BHEL to establish good contact with Local fire station for availability of Fire tender in case of emergencies, in addition to their own fire equipment.
- c. Fire Protection, Prevention and Preparedness Inspections - The Contractor /Sub-Contractor will be required to make frequent fire prevention inspections of his work site and operating facilities. Deficiencies will be corrected at once.
- d. Area where Hot work activities are carried out (Gas cutting / Welding/ any other spark producing work)



above a working spot, a GI / fire-resistant non-asbestos sheet or suitable material shall be placed to prevent the fall of hot sparks. A bucket of water shall be kept nearby while doing hot work

- e. Hot work shall be preferably carried out in a designated area with a standing Hot Work Permit, to be renewed monthly. The designated area shall have fire extinguishers.
- f. Any hot work outside designated area shall require a Hot Work permit and fire watch. No flammable material shall be stored within 35 feet from any fire load.

## **12. PAINTING:**

- a. Requirements provide a detailed procedure to be implemented by all concerned employees and sub-contractors involved in painting activities.
- b. Significant Environmental Hazards:
  - i. Chemical hazard due to inhalation of lead fumes (lead containing paint)
  - ii. Chemical hazard due to inhalation of VOC's from painting operations
  - iii. VOC's from painting and coating operation
  - iv. Disposal of paints and coats drums
- c. Control Procedure for Painting:
  - i. Chemical products used in painting and coating operation shall have proper MSDS sheet in place. Whenever any doubt arises with respect to handling and safety point of view it should be accessed to all concerned.
  - ii. Toxic substances and hazards relate the toxic chemicals shall be identified.
  - iii. Proper PPE shall be used including plastic gloves appropriate overall etc.,
  - iv. Arrangement for cleaning of spillage shall be ensured
- d. Only trained workers shall be allowed and proper training should be imparted to the works.
- e. Exposure limits of the toxic substances shall be checked before starting the work and nobody shall be allowed to carry the work beyond the permissible limit.
- f. Ventilation or exhaust facility shall be provided at place where painting and coating operations are carried out.
- g. Overalls shall be supplied by the contractors/subcontractors to the workmen and adequate facilities shall be provided to enable the painters to wash at the cessation of work.
- h. Smoking, open flames or sources of ignition shall not be allowed in places where paints and other flammable substances are stored.
- i. A caution board in national /regional language "**smoking strictly prohibited**" shall be displayed in the vicinity.
- j. Suitable fire extinguishers/sand buckets shall be kept available at places where flammable paints are stored, handled or used.
- k. In case of indoor painting or painting in confined spaces, exhaust ventilating shall be provided. If adequate ventilation is not provided a proper respirator shall be provided and used by persons who are trained and fit tested.
- l. The VOC's from painting and coating operations shall not exceed the permissible level of CPCB/ SPCB norms. The paints and coats must be selected as per the guidelines.
- m. Workers shall thoroughly wash their hands and feet before leaving the work.



### **13. "HAZARDOUS ENERGY" CONTROL PROCEDURE/ LOCKOUT/TAGOUT (LOTO)**

Hazardous Energy Control Procedures, known as "Lockout/Tagout (LOTO)" refers to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service or maintenance activities.

Contractors must develop and submit a written LOTO program. This requires that a designated qualified individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance and that the authorized employee(s) either lock and tag the energy- isolating device(s) to prevent the release of hazardous energy and test the machine or equipment to verify that the energy has been isolated effectively.

#### **a. Minimum Requirements:**

The following are minimum requirements that must be included in the Contractor's LOTO program:

- i. Inspection of equipment by a trained individual who is thoroughly familiar with the equipment operation and associated hazards.
- ii. Identification and labeling of lockout devices. Purchase of locks, tags, and blocks Development of a standard written operating procedure, permitted through a controlling authority that is followed by all workers.

#### **b. General Requirements**

The following steps must be taken to protect workers that install or service equipment and systems:

Follow the hazardous energy procedures and statutory regulations. Follow the manufacturer's service/repair instructions. Identify and label all sources of hazardous energy. Before beginning work, accomplish the following:

- i. De-energize all sources of hazardous energy:
- ii. Disconnect or shut down engines or motors.
- iii. De-energize electrical circuits.
- iv. Block fluid (gas or liquid) flow in hydraulic or pneumatic systems.
- v. Block or secure machine parts against motion.
- vi. Block or dissipate stored energy.
- vii. Discharge capacitors.
- viii. Release or block springs that are under compression or tension.
- ix. Vent fluids from pressure vessels, tanks, or accumulators—but never vent toxic, flammable, or explosive substances directly into the atmosphere

- c. Lockout and tag out all forms of hazardous energy including electrical breaker panels, control valves, etc. Make sure that only one key exists for each of your assigned locks and that access to the key is controlled. Verify by test and/or observation that all energy sources are de- energized.
- d. After completion of the work, accomplish the following:
  - i. Inspect repair work before removing the lock and activating the equipment.
  - ii. Make sure that only the worker that installed the lock removes his/her assigned lock.
  - iii. Make sure that all workers are clear of danger points before re-energizing the system.

#### **e. LOTO Procedure**

##### **PURPOSE AND SUMMARY**

This procedure provides the requirements and responsibilities of Hazardous Energy Control and the process for Lockout / Tag out (LOTO) of energy isolating devices (valves, circuit breakers, disconnect, etc.). Its use



shall ensure that machinery, equipment, or systems are isolated from all potentially hazardous energy to prevent unexpected energization, startup, or release of stored energy which may cause personnel injury or property damage.

This procedure applies to all BHEL personnel and subcontractors working on the WBPDCL (1X660MW) STAGE-III projects where equipment must be taken out of service for the performance of work activities such as installation, maintenance, repair, construction, or equipment removal. The procedure may also be used to isolate equipment of which the energization or operation may present danger to personnel or property.

Lockout / tag out are not required for electrical equipment that can be unplugged from the source and the person performing the work has control of the plug.

This procedure shall be applied to prevent injury or damage caused by the unexpected release of active or stored energy. Hazardous energy sources could be in the form of the following:

- Electrical
- Hydraulic
- Chemical
- Thermal
- Mechanical
- Pneumatic

Preplanning of work activities includes the identification of all potential hazardous energy sources so that they may be properly controlled and isolated, locked, and tagged out.

Prior to initiating work activities on or around locked out / tagged out equipment, the equipment must be tested and tried by or in the presence of the person(s) performing the work activities.

### **RESPONSIBILITIES**

- The Engineers in Charge is responsible for implementing and enforcing this procedure and approving lockouts /tag outs that impact the operation of the project.
- The Engineer in Charges responsible for authorizing Lockout /Tag out Requests.
- The Lockout / Tag out Coordinator is responsible for maintaining the Lockout / Tag out Log. Each shift should have a designated Lockout / Tag out Coordinator.
- The Isolator is responsible for determining the proper isolation devices and device positions required to isolate all potential energy sources so that the work stated on the Lockout /Tag out Request Permit may be safely performed. The Isolator must be familiar with the equipment and energy type(s) that require isolation. For this reason, in some cases the Isolator may be more than one person (i.e. Engineer, System Operator and/or Electrician). The Isolator shall position the specified device points, and apply locks and tags, and sign the tags and the LOTO Permit isolation point blocks.
- The Safety Manager is responsible for conducting an annual audit that is documented to ensure all procedures and requirements are current and being followed as written.

### **DEFINITIONS**

#### **Affected Employee:** -

An employee whose job requires him/her to operate or use machinery or equipment on which servicing or maintenance is being performed under a lock out/tag out procedure or whose job requires him/her to work in an area in which servicing or maintenance is being performed under a lockout/tag out procedure

#### **Authorized Employee:** -



An employee who implements a lockout/tag out procedure on machinery, equipment, or systems in order that servicing or maintenance may be performed. Often an authorized employee and an affected employee may be the same person.

#### **Danger “Do Not Operate” Tag**

A tag used to identify energy isolation devices and specify the required position of the device. The tag should be affixed to the isolation device such that it is in plain view of anyone attempting to operate the device. The tags shall be sequentially numbered and shall specify the lockout/ tag out request number. The tag shall also state the purpose, and the expected duration of the lockout /tag out

#### **Isolation Device**

A device that is designed and intended to prevent the passage of energy. These devices, usually located at the energy source, are typically valves, circuit breakers, etc. Isolation devices should have a means of being locked in position

#### **Lockout Device**

A device that uses a positive physical means such as a lock, either key or combination type to maintain an energy isolation device in the safe position and prevent the inadvertent energization of machinery, equipment, or systems. Device locks should serve no other purpose other than hazardous energy control isolation

#### **Lockout Tag out Request Permit**

A pre-numbered form used to request that machinery, equipment or systems be taken out of service. A Lockout/Tagout Request Permit may be initiated by any one requiring energy isolation for work activities or for taking faulty equipment out of service

#### **Lockout / Tag out Request Log**

A record of all Lockout /Tag out Request Permits shall be maintained by the Lockout /Tag out Coordinator.

### **PROCEDURE**

#### **1. REQUESTING A LOCKOUT / TAGOUT PERMIT**

When machinery, equipment, or systems are partially or completely taken out of service for work activities or equipment protection, a lockout / tag out shall be requested. The requestor shall be familiar with scope of work required and shall provide a brief description of the work on the Lockout / Tag out Request Permit. The requestor shall also provide the proposed start time and estimated duration of lockout / tag out. If familiar with the machinery, equipment, or system to be taken out of service, the requestor may identify the devices that are required to be isolated. The LOTO Request Permit shall be forwarded to the Authorized Lockout / Tag out Coordinator for review and signature, along with Permit to Work number to be entered on the LOTO Request Permit.

- a. The Lockout / Tag out Coordinator shall record the necessary information on the Lockout / Tag out Request Log and forward the request to the Engineer in Charge for approval.
- b. The Safety Manager or Engineer in Charge shall review the Lockout / Tagout Request Permit for impact on project operations. Project operations could be impacted by the equipment being taken out of service or by the required isolation to take the equipment out of service. If project operations are impacted by the Lockout / Tagout, the request shall be forwarded to the Engineer in Charge for approval.
- c. The Engineer in Charge shall provide the lockout / tag out isolation points necessary to perform the task stated on the request. The device identification, device location, device position, and locking mechanism



shall be entered into the appropriate blocks on the Lockout / Tag out Request Permit.

- d. The Engineer in Charge indicates approval of the Lockout / Tagout Request Permit by signing in the appropriate space on the request. If the Lockout /Tag out Request Permit is rejected, the Engineer in Charge shall return it to the requestor, via the Lockout / Tagout Coordinator with a written explanation of the rejection.
- e. Once approved, the Lockout / Tag out Request Permit shall be forwarded to the Lockout / Tag out Coordinator to assign tags and locks.
- f. The log shall show current status of all Lockout / Tag out Request Permits from submittal to approval, through lifting of locks and tags to final closeout. The log shall be maintained by the Lockout / Tag out Coordinator in their office.

## **2. PLACEMENT OF LOCKS AND TAGS**

- a. The tags shall be filled out to match the information on the LOTO Request Permit. Appropriate locks for the types of isolation devices specified shall be collected and placed with the tags and the Lockout / Tag out Request Permit.
- b. The isolator(s) shall take the device locks, tags, and the Lockout / Tagout Request Permit to position the specified isolation devices, sign and hang the tags, and place the locks. If the isolator does not agree with or understand the Lockout / Tagout Request Permit, or has a problem performing the isolation, the problem should be brought to the attention of the Safety Representative or Area Supervisor immediately and the lockout / tag out should be postponed until the situation is resolved.
- c. Once the Isolator has placed all “locks” on isolation points, they will “test ”and “try” the machinery, equipment, or system to ensure all hazardous energy has been completely removed and the isolation is one totally accomplished, and has initialed and signed the Lockout /Tag out Request Permit indicating all isolation points have been confirmed. Examples of “lock”, “test” and “try”:
  - by checking that all locks on the LOTO Request Permit have been applied and are in the specified position open/closed, on/off, etc.; metering test of electrical circuits, opening of drain valves, checking pressure gauges or indicators; and try by pushing start buttons and on/off switches, etc.
  - Testing shall be performed by person(s) knowledgeable of the energy source(s) being isolated (e.g., an electrician should meter electrical circuits).
- d. A copy of the completed Lockout /Tag out Request Permit shall remain with the Work Package and used as part of the daily Pre-Job Briefings

## **3. WORKING UNDER A LOCKOUT / TAGOUT REQUEST**

- a. Prior to starting the work activity, the person(s) performing the work shall review the Lockout / Tag out Request Permit and place the necessary tags and personal locks on the identified isolation devices. Personal locks may be placed only on devices that have already been locked and tagged in accordance with the Lockout / Tag out Request Permit.
- All personal locks shall be accompanied by a tag that is signed and dated by the worker(s) and specifies the work activity being performed.
- Personal locks should be of a different color than device locks for ready identification.
- b. Verification of the effectiveness of the isolation by the Isolator shall be performed for Worker’s working under the lockout / tag out, by demonstrating the checks on “lock”, “test” and “try”,
- c. When the work activity is finished, personal locks and tags shall be removed and the Safety Representative



shall be notified that the Lockout / Tagout is no longer required. If work under a lockout / tag out is to be delayed or interrupted for a period in excess of 24 hours, personal locks shall be removed until the work restarts. Personal locks shall be removed prior to the worker(s) leaving the project at the end of shift unless the key(s) are maintained at the project.

#### **4. REMOVAL OF LOCKS AND TAGS**

- a. When the lockout / tag out is no longer required, the Safety Representative or Area Supervisor shall obtain the Lockout / Tagout Request Permit from the work package for LOTO removal. Prior to removing locks or tags that may allow equipment to be energized, a check shall be made to verify that the equipment is free to safely operate (i.e., will not cause damage or injury). The locks and tags shall be removed and returned to the Lockout / Tagout Coordinator. Isolation devices may be repositioned at the discretion of the Engineer in Charge according to operational requirements. The Isolator shall complete the Lockout / Tagout Request Permit indicating each lock and tag has been removed and the Safety Representative or Area Supervisor forward to the Lockout / Tagout Coordinator.
- b. The Lockout / Tagout Coordinator shall discard the tags and maintain the completed Lockout / Tagout Request Permit for future reference.
- c. In the event that an employee leaves the job site without removing the personal lock / tag, the following measures shall be taken and documented. The measures listed below are a minimum set of guidelines and under all circumstances, refer to the site-specific safe work plan for detailed procedures:
  - Attempt calling / contacting the employee to return to the site for removal.
  - In the event an employee cannot be contacted, the Site Manager and Safety Manager shall sign an Emergency Lockout/Tagout Removal Form, which has been completed by the Area Supervisor.
  - Employee shall be notified upon returning to the site, prior to beginning any work.

#### **5. INTERRUPTION OF A LOCKOUT / TAGOUT**

##### **Operational Emergency**

The Engineer in Charge / Safety Manager /Area Supervisor may deem it necessary to temporarily remove the locks and tags from isolation devices, prior to the end of the work activity. The standard procedure for removal of locks and tags shall be followed. Extreme caution shall be taken by the Isolator removing the locks and tags to prevent personnel injury.

##### **Testing**

When the performance of a work activity requires the functional testing of a machine, component, or system, the locks and tags may be temporarily removed in accordance with the tag removal, to perform the test. As a result of the testing, if it is determined that the equipment needs further work, the locks and tags shall be positioned back on to the device. If it is not necessary to replace all the locks and tags, then the unnecessary locks and tags may be returned to the Lockout / Tagout Coordinator. The Engineer in Charge shall initial the Lockout / Tag out Request Permit in the removal block to indicate that these locks and tags have been removed. When testing has been satisfactorily completed, the locks and tags shall be removed.

##### **ISOLATION DEVICES**

- In most industrial applications, there are isolation devices that were not designed to accommodate a locking device. In these instances, an acceptable alternative that physically obstructs or prevents the use of the isolation device shall be found. Chains shall be placed on valves or electrical panels. Wires shall be determinate, pulled back, taped, and secured.



- If an isolation device does not accept a lock, a tag only is acceptable; however, all possible precautions shall be undertaken to provide a level of safety for the workers. The tag shall be readily visible to anyone attempting to operate the device.
- If more than one Lockout / Tagout Request Permit requires that a single isolation device be locked and tagged, a lock and tag for each request shall be placed. Each lock in itself prevents the inadvertent operation of the device.

### **GROUP / COMPLEX LOCKOUT**

In a multiple lockout / tag out procedure, each person working on the machinery or equipment must place a lock or tag on the energy isolating device. If the energy isolating device will not accept multiple locks or tags, a hasp (a multiple lockout device, may be used. The locks or tags must be placed in such a way that energy cannot be restored to the machinery or equipment until every lock or tag is removed. As each employee involved no longer needs to maintain lockout / tag out protection that employee removes his - her lock and/or tag. The employee attaching the lock or tag is the only person authorized to remove the lock or tag.

### **6. TRAINING**

The training must include recognition of hazardous energy source, type and magnitude of energy available, methods and means necessary for energy isolation and control. Each authorized employee shall receive adequate training. The training should address that all affected employees are instructed in the purpose and use of the energy control procedure. There should be training provisions included for any other employee whose work operations are or may be in an area where energy control procedures may be utilized. The employee training should also address when tag out systems are used including the limitations of a tag (tags are warning devices and do not provide physical restraint). The training should also include that a tag is not to be removed without authorization. The tag is never to be ignored or defeated in any way. Retraining is required when there is a change in job assignments, in machines, a change in the energy control procedures, or a new hazard is introduced. All training and I or retraining must be documented with employee's name and dates of training.

### **7. PROGRAM REVIEW**

The lockout / tag out program must be reviewed at least annually. The review must ensure that procedures are being followed and that they are effective. A documented review of the inspection must include the date, the equipment, employees involved & the inspector. The inspector must be someone other than those actually using the lockout / tag out in progress.

#### **ATTACHMENTS**

##### **#1. Danger (DO NOT OPERATE) Tags**



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## #2. Device &amp; Personal Locks and Multi Lock Hasp:



## #3. Lockout / Tagout Request Permit

 <b>LOCKOUT / TAGOUT REQUEST PERMIT</b>		LOTO Request Permit No.:						
		Work Permit No.:						
Equip. Out of Service:	LOTO Date Required by: ____ / ____ / ____	Estimated Duration:	<b>LOTO Requested</b> Date:					
Scope of Work:				<b>LOTO Authorization</b> Signed by: Date:				
				<b>LOTO Removal Authorization</b> Signed by: Date: Time:				
Tag No.	Device to be Tagged / Locked I.D. No.	Device Location	Device Position OPEN / CLOSE D -	Lock No.	Tag/Lock Placed by Print/Sign - Date/Time		Tag /Lock Removed by Print/Sign - Date/Time	
Comments Instructions:					<b>Attachment 3.Lockout / Tag out Request Permit:</b>			

## #4. Lockout / Tag out Request Log

LOTO Permit No.	Request or Name	Equipment & Location	Est. Work Completed Date	Approval Date	LOTO Placed Date	LOTO Removed Date	Comments



## 14. RISK ASSESSMENT

### Risk and Hazard Analysis

In order to produce an overall Project EHS Plan, a project must be assessed for its risks. There are two components to the risk and hazard analysis. The procedure used to examine and plan for the identified risks and hazards is called a General Hazard and Risk Assessment.

### JSA/HIRA review

Prior to commence the following activities Method statement and JSA/HIRA to be prepared by the concern engineer in coordination with EHS officer and submit to the client for review and approval. After getting approval the work will be started under PTW after clearance. For HIRA and criteria for the defining the high, medium & low risk the relevant annexure be referred. In case any deviations required in the approved method statement the concerned engineer/supervisor has to prepare additional HIRA/JSA to cover the new activities and associated risk. Following activities to be covered,

- Deep excavation (more than 5 feet)
- Significant concrete pouring (like heavy foundation, TG deck, Slab casting etc.)
- Confined entry
- Blasting
- Working on electrical/ energized equipment's
- Steel erection more than 5-Ton weight
- Working at height prior to completion of stairs/ladders/hand railing etc.

#### **Definition:**

**HAZARD** - Any potential or present danger to persons or property within the project site, e.g., oil on the floor is a hazard.

**INCIDENT** - An unintended happening that may result in injury, loss or damage, e.g., Slipping on the oil is an Incident.

**INJURY** – Physical harm, the result of an Incident, e.g., a sprained wrist from the fall would be an injury.

#### **Hazard Analysis Document**

- For high risk and dangerous work identified, the Applicant shall complete and submit a Hazard Analysis Document together with the PTW request. It will be a JSA (Job Safety Analysis) or Preliminary Hazard Analysis Checklist. And it shall be reviewed and approved by respective Construction and HSE Representatives.
- Issues such as work interface, coordination, drawings, toolbox meetings and work type/duration shall be detailed and included with supporting documentation for the Applicant's request for PTW.
- If applicable, Hazard Analysis Document shall be used as the foundation for development of Safe Work Method Statement. Each hazard identified shall be addressed in the Safe Work Method Statement and be submitted as part of the Applicant's submittal package.

#### Evaluation of Sub-contractor Risk Assessments includes

- Experience and expertise in performing similar type work.
- Duration of work performed
- Location of the work to be performed.



- Nature of the work to be performed.
- Potential for a subcontractor performing the work to expose themselves, other persons or employees, to hazards.
- Potential for exposure to work site hazards.

#### **Review of Subcontractor specific issues**

Preventive and protective measures must be introduced according to the following order of priority

- Eliminating the hazard by removing the activity from the work process. Examples include substitution with less hazardous chemicals, using different manufacturing processes, etc.
- Controlling the hazard at its source through use of engineering controls. Examples include local exhaust ventilation, isolation rooms, machine guarding, acoustic insulating, etc.
- Minimizing the hazard through design of safe work systems and administrative or institutional control measures. Examples include job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc.
- Providing appropriate personal protective equipment (PPE) in conjunction with training, use, and maintenance of the PPE.

### **15. HSE PREPAREDNESS FOR ADVERSE CLIMATES AND WEATHER**

All Preventive and Precautionary measures to ensure Health & Safety of workers in all possible adverse weather conditions based on the analysis of the local area conditions to be taken by the subcontractor

#### **15.1 SUMMER**

1. The Working Time and Lunch Hour will be as per instruction of Statutory Authorities (no work between 11am to 3:30pm). However, in case temp comes down due to rain/cloudy weather work will continue as per normal routine.
2. During long lunch break, worker will be allowed to go back home for rest. Those who will like to stay back will avail at the facility of rest shed or other designed area.
3. They will be allowed to take small break during work as per their need.
4. Water sprinkling will be done on roads to reduce dust concentration.
5. Workers will be provided with adequate cool drinking water and Butter milk/Lemon water etc.
6. Adequate ORS stock will be made available at the work location in the First-Aid Box for use as needed and at First-aid Centre for emergency need.
7. Fire prevention shall be on high alert, with removal of dry grass and bushes, etc, inside and outside the surrounding work areas. No smoking, and control of open flame/sparks shall be maintained and monitored.
8. Worker will be informed about the Do's and Don'ts to be followed during summer in the Pre Job Brief.

#### **Dos & Don'ts**

1. Drink plenty of cool water and other non-alcoholic fluid and keep body well hydrated.
2. Eat salt in food to replenish loss of salt through sweating.
3. Avoid over physical exercise.
4. Have adequate sleep at night.
5. Eat light and less spicy food
6. Avoid eating food which was cooked long time ago.



7. Nobody should use small water bodies such as pits, running rain water through crevices etc. for drinking and cleaning purpose as it may be unhygienic.

### **Emergency Handling**

In case of emergency due to heat disorder:

1. Rescue the victim from workplace and place under shed.
2. If to be rescued from height, use stoke basket or rescue kit.
3. Inform Ambulance immediately.
4. If nearby any air conditioned room/shed is available, place him inside the room/shed.
5. Administer First aid by trained First aider for Heat Disorder
6. If conscious, give him ORS solution to drink.
7. If required send the victim hospital immediately.

## **15.2 MONSOON**

### **A. Height Work & Structural Safety:**

1. Ensure that all height work platforms are barricaded and avoid any highly hazardous
2. Height work.
3. Ensure that all personnel have good quality and intact safety shoes
4. Stop all dangerous height work during rain
5. Explain Do's and Don'ts to workers during Tool Box Meetings
6. Ensure that there are no weak structures, boards etc. that can fall during high winds
7. Do not allow any loose material (e.g. GI sheet, Ply board, empty cement bag, aluminium foil, foam sheets etc.) on roof sheds or top of structures.
8. Do not permit any one to ride up or come down scaffolds frame work during heavy wind or rain.
9. Provide "anchor" of adequate strength to scaffolds and other high-rise structures.
10. All rest sheds and GI sheds will be anchored into the round and wall and roof panels will be secured with J hook to prevent shed from blowing over or parts/pieces becoming airborne. Proper earthing per IS standard is also to be installed.
11. Do not go alone nor permit anyone to stay at tower-tops, roof-tops, high structures or on electrical poles during the course of stormy weather or heavy rain.

### **B. Electrical:**

1. All electrical connections / loads have to be routed through ELCB / RCCB (residual current circuit breaker) whose rating should be 30mA.
2. RCCB operational checks need to be done DAILY / WEEKLY during monsoon season.
3. Avoid joints on power cables which need to be laid over-head or under-ground, better not to have any joint at all. In case joints become essential, such cables must be housed rigidly and insulation must be provided as per approved standard. The joint shall be suitable for outdoor use.
4. All electrical distribution board shall be properly covered at top and sides to protect from rain water. Extension boards shall be protected from rain water.
5. Ensure proper "earthing" for each and every electrical appliance.
6. Double earthing need to be provided for 3-phase power supply and for voltage more than 220V.



7. Provide lightening arrestors at the top of Boiler 3 and boiler 4 and rest sheds which are not covered by existing lightening arrestor of other installation.

**C. Others:**

1. Maintain smooth flow on open drains. i.e. no obstruction or blockade shall be made on storm water drains. If required, make temporary drains.
2. Arrange back-filling of excavated pits on war-footing basis.
3. Arrange bringing down booms of all cranes, hydra machines during stormy weather (wind speed 40-50 km/hr)
4. Confirm that all gantry cranes are effectively choked to prevent rolling and toppling.
5. Do not forget to deep ready a few battery operated lights at site-offices during rainy season.
6. Avoid using wet damp clothes.
7. Hard Barricade excavated zone filled with water with scaffolding pipe & clamp with reflective net
8. Engage diesel operated water pump to dewater work area. For electrically operated water pump, the starter shall be protected from rain water. All rotating parts shall be guarded. Ensure availability of sufficient water pumps.

**D. Health and hygiene:**

1. Monsoon reduces the immunity of our body and makes us vulnerable to many diseases which are commonly associated with this season. It is time for us to keep our body challenging against disease by boosting our immunity and taking safety measures against these diseases.
2. The diseases associated with monsoon are Malaria, Jaundice, Gastro-intestinal infections, like typhoid, cholera etc. apart from these viral infections like cold and cough also make their presence felt. Majority of above said diseases are on account of:
3. Puddle of water formed due to rain become breeding grounds for mosquitoes which spread disease like, malaria and dengue fever. As a precautionary measure against mosquito-bite disease one can use mosquito net around the end which is better choice to mosquito repellents like mats and coils.
4. Pollution of drinking water during monsoon is very common. It is very necessary to drink clean and pure water when water-borne monsoon diseases like diarrhoea and gastro-intestinal infections threaten us.
5. Walking in dirty water during rainy season leads of numerous fungal infection which affect toes and nails. Diabetic patients have to take a special care about their feet. Keeping feet always dry and clean is very necessary. Avoid walking in dirty water. Keep shoes socks and raincoats dry and clean.

**E. Workmen will be made aware of following Do's and Don'ts:**

1. Do not sleep in daytime.
2. Avoid over physical exertion.
3. During lightning and thunder storm, do not take shelter under tree. Take shelter inside rest shed or store room.
4. Wash vegetables with clean water and steam them well to kill germs.
5. Avoid eating un-cooked foods and salads should be washed properly before consumption.
6. Drink plenty of water and keep body well-hydrated.
7. Always keep the surrounding area dry and clean. Don't allow to get water accumulated around.
8. Keep body warm as viruses attack immediately when body temperature goes down.



9. Do not enter air conditioned room with wet hair and damp cloths.
10. Dry your feet and webs with soft dry cloth whenever they are wet.
11. Eat light and less spicy food.
12. Avoid eating food which was cooked long time ago.
13. Eat salt in food to replenish loss of salt through sweating.

### **15.3 EMERGENCY WEATHER CONDITIONS**

#### **Cyclone/Severe thunder storm**

In the event of Cyclone/Severe thunder storm, alert will be issued by subcontractor on notification received by Govt. authorities/Metrological departments Customer or BHEL.

#### **The actions required during cyclone/rough weather:**

1. Check and advice subcontractors to clean-up work area. Pick up all loose and unused material of respective supervisor's area.
2. Tie to secure all gas cylinders to avoid displacement and unsafe conditions which could be due to wind pressure.
3. Secure portable electricity generating sets and other equipment, pumps, hoses etc.
4. Make preparation for removal of water logging.
5. Take review of work activity and make preparation for removal of equipment and material from vulnerable areas.
6. Isolate/turn off all electrical power from the main panel/switches. Secure and anchor panels properly.
7. Recheck anchorage/tie of all temporary structures/sheds, tall objects, cranes, rigs, scaffolds etc. to avoid toppling due to wind force.
8. Cranes boom shall be secured, either locked or lowered the booms as reasonably and practicably possible and rigs to safe position for the safety point of view.
9. Group up all trash barrels, wooden pallets, forms; wooden decks etc. and anchor properly.
10. Welding machines, air compressors and such equipment are to be grouped together and secured to the stable objects. Welding leads, electrical cables, hoses are to be rolled up and secured properly.
11. Set on site vehicles on high ground in the site area with brakes set firmly.
12. Anchor all tanks, vessels, gas cylinders that may be moved by high wind and water.
13. Evacuate job site.

#### **Personnel Evacuation:**

1. Personnel Evacuation will be required if predicted wind speed and storm surge heights are beyond acceptable limits as per the instructions from Govt. Authorities/ Metrological departments or Customer.
2. Once the warning is received for personnel evacuation, an emergency response team shall be formed. The team will work with local authorities and other agencies formed/deployed to evacuate and transport all personnel involved in the project to the cyclone shelter.
3. Cyclone may be followed by the calm "EYE", be aware of it. If the wind suddenly drops, don't assume the cyclone is over. Violent wind may resume from the opposite side direction. Wait for the official "All clear Signal".



4. After the cyclone, do not go outside until officially communicated about safe situation outside. Use recommended routes for returning. Do not panic or rush while returning.
5. Checking of gas leaks and well-being of electrical appliances is essential before leaving the site.
6. Follow local communications for official warning and advice. The construction Manager shall also obtain updates from customer/metrological departments and communicate to the personnel on project site.

#### **15.4 PREVENTION OF COVID-19 (COVID-19 HERE TO BE READ AS COVID-19 AND OTHER PANDEMICS/ COMMUNICABLE DISEASES) AT PROJECT SITE & LABOUR COLONY:**

Resumption of Construction Activities after Lock Down and Prevention of Coronavirus Infection during Site Operations and OCP 61A: Prevention of COVID-19 Infection in Labor Colony will be strictly followed.

##### **A. Preventive measures at project site:**

- BHEL and Agencies shall nominate COVID Marshalls, who will be responsible for monitoring the COVID prevention measures and apprising management on the same.
- Mandatory health check-up for every worker/ official joining the site
- All activities to be carried out using least amount of paperwork and physical proximity as far as possible.
- ***HSE Observer App*** to be used to monitor HSE Activities and follow up with agencies for closure of non-conformities.

##### **a. Strict Control at the Gate/ Banning Entry to Anyone Not Wearing Masks**

- i. Security personnel at the gate may erect a barricade preferably approx. 10 meters from the gate and only allow personnel who are wearing proper masks inside.
- ii. Public address system may be used to warn any non-compliant visitors
- iii. Near entry gate, round markers at minimum 1-meter distance to be ensured so that distancing is ensured
- iv. A hand-wash or hand sanitiser facility is preferable at the gate to allow entry after hand wash or hand sanitisation. These are also to be provided at key locations to enable hand wash / hand sanitisation before starting work, before eating, etc.
- v. Gutkha, Paan, tobacco etc. to be banned from the site. Spitting to be strictly prohibited.

##### **b. Screening at Gate with Contactless Thermometer & Action on Suspected Cases**

- i. Security Personnel at the Gate to screen each person entering the premises using a non-contact infrared thermometer, which is duly serial numbered and calibrated.
- ii. In case any site worker/ official is found to have fever more than 99 Degrees Fahrenheit or found coughing/ sneezing, he/she may be advised rest till recovery and entry to be permitted after obtaining clearance from medical officer/assistance/attendants.
- Parcel to be collected from gate by concerned person preferably with provision of Special Box
- Any construction material received at site, unless properly sanitized, to be kept undisturbed for at least 3 days and to be used only after that period.
- During Toolbox Talks, minimum 1-meter distance between any two workers to be ensured

##### **c. During site execution activities:**

For all site execution activities, social distancing is to be maintained. In case this is not possible due to nature of work, speciality of work, etc, ensure sensitisation of the labour/staff involved and use of appropriate PPEs, especially mandatory face mask. In any case, close working to be allowed only in special



circumstances and ensuring these activities are preferably time staggered to the extent possible

**d. In office premises:**

- i. Sharing of items like pens, water bottles etc. in office premises to be avoided
- ii. Doors preferably to be in open condition to avoid contact
- iii. All common touch points to be frequently disinfected in a day.

**e. Regular disinfection of all Areas, Equipment and facilities**

- i. A dedicated disinfectant gang to be identified for the task by each agency. The disinfectant gang to be provided full body suits for the task.
- ii. All areas (including office premises, site areas, chairs, tables, furniture etc.), tools & equipment to preferably be disinfected by dedicated gang every day before resumption of work.
- iv. Common touch points like handrails, lift buttons, door/window knobs or handles, vehicle door handles, taps, conference room & dining hall tables/chairs, common sofas/chairs, visitor sofa/chairs, files & folders, etc to preferably be disinfected regularly at frequent intervals every day.
- v. Pool vehicles, to be disinfected after every use. Social distancing to be maintained inside the common pool vehicles as per Govt./ statutory body guidelines.

**f. Disinfecting the operator/driver touch points of Vehicles/cranes, T&Ps etc.**

Disinfection to also be carried out for all Cranes, Vehicles, Equipment, consoles, T&Ps etc. which come into contact with operating personnel.

**g. Posters on COVID-19**

Sufficient Posters on COVID-19 to be ensured across the site in languages understood by most workers.

**h. Brief guidelines for hand washing are as below:**

- i. Soap to be provided at each wash basin and replenished regularly.
- ii. Washing with soap for at least 20 seconds is recommended.
- iii. As a general guideline, for every 100 workers, 1 wash-basin may be provided at site areas.
- iv. Close queue to be avoided near wash-basins and 1-meter distance to be maintained. Round markers at 1-meter distance can be ensured as guidance

**Composition of Disinfectant:**

- i. Readily available 1% hypochlorite solution or 4%
- ii. Liquid chlorine-1% solution
- iii. Surgical spirit-95% alcohol content
- iv. Hand sanitizer should have: Isopropyl alcohol-75%, Glycerol-1.45%, Hydrogen Peroxide-0.125%

**B. Prevention of COVID-19 Infection in Labor Colony:**

- Spacing of minimum 2 meters between living areas of workers inside a room may be maintained. Preferably, the living area of each worker may be partitioned using sheet of cloth, plastic etc.
- Rooms to be properly ventilated as far as possible
- Sanitation to be given prime importance and personal hygiene to be promoted
- Face masks shall be worn by everyone inside the colony premises
- Spitting of Pan. Gutkha etc. inside the colony and urinating etc. outside the toilets to be strictly avoided
- Regular visits by Doctors to the labor colony can be arranged on non-working day for check-up of all workers
- **Identification of “COVID Wardens” (CWs) by each agency for maintaining the following:**

- i. Keeping an eye on the health of workers and report any suspected cases of fever, coughing etc. to the



management

ii. Keeping an eye on the social distancing measures in the labor colony and report any non-conformances to the management.

iii. Educate the workers about social distancing and COVID prevention measures.

- Training/ Awareness regarding COVID-19 to be provided to workers regularly.
- Workers to be instructed to maintain social distancing of minimum 1 m at all time
- **Posters on COVID-19:** Sufficient Posters on COVID-19 to be ensured across the labor colony in languages understood by most workers.
- All workers to be instructed to inform any suspected cases of illness (individual or others) to an emergency contact number of CW, the emergency contact numbers and CW contact numbers to be displayed at prominent locations

• **Inspection & Review**

- i. Daily Inspection by concerned COVID Wardens and reporting to Agency
- ii. Regular inspection by Agency & BHEL

## 15.5 Noise Mitigation

High noise is harmful to the human health and it can cause impairment if exposed for long duration at regular intervals, and also cause disruption in nearby communities.

- Noise monitoring shall be carried out in all construction locations periodically.
- Use of silent DG is allowed at site during construction.
- Low noise generation equipment's to be preferred.
- Work areas where noise levels exceed the 85db shall be posted as hearing protection required.
- Use of PPEs / ear plug/ear muff for personnel entering into high noise area.
- Activities generation High noise will be planned in day shift.

### **Noise Level Chart**

Parameter	Night Noise level dBA	Daytime Noise Level dBA
At 1-meter from each piece of equipment	85	85
At Property boundary	70	70



## ANNEXURE J

### First-Aid Box

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**Details & Contents of First Aid Box as per Contract Labor (Regulation & Abolition Act), Central Rules, 1971**

(1) The first-aid box shall be distinctively marked with a Red Cross on a white background and shall contain the following items, namely:

**(a) For establishments in which the number of contract labor employed does not exceed fifty, each first aid box shall contain the following equipment:**

(i)	6 small sterilized dressings
(ii)	3 medium size sterilized dressings
(iii)	3 large size sterilized dressings
(iv)	6 pieces of sterilized eye pads in separate sealed packets.
(v)	6 roller bandages 10 cm wide.
(vi)	6 roller bandages 5 cm wide.
(vii)	One tourniquet
(viii)	A supply of suitable splints
(ix)	Three packets of safety pins.
(x)	Kidney tray.
(xi)	3 large sterilized burn dressings.
(xii)	1 (30ml) bottle containing a two percent alcoholic solution of iodine
(xiii)	1 (30 ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label
(xiv)	1 snake bite lancet
(xv)	1 (30gms) bottle of potassium permanganate crystals.
(xvi)	1 pair scissors
(xvii)	1 copy of the First-Aid leaflet issued by the Director General, Factory Advice Service and Labor Institutes, Government of India.
(xviii)	A bottle containing 100 tablets (each of 5 grains) of aspirin
(xix)	Ointment for burns
(xx)	A bottle of suitable surgical anti-septic solution

**(b) For establishment in which the number of contract labor exceeds fifty each first-aid box shall contain the following equipment:**

(i)	12 small sterilized dressings
(ii)	6 medium size sterilized dressings
(iii)	6 large size sterilized dressings.
(iv)	6 large size sterilized burn dressings
(v)	6 (15 grams) packets sterilized cotton wool
(vi)	12 pieces of sterilized eye pads in separate sealed packets.
(vii)	12 roller bandages 10 cm wide.
(viii)	12 roller bandages 5 cm wide.
(ix)	One tourniquet.
(x)	A supply of suitable splints.
(xi)	Three packets of safety pins.
(xii)	Kidney tray.
(xiii)	Sufficient number of eye washes bottles filled with distilled water or suitable liquid clearly indicated by a distinctive sign which shall be visible at all times.
(xiv)	4 per cent Xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops.
(xv)	1 (60ml) bottle containing a two percent alcoholic solution of iodine
(xvi)	One (two hundred ml) bottle of mercurochrome (2 per cent) solution in water.
(xvii)	1 (120ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label.
(xviii)	1 roll of adhesive plaster (6 cmX1 meter)
(xix)	2 rolls of adhesive plaster (2 cmX1 meter)
(xx)	A snake bite lancet.
(xxi)	1 (30 grams) bottle of potassium permanganate crystals.
(xxii)	1 pair scissors
(xxiii)	1 copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labor Institutes, Government of India.
(xxiv)	a bottle containing 100 tablets (each of 5 grains) of aspirin
(xxv)	Ointment for burns
(xxvi)	A bottle of a suitable surgical anti septic solution.

(2) Adequate arrangement shall be made for immediate recoupment of the equipment when necessary.



## ANNEXURE K

### Vertigo Test

Rk

## Vertigo Test Procedure/ Guidelines

This document specifies minimum requirements for vertigo test. These may be supplemented by any additional requirements deemed fit by the medical examiner/ HSE department)

Fear of height may be physiological or psychological. Therefore, to rule out any possibility of physiological factor, detailed medical check-up of workers is carried out before vertigo test. Medical check-up of workers includes the following:

history of past illnesses (like epilepsy, drug allergy, diabetics/ hypertension, unconsciousness etc.), general physical examination (like height, weight, BMI, build and nourishment etc.), measurement of pulse rate, Blood Pressure, respiratory rate.

After this check-up, those who are found suitable for height work by examining doctor, are allowed to undergo vertigo test.

During this health check-up, psychology of workers is also studied. If any worker finds it extremely difficult/ frightening to climb the monkey ladder & walk on the beam, during/after performing vertigo test or even before performing, then he is treated as disqualified.

As per standard, during vertigo test, worker is allowed to climb on a foundation through monkey ladder, walk on a beam, then steps down at the other end of beam, through monkey ladder. Height of the beam should be at least six feet from ground level. All necessary safety precautions are taken during this test. Worker has to wear full body harness with double lanyard. A horizontal lifeline is run parallel to the beam and worker has to put his lanyards into the lifeline. Additionally, a safety net is also put below the beam for rescue of the victim in case of a fall from beam.

### **Following activities are suggested to be carried out during testing:**

#### **1. Walking Bench Training:**

- a. Person should walk over the channel. He should maintain balance & walk without much problem.
- b. If the person has problem to balances himself on repeated chances, he may be having flat foot or some other problem. So, he may not be fit for height work.

#### **2. Rope Climb Training:**

Person should be able to climb the rope up to the top channel for ensuring that in case of fall, a person hanging on the safety harness, will be able to safely climb back to the platform within minimum time period before the safety harness start breaking down under the load.

#### **3. Height Work Training:**

Person should walk freely on the middle channel while holding the top channel with the help of safety harness.

#### **4. Ladder for Vertical fall arrestor Training:**

Vertical fall arrestor rope is fixed from top to bottom of the ladder. It will ensure:

- Usage of vertical fall arrestor.
- Usage of two lanyards of a safety harness.
- Ensure 3-point contact on the ladder while climb.

#### **5. Chair for work at height Training:**

- Climb though vertical ladder with two lanyard ropes.
- Hooking of two lanyard ropes to life line. With this safe arrangement, he can walk to chair.
- Sits in the chair safely, comes out & walks back to the vertical ladder & come down from vertical ladder. After completion of vertigo test, blood pressure of worker is again measured. If it is not within acceptable limits for any worker, concerned worker is denied height pass.

Only those who pass the above training are to be considered as fit for height work.

