



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

Page 1 of 22

Ref: PSER:SCT:NKP-F2002:7738

Date: 02-01-2020

**NOTICE INVITING TENDER**

**NOTE: INTENDING BIDDER TO PARTICIPATE MAY DOWNLOAD FROM WEB SITES**

Sealed offers are invited from reputed & experienced bidders meeting **PRE QUALIFICATION CRITERIA** as mentioned in Annexure-1 through **E-Procurement Portal** <https://bhel.abcpurchase.com> only for the subject job by the undersigned on the 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.

**1.0 Salient Features of NIT**

SL NO	ISSUE	DESCRIPTION
1.0	TENDER NO	<b>PSER:SCT:NKP-F2002:19</b>
2.0	NAME OF JOB	PROVIDING ONE (1) NUMBER TOWER CRANE AS PER TECHNICAL SPECIFICATION, FOR 3X660 MW BHEL NORTH KARANPURA SITE ON MONTHLY RENTAL BASIS.
3.0	DETAILS OF TENDER DOCUMENT	
3.1	Volume-I	General conditions of contract- <b>Applicable</b> .
3.2	Volume-IB	General conditions of contract (service) - <b>Not applicable</b> .
3.3	Volume-IC.	Special conditions of contract (supply) – <b>Not applicable</b> .
3.4	Volume-ID.	Special conditions of contract (service) – <b>Applicable</b> (clubbed with Volume-II).
3.5	Volume-IE.	<b>Not applicable</b> .
3.6	Volume-II.	Technical specification along with Special conditions of contract- <b>Applicable</b>
3.7	Volume-III.	Price schedule, Rev-00 - <b>Applicable</b> .
4.0	ISSUE OF TENDER DOCUMENTS	<b>This is an E-tender floated online through our E-Procurement Site <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a>. Start date of the tender: 02-01-2020.</b>
5.0	DUE DATE & TIME OF OFFER SUBMISSION	<b>Date: 16-01-2020, Time: 15-00 Hrs.</b> <b>The bidder should respond by submitting their offer online in our e-Procurement platform at <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a> only.</b> <b>Offers are invited in two-parts only.</b> <b>Hard copy bid or bids through email/ fax shall not be accepted.</b>
6.0	OPENING OF TENDER	<b>Date: 16-01-2020.</b> <b>1 hours after the latest due date and time of Offer submission</b> <b>Notes:</b> <b>(1) In case the due date of opening of tender becomes a non-working day, tenders shall be opened on next working day at the same time.</b>
7.0	EMD AMOUNT	<b>Rs 13,46,250/-</b>
8.0	COST OF TENDER	<b>Rs 5,000/-</b>
9.0	LAST DATE FOR SEEKING CLARIFICATION	<b>Date: 12-01-2020</b> <b>Along with soft version also, addressing to undersigned &amp; to others as per contact address given below</b>
10.0	SCHEDULE OF Pre Bid Discussion (PBD)	<b>Not Applicable</b>

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11.0	INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)	<i>Applicable</i> <b>IEM DETAILS:</b> <i>Refer Clause No 34.0 below.</i>
12.0	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 & <b>CPP portal</b> →Tender Notice) & <b>E-Procurement Site</b> <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> and not in the newspapers. Bidders to keep themselves updated with all such information.

- 2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly digitally signed, as part of offer. Rates/Price including discounts/rebates, if any, mentioned anywhere/ in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.
- 3.0 Unless specifically stated otherwise, bidder shall remit cost of tender (non-refundable) and courier charges if applicable, in the form of Demand Draft drawn in favour of Bharat Heavy Electricals Ltd, payable at Kolkata, issuing the Tender, along with techno-commercial offer. Bidder may also choose to deposit the Tender document cost by cash at the Cash Office, on any working day; and in such case copy of Cash receipt is to be enclosed with the Techno Commercial offer.
- 4.0 Unless specifically stated otherwise, bidder shall have to deposit EMD through Demand Draft/Pay Order in favour of Bharat Heavy Electricals Ltd, payable at Kolkata. For other details please refer General Conditions of Contract.

Bidders may please be noted that "OEMD" provision stands deleted. Hence, bidders who have deposited Rs. 2 Lakh as OEMD are also requested to submit fresh EMD as mentioned in sl no 7.0 under clause no 1.0 of NIT.

- 5.0 Procedure for Submission of Tenders: The Tenderers must submit their Tenders as detailed below:

#### DOCUMENTS TO BE UPLOADED & MODALITY OF UPLOADING

Sl no	Description	Remarks
PART-I A	(TECHNO COMMERCIAL BID)	
	CONTAINING THE FOLLOWING:-	
i.	Covering letter/Offer forwarding letter of Tenderer. <b>(To be attached in relevant Attachment section)</b>	
ii.	Duly filled-in 'No Deviation Certificate' as per prescribed format. <b>(To be attached in relevant Attachment section)</b>  <u>Note:</u> a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be <b>attached in relevant attachment section of the e -procurement portal</b> . It shall be specifically noted that deviation recorded elsewhere shall not be entertained.  b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding. i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL	

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	ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender	
iii.	Supporting documents/ annexures / schedules/ drawing etc as required in line with Pre-Qualification criteria.  It shall be specifically noted that all documents as per above <b>shall be attached in relevant attachment section</b> and credential certificates issued by clients shall distinctly bear the name of organization, contact ph no, FAX no, etc.	
iv.	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc pertinent to this NIT. <b>(To be attached in relevant Attachment section)</b>	
v.	Integrity Pact Agreement (Duly signed by the authorized signatory)	Applicable.
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification/NIT <b>(To be attached in relevant Attachment section)</b>	
vii.	Notice inviting Tender (NIT) <b>(To be attached in relevant Attachment section)</b>	
viii.	Volume – I : General Conditions of Contract (GCC) <b>(To be attached in relevant Attachment section)</b>	
ix.	Volume – II : Technical specification along with Special conditions of contract <b>(To be attached in relevant Attachment section)</b>	
x.	Volume–III – Schedule-I- (UNPRICED – without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item. <b>(To be attached in Unpriced Bid Attachment section)</b>	
xi.	Any other details preferred by bidder with proper indexing. <b>(To be attached in relevant Attachment section)</b>	

<b>PART-I B</b>	<b>EMD/ COST OF TENDER</b>	
	<b>CONTAINING THE FOLLOWING:-</b>	
i.	1. Earnest Money Deposit (EMD) in the form as indicated in this Tender  2. Cost of Tender (Demand Draft or copy of Cash Receipt as the case may be)	

<b>PART-II</b>	<b>PRICE BID</b> <b>(TO BE ATTACHED IN PRICE BID ATTACHMENT SECTION)</b>	
	<b>CONTAINING THE FOLLOWING:-</b>	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume III – PRICE BID- – Schedule-I- (Duly Filled in Schedule of Rates – rate/price to be entered in words as well as figures)  Any other document uploaded in the price bid, apart from above tender format, shall not be taken into cognizance for evaluation of offer.	

#### 6.0 SPECIAL NOTE:

- A) Your offer & documents submitted along with offer shall be digitally signed & stamped in each page by your authorised 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) The credentials/documents submitted towards compliance of Pre-qualification requirement shall be physically signed by the authorized signatory & stamped before uploading/submission with the offer in the e-procurement portal.

- C) All documents/ annexures submitted with the offer shall be properly attached in the respective sections. BHEL shall not be responsible for any missing documents.
- 7.0 No Deviation with respect to tender clauses and no additional clauses/ suggestions/ in Techno-commercial bid/ Price bid shall normally be considered by BHEL. Bidders are requested to positively comply with the same.
- 8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).
- 9.0 Since the job shall be executed at site, bidder must visit site/work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions. No additional claim shall be entertained by BHEL in future, on account of non-acquaintance of above.
- 10.0 For any clarification on the tender document, the bidder may seek the same in writing, through e-mail or through E-Procurement Site <https://bhel.abcpocure.com>, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.
- 11.0 BHEL may decide holding pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 12.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.
- 13.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.
- 14.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (11.0) of 1 above.
- 15.0 The Bidder has to satisfy the Pre Qualifying Requirements (as applicable) stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of pre-qualification evaluation/ techno-commercial bids, approval/ acceptance of customer (as applicable), etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.
- 16.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the PRICE BID shall be intimated to the qualified bidders and in such a case, price bid (Volume-III) uploaded in E-Procurement Site <https://bhel.abcpocure.com> will be opened.
- 17.0 Validity of the offer shall be for six months from the latest due date of offer submission (including extension, if any) or specified otherwise in the tender.

- 18.0 BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on [www.bhel.com](http://www.bhel.com)) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

However, if reverse auction process is not adopted or is unsuccessful for whatsoever reason, absolute value price bid (volume-III) uploaded in E-Procurement Site <https://bhel.abcpocure.com> will be opened for deciding the successful bidder. BHEL's decision in this regard will be final & binding on bidder.

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).

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 L 1 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.

If it is found that L 1 bidder has quoted higher in online seal bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://www.bhel.com)).

As a reminder to the bidders, system will flash following message (in Red Color) during the course of 'online sealed bid':

"Bidders to submit online sealed bid less than or equal to their envelope sealed bid already submitted to BHEL"

In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

- 19.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.
- 20.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.
- 21.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.
- 22.0 In case Consortium Bidding is allowed as per Pre Qualifying Requirement, then Prime Bidder and Consortium Partner shall enter into Consortium Agreement. Validity period of Consortium Agreement shall be 6 months after which the same can be re validated.
- 'Stand alone' bidder cannot become a 'prime bidder' or a 'consortium bidder' in a consortium bidding. Prime bidder shall neither be a consortium partner to other prime bidder nor take any other consortium partners. However, consortium partner may enter into consortium agreement with other prime bidders. In case of non compliance, consortium bids of such Prime bidders will be rejected.
- 23.0 The bidder shall submit documents in support of possession of 'Qualifying Requirements' duly self certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.

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- 24.0 The bidder may have to produce original document for verification if so decided by BHEL.
- 25.0 The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL Website ([www.bhel.com](http://www.bhel.com)).

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

a) 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.

b) Commitment by Bidder/ Supplier/ Contractor:

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

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

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

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage 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.

- 26.0 It may please be noted that Guidelines/Rules in respect of Suspension of business dealings (Hold- 12 to 24 Months/ Banning – 3 years etc), Vendor Evaluation formats, quality, safety and HSE guidelines , standard T&P hire charges of BHEL etc may undergo change from time to time and the latest one shall be followed. Latest "Guidelines for Vendor Evaluation" is web based quality, safety & HSE"; standard T&P hire charges shall be available at site and shall be given to the successful vendors/subcontractors during execution.
- 27.0 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 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 – C 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.

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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
Micro			
Small			
Medium			

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

- 28.0 The bidder along with its associates/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website [www.bhel.com](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.
- 29.0 Annexure-A -Amendment to GCC shall be read in conjunction with GCC-Volume-I. This Annexure-A (Amendment to GCC) of NIT shall not be considered as part of the NIT but addendum/corrigendum to the GCC only.
- 30.0 Annexure-B - Terms & conditions of Reverse Auction is enclosed herewith.
- 31.0 Annexure-D – Specific Clause w.r.t. BOCW Act & Cess Act is enclosed herewith.
- 32.0 Annexure-E- Statewise GST Registration nos. is enclosed herewith.
- 33.0 Duly filled & signed Annexure- CPP-GST/I to be submitted by bidders along with their techno-commercial offer.
- 34.0 Integrity Pact (IP) –
- (a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

SI No.	IEM	Address	Phone & Email
1.	Shri Arun Chandra Verma, IPS (Retd.)	Flat No. C -1204, C Tower, Amrapali, Platinum Complex, Sector 119, Noida (U.P.)	<a href="mailto:acverma1@gmail.com">acverma1@gmail.com</a>
2.	Shri Virendra Bahadur Singh, IPS (Retd.)	H. No. B-5/64, Vineet Khand, Gomti Nagar, Lucknow - 226010	<a href="mailto:ybsinghips@gmail.com">ybsinghips@gmail.com</a>

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

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

Note:

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

Details of contact person(s):

Name	Aditya Kumar	Subrata Sen
Dept	SCT Dept, BHEL PSER, Kolkata	SCT Dept, BHEL PSER, Kolkata
Address	DJ-9/1, Sector – II, Salt Lake, Kolkata – 700091	DJ-9/1, Sector – II, Salt Lake, Kolkata – 700091
Phone	033-2339 8237	033-2339 8226
Email	<a href="mailto:aditya.kr@bhel.in">aditya.kr@bhel.in</a>	<a href="mailto:subrata.sen@bhel.in">subrata.sen@bhel.in</a>
FAX	033-2339 8237/35	033-2339 8226

35.0 For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/ PO/ WO against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable.

36.0 Bidders are requested to submit their best price as per latest price schedule of the tender.

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

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

38.0 Order of precedence

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

- Amendments/Clarifications/Corrigenda/Errata etc issued in respect of the tender documents by BHEL
- Notice Inviting Tender (NIT)
- Price Bid-(VOL-III)
- Technical conditions & Special conditions of contract (TS & SCC)-VOL-II.
- General conditions of contract (GCC)-VOL-I.

for BHARAT HEAVY ELECTRICALS LTD

Sr. Engg (SCT)

Agency	Contact details
BHEL, PSER, Kolkata	Address
	DJ-9/1, Sector – II, Salt Lake City, Kolkata – 700 091
	Phone no
	033-2339 8237(D)/ 8000/ 8226.
	FAX no
	033-2321 1960
	e-mail
	<a href="mailto:aditya.kr@bhel.in">aditya.kr@bhel.in</a> / <a href="mailto:gargi.ray@bhel.in">gargi.ray@bhel.in</a> / <a href="mailto:subrata.sen@bhel.in">subrata.sen@bhel.in</a>

Enclosure

01. Annexure-1: Pre-Qualifying criteria.

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02. Annexure-2: Format for No-deviation certificate.
03. Annexure-3: Format for seeking query.
04. Annexure-4: Check-list.
05. Annexure-A - Amendment to GCC.
06. Annexure-B - Terms & conditions of Reverse Auction
07. Annexure -C-CA certificate Format.
08. Annexure -D- Specific Clause w.r.t. BOCW Act & Cess Act
09. Annexure-E- Statewise GST Registration nos.
10. Annexure- CPP-GST/I.
11. Tender document as per above details (Separate).

**ANNEXURE-1****PRE-QUALIFYING CRITERIA**

<b>JOB</b>	PROVIDING ONE (1) NUMBER TOWER CRANE AS PER TECHNICAL SPECIFICATION , FOR 3x660 MW BHEL NORTH KARANPURA SITE ON MONTHLY RENTAL BASIS
<b>TENDER NO.</b>	PSER:SCT:NKP-F2002:19

<b>SL NO</b>	<b>CRITERIA</b>
1.0 (a)	BIDDER SHOULD HAVE AVERAGE MINIMUM ANNUAL FINANCIAL TURNOVER Rs. 201.94 LAKH DURING LAST 3 (THREE) YEARS, ENDING ON 31.03.2019 AND HAVING POSITIVE NET WORTH AS ON LATEST AUDITED ACCOUNTS AS SUBMITTED FOR PARA 1(C).
(b)	BIDDER MUST HAVE EARNED PROFIT IN ANY ONE OF THE LAST THREE FINANCIAL YEARS ENDING ON 31.03.2019. AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT OF THE COMPANY FOR LAST 3 (THREE) FINANCIAL YEARS, ENDING ON 31.03.2019 NEED TO BE SUBMITTED IN SUPPORT OF ABOVE.
(c)	IN CASE AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT HAS NOT BEEN SUBMITTED FOR ALL THREE YEARS INDICATED ABOVE THEN THE APPLICABLE FINANCIAL AUDITED STATEMENTS SUBMITTED BY THE BIDDERS AGAINST THE REQUISITE THREE YEARS WILL BE AVERAGED FOR THREE YEARS.
(d)	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	BIDDER SHOULD BE INVOLVED IN THE BUSINESS OF PROVIDING OF CRANE ON RENTAL BASIS OR HANDLING ERECTION WITH CRANE OR SUPPLY / MANUFACTURING OF CRANE DURING LAST SEVEN (7) YEARS AS ON LATEST DATE OF SUBMISSION OF TENDER.  BIDDER TO SUBMIT RELEVANT SUPPORTING DOCUMENT.
3.0	BIDDER TO FURNISH DETAILS OF THE CRANE(S) I.E. CORRECT SPECIFICATION, MAKE OF CRANE ALONG WITH THE LOAD CHART AND RANGE DIAGRAM FOR THE OFFERED CRANE.
4.0	BIDDER SHOULD HAVE VALID PAN. RELEVANT DOCUMENT IN SUPPORT OF ABOVE SHALL BE SUBMITTED

NOTE:

A	BIDDER SHALL BE THE DIRECT OWNER OF THE CRANE OFFERED BY HIM AND FURNISH DOCUMENTS AS EVIDENCE OF OWNERSHIP OF THE CRANE. THIRD PARTY OWNERSHIP IS NOT ACCEPTABLE.
B	IN CASE, BIDDER WANTS TO PROCURE AND DEPLOY NEW CRANE, THEN THE BIDDER HAS TO SUBMIT DULY NOTARIZED UNDERTAKING (TOWARDS DEPLOYMENT OF NEWLY PURCHASED CRANE) ON NON JUDICIAL STAMP PAPER ALONG WITH THE OFFER.
C	BIDDER MUST NOT BE UNDER BANKRUPTCY CODE PROCEEDINGS (IBC) BY NCLT OR UNDER LIQUIDATION / BIFR, WHICH WILL RENDER HIM INELIGIBLE FOR PARTICIPATION IN THIS TENDER, AND SHALL SUBMIT UNDERTAKING TO THIS EFFECT.
D	BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.
E	AFTER SATISFACTORY FULFILLMENT OF ALL THE ABOVE CRITERIA, OFFER SHALL BE CONSIDERED FOR FURTHER EVALUATION AS PER NIT AND ALL OTHER TERMS OF THE TENDER.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 23211691/ 23398236

**ANNEXURE - 2****FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

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	PROVIDING ONE (1) NUMBER TOWER CRANE AS PER TECHNICAL SPECIFICATION , FOR 3x660 MW BHEL NORTH KARANPURA SITE ON MONTHLY RENTAL BASIS.	
Ref	1.0	Tender no PSER:SCT:NKP-F2002:19
	2.0	BHEL's NIT, vide reference no PSER:SCT:NKP-F2002:7738 Date: 02-01-2020.
	3.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is 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/ issued by you and in case of such 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. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

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

**ANNEXURE - 3****FORMAT FOR SEEKING CLARIFICATION**

<b>JOB</b>	PROVIDING ONE (1) NUMBER TOWER CRANE AS PER TECHNICAL SPECIFICATION , FOR 3x660 MW BHEL NORTH KARANPURA SITE ON MONTHLY RENTAL BASIS.
<b>TENDER NO</b>	PSER:SCT:NKP-F2002:19

<b>SI no</b>	<b>Reference clause of tender document</b>	<b>Existing provision</b>	<b>Bidder's query</b>	<b>BHEL's clarification</b>

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पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 232111691/ 23398236

**ANNEXURE - 4****CHECK LIST**

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

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No:                      Date : Bank :                      Amount: Please tick ( ✓ ) whichever applicable:- ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY(BY BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/Not Applicable	YES/NO
8	Copy of PAN Card	Applicable/Not Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable/Not Applicable	YES/NO
10	Integrity Pact	Applicable/Not Applicable	YES/NO
11	Declaration by Authorised Signatory	Applicable/Not Applicable	YES/NO
12	No Deviation Certificate	Applicable/Not Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable/Not Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable/Not Applicable	YES/NO
15	Non Disclosure Certificate	Applicable/Not Applicable	YES/NO
16	Bank Account Details for E-Payment	Applicable/Not Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	Applicable/Not Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	YES/NO
19	Power of Attorney for Submission of Tender/Signing Contract Agreement	Applicable/Not Applicable	YES/NO
20	Analysis of Unit rates	Applicable/Not Applicable	YES/NO
21	Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR (Undertaking to be enclosed if not applicable)	Applicable/Not Applicable	YES/NO

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

DATE:

AUTHORISED SIGNATORY  
(With Name, Designation and Company seal)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय) POWER SECTOR - EASTERN REGION, DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091 फैक्स/Fax : (033) 23211960      फ़ोन/Phone : बोर्ड/EPABX : 23211691/ 23398236
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## Annexure –A

Amendment to GCC

1. Introduction of Clause No 1.7.2.4 in GCC as below:

**Clause No 1.7.2.4** : Additional security deposit (SD) has to be submitted by the successful bidder with value as follows :

“If the final price of successful bidder is lesser by ‘more than 20%’ of BHEL’s estimates then only, ‘Additional Security Deposit’ will be required to be submitted by the successful bidder with value as follows:

Additional Security Deposit = 30 % of (A-B) will be calculated as below:

A = 80% of BHEL estimate

B = The final offered price of successful bidder through RA (In case of RA)

OR

Sealed paper price bid of successful bidder (in case of paper bid)

This ‘Additional Security Deposit’ shall have the same validity as that of the ‘Security Deposit’ and shall be revalidated/released in the manner as spelt out for the ‘Security Deposit’ as per relevant clause of GCC.

The BHEL’s estimated value shall be disclosed to the successful bidder (on their request) at appropriate juncture in case ‘Additional Security Deposit’ is applicable.”

- 2.

(I)	New clauses have been introduced under Volume-I-GCC superseding all pertinent clauses of risk and cost
1.1	<p>Risk and cost may be invoked in any of the following cases:</p> <ul style="list-style-type: none"> <li>i). Contractor’s poor progress of the work vis-à-vis execution timeline as stipulated in the Contract, backlog attributable to contractor including unexecuted portion of supply does not appear to be executable within balance available period considering its performance of execution.</li> <li>ii). Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.</li> <li>iii). Non completion of work/ Non-supply by the Contractor within scheduled completion/ delivery period as per Contract or as extended from time to time, for the reasons attributable to the contractor.</li> <li>iv). Termination of Contract on account of any other reason (s) attributable to Contractor.</li> <li>v). Assignment, transfer, subletting of Contract without BHEL’s written permission resulting in termination of Contract or part thereof by BHEL.</li> <li>vi). Non-compliance to any contractual condition or any other default attributable to Contractor.</li> </ul> <p><u>Risk &amp; Cost Amount against Balance Work:</u>  Risk &amp; Cost amount against balance work shall be calculated as follows:  Risk &amp; Cost Amount= [(A-B) + (A x H/100)]  Where,  A= Value of Balance scope of Work/ Supply (*) as per rates of new contract  B= Value of Balance scope of Work/ Supply (*) as per rates of old contract being paid to the contractor at the time of termination of contract i.e. inclusive of PVC &amp; ORC, if any.</p>

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	<p>H = Overhead Factor to be taken as 5</p> <p>In case (A-B) is less than 0 (zero), value of (A-B) shall be taken as 0 (zero).</p> <p>* Balance scope of work/ supply (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/ Supply for calculating risk &amp; 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. 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.</p> <p>NOTE: Incase portion of work is being withdrawn at risk &amp; cost of contractor instead of termination of contract, contract quantities pertaining to portion of work withdrawn shall be considered as 'Balance scope of work/ supply' for calculating Risk &amp; Cost amount.</p> <p><u>LD against delay in executed work/ supply in case of Termination of Contract:</u></p> <p>LD against delay in executed work/ supply shall be calculated in line with the relevant LD clause(s) 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/ supply till termination of contract.</p> <p>Method for calculation of "LD against delay in executed supply in case of termination of contract" is given below.</p> <ol style="list-style-type: none"> <li>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</li> <li>Let the value of executed work/supply till the time of termination of contract= X</li> <li>Let the Total Executable Value of work/supply for which inputs/fronTS were made available to contractor and were planned for execution till termination of contract = Y</li> <li>Delay in executed work/supply attributable to contractor i.e. <math>T2 = [1 - (X/Y)] \times T1</math></li> <li>LD shall be calculated in line with LD clause of GCC for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.</li> </ol>
1.2	<p><u>Recoveries arising out of Risk &amp; Cost and LD or any other recoveries due from Contractor</u></p> <p>Following sequence shall be applicable for recoveries from contractor:</p> <ol style="list-style-type: none"> <li>Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.</li> <li>Demand notice for deposit of balance recovery amount shall be sent to contractor, if funds are insufficient to effect complete recovery against dues indicated in (a) above.</li> <li>If contractor fails to deposit the balance amount to be recovered within the period as prescribed in demand notice, following action shall be taken for balance recovery: Dues payable to contractor against other contracts in the same Region shall be considered for recovery.</li> </ol> <p>If recovery cannot be made out of dues payable to the contractor as above, balance amount to be recovered, shall be informed to other Regions/Units for making recovery from the Unpaid Bills/Running Bills/SD/BGs/Final Bills of contractor.</p>

	In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.
(II)	Additional clauses have been introduced under Volume-I-GCC under security deposit (SD) & performance bond (PB)
2.0	<p><u>Clause No 1.7.5:</u> Security deposit (SD)</p> <p>SDBG to be furnished by the vendor before start of work. No payment will be released till SDBG is submitted by the vendor.</p> <p>If requested by the vendor, cash recovery equivalent to SDBG value to be made from bills submitted by the vendor.</p> <p>Also recovery of interest calculated @SBI PLR +2% on amount equivalent to SDBG / PBG value to be made for the gap period (difference between date of start of work and date of submission of BG / cash recovery).</p> <p>In case of delay in extension of SDBG, in case of validity expiry, SDBG shall be invoked. However if the vendor submits a new BG after invocation of the previous BG then, it shall be refunded and recovery for the gap period, i.e. the duration for which BG is not available shall be made as stated above.</p>

Annexure -B**Terms & Conditions of Reverse Auction**

Against this enquiry for the subject item/ system with detailed scope of supply/service as per tender specifications, BHEL may resort 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. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder for any of the eligible items for which techno- commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
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 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 IV) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. 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.
13. 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*, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) will not be allowed to participate in further RA process provided minimum three bidders are left after removal of H1 bidder. In case of tie for H1 bid (identical online sealed bids), 15 minutes' additional time shall be provided and all the participating bidders shall be informed by mail/message on bidding screen to enable bidders submit revised online sealed bids so as to break the tie.

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फ़ोन/Phone : बोर्ड/EPABX : 23211691/ 23398236

**Annexure -C****Certificate by Chartered Accountant on letter head**

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

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

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.0.1722(E) dated October 5, 2006 :  
 Rs.....Lacs
2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:  
 Rs.....Lacs

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

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

Or

The company has been graduated from its original category {Micro/ Small} (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is ..... (dd/mm/yyyy) which is within the period of 5 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

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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**Annexure –D****Specific Clause w.r.t. BOCW Act & Cess Act**

1. It shall be the sole responsibility of the contractor as employer to ensure compliance of all the statutory obligations under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
2. It shall be sole responsibility of the contractor engaging Building Workers in connection with the building or other construction works in the capacity of employer to apply and obtain registration certificate specifying the scope of work under the relevant provisions of the Building and Other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 from the appropriate Authorities.
3. It shall be responsibility of the contractor to furnish a copy of such Registration Certificate within a period of one month from the date of commencement of Work.
4. It is responsibility of the contractor to register under the Building and other Construction Workers' Welfare Cess Act, 1996 and deposit the required Cess for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 at such rate as the Central Government may, by notification in the Official Gazette, from time to time specify. However, before registering and deposit of Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, the contractor will seek written prior approval from the Construction Manager.
5. In case where the contractor has been accorded written approval by the Construction Manager and the contractor is required to furnish information in Form I and deposit the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996, fails to do so, BHEL reserves right to impose penalty at the rate of 30% of Cess Amount.
6. It shall be sole responsibility of the contractor as employer to get registered every Building Worker, who is between the age of 18 to 60 years of age and who has been engaged in any building or other construction work for not less than ninety days during the preceding twelve months as Beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996.
7. It shall be sole responsibility of the contractor as employer to maintain all the registers, records, notices and submit returns under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.
8. It shall be sole responsibility of the contractor as employer to provide notice of poisoning or occupation notifiable diseases, to report of accident and dangerous occurrences to the concerned authorities under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the rules made thereunder and to make payment of all statutory payments & compensation under the Employees' Compensation Act, 1923.
9. It shall be responsibility of the Contractor to furnish BHEL on monthly basis, Receipts/ Challans towards Deposit of the Cess under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder along with following statistics :
  - (i) Number of Building Workers employed during preceding one month.
  - (ii) Number of Building workers registered as Beneficiary during preceding one month.
  - (iii) Disbursement of Wages made to the Building Workers for preceding wage month.
  - (iv) Remittance of Contribution of Beneficiaries made during the preceding month
10. BHEL shall reimburse the contractor the Cess amount deposited for the purposes of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 under the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fees paid towards registration of Beneficiaries and Contribution of Beneficiaries remitted.
11. It shall be responsibility of the Building Worker engaged by the Contractor and registered as a beneficiary under the Building and other Construction Workers' (Regulation of Employment and Conditions of Service)

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Act, 1996 to contribute to the Fund at such rate per mensem as may be specified by the State government by notification in the Official Gazette. Where such beneficiary authorizes the contractor being his employer to deduct his contribution from his monthly wages and to remit the same, the contractor shall remit such contribution to the Building and other construction Workers' Welfare Board in such manner as may be directed by the Board, within the fifteen days from such deduction.

12. If any point of time during the contract period, non-compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder is observed, BHEL reserves the right to withhold a reasonable amount from the payables to discharge any obligations on behalf of Contractors. The reasonable amount shall be decided by the Construction Manager in consultation with Resident Accounts Officer & Head HR and shall be final.
13. The contractor shall declare to undertake any liability or claim arising out of employment of building workers and shall indemnify BHEL from all consequences / liabilities / penalties in case of non compliance of the provisions of the Building and other Construction Workers' (Regulation of Employment and Conditions of Service) Act, 1996 and the Building and other Construction Workers' Welfare Cess Act, 1996 and the rules made thereunder.



**ANNEXURE-E****Statewise GST Registration nos.**

<b>Sl. No.</b>	<b>State / UT</b>	<b>GST Reg. No.</b>
1	Andhra Pradesh	37AAACB4146P7Z8
2	Assam	18AAACB4146P1ZE
3	Bihar	10AAACB4146P1ZU
4	Chandigarh	04AAACB4146P1ZN
5	Chattishgarh	22AAACB4146P1ZP
6	Daman & Diu	25AAACB4146P1ZJ
7	Delhi	07AAACB4146P1ZH
8	Gujarat	24AAACB4146P1ZL
9	Haryana	06AAACB4146P1ZJ
10	HP	02AAACB4146P1ZR
11	Jharkhand	20AAACB4146P5ZP
12	Karnataka	29AAACB4146P1ZB
13	Kerala	32AAACB4146P1ZO
14	Maharashtra	27AAACB4146P1ZF
15	MP	23AAACB4146P1ZN
16	Punjab	03AAACB4146P2ZO
17	Rajasthan	08AAACB4146P1ZF
18	Tamil Nadu	33AAACB4146P2ZL
19	Telangana	36AAACB4146P1ZG
20	Tripura	16AAACB4146P1ZI
21	UP	09AAACB4146P2ZC
22	Uttarakhand	05AAACB4146P1ZL
23	West Bangal	19AAACB4146P1ZC
24	Mizoram	15AAACB4146P1ZK
25	Orissa	21AAACB4146P1ZR
26	Arunachal Pradesh	12AAACB4146P1ZQ

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

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**Annexure- CPP-GST/I****Please arrange to submit this filled-up format along with Tender**

Name of the Company	
Address of Company*	
Company Registration Number*	
Name of Partners / Directors	
ALL THE STATES WHERE BIDDER HAS A PLACE OF BUSINESS*	
ALL ADDRESS OF VENDOR MENTIONING THEIR PIN AS PER THE LATEST GST REGISTRATION*	
GSTN OF ALL THE ABOVE NOTED PLACES OF VENDOR*	
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 /undertaking/joint venture/partnership/other}	
Company Category* {micro unit as per MSME/small unit as per MSME/medium unit as per MSME/ UAN as per Udyog Aadhaar Memorandum/ Ancillary unit/project affected person of this company/ssi/ other}	
Relevant documents to be submitted as applicable.	
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*	
Fax*	
Mobile*	

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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

फैक्स/Fax : (033) 23211960

फोन/Phone : बोर्ड/EPABX : 232111691/ 23398236

BHEL-IP

AA:SSP:IP:R02 dtd 10.07.2018

**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:



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## **Section 2 - Commitments of the Bidder(s)/ Contractor(s)**

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

## **Section 3 - Disqualification from tender process and exclusion from future contracts**

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process 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



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demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

#### **Section 5 - Previous Transgression**

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

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

- 6.1 The 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 /Subcontractors**

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

#### **Section 8 - Independent External Monitor(s)**

- 8.1 The Principal appoints competent and credible 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.



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- 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 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 organisation.
- 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 currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

#### Section 10 - Other Provisions

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



- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 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)

Place-----

Date-----

Witness:\_\_\_\_\_

(Name & Address) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

For & On behalf of the Bidder/  
Contractor

(Office Seal)

Witness:\_\_\_\_\_

(Name & Address) \_\_\_\_\_

\_\_\_\_\_

<b>Bharat Heavy Electricals Limited</b>		
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**SECTION – I**  
**GENERAL INSTRUCTION TO TENDERER**

CLAUSE NO	DESCRIPTION
1.1	NOTICE
1.1.1	Sealed tenders complete in all respects shall be submitted, duly superscribing the tender document No. and name of work, to the OFFICER INVITING TENDER within specified date and time.
1.1.2	Bharat Heavy Electricals Ltd., take no responsibility for any delay, loss or non receipt of tender document sent by post and also reserve the right to reject any or all the tenders without assigning any reason thereof. Tenders not accompanied by prescribed earnest money are liable to be summarily rejected.
1.2	PROCEDURE FOR SUBMISSION OF SEALED TENDERS
1.2.1	The tenderer must submit their tenders as required in three parts in separates sealed covers prominently superscribed as Part – I “TECHNO – COMMERCIAL BID”, Part – II “PRICE BID” and Part – III “EMD” and also indicating on each of the covers the tender specification number and due date and time. All the three sealed envelopes shall be enclosed in a third envelop superscribing tender specification No. and due date and time on the top.
1.2.2	No deviation from the tender specifications shall be acceptable to BHEL. For this purpose the tenderers shall confirm their unqualified acceptance of the terms and conditions in the technical bid, and that the rate quoted are in accordance with the tender specification by giving a written undertaking to that effect as per the enclosed format. This certificate shall be kept outside the techno-commercial bid during submission. TENDERS NOT COMPLYING WITH THE ABOVE MAY BE REJECTED.
1.2.2.1	PART – I (TECHNO – COMMERCIAL BID) – Cover I. All schedules, data sheets & details, reference of EMD ( without disclosing amount) and Volume-I & Volume-II (signing on all the pages) shall be enclosed in Part-I, TECHNO–COMMERCIAL BID.
1.2.2.2	PART-II (PRICE BID) – Cover II All indications of price as per rate schedule (Volume III) alongwith Volume III (signing on all the pages) shall be submitted in this Part II, PRICE BID.
1.2.2.3	PART-III (EMD) – Cover III This cover should contain only Earnest Money deposit (EMD) for the specification.
1.2.3	Tenders submitted by post shall be sent ‘REGISTERED POST AC-KNOWLEDGEMENT DUE’ and shall be posted with the due allowance for any postal delay. Tenders received after the due date and time of opening is liable to be rejected. Telegraphic offers and offers received by telex may not be considered unless confirmed in writing by a detailed offer.
1.2.4	Tenders shall be opened by the authorized officers of BHEL at his office at the specified time and date in the presence of such of those, tenderers or their authorized representatives who may be present. Such representatives shall have to bring with them an authorization letter during the opening of price bids.
1.2.5	The tenderers shall closely peruse all the clauses, specification and drawings indicated in the tender documents before quoting. Should the tenderer have any doubt about the meaning of any portion of the tender specifications or find discrepancies or omission in the drawing or the tender documents issued are incomplete or shall require clarification on any of the technical aspect, scope of work etc, shall at once contact the authority inviting the tender for clarification before submission of offer.
1.2.6	Before tendering, the tenderers are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on the ground of lack of knowledge.
1.2.7	Tenderer must fill up all the schedules and annexure and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the tender specification, comprising of Volume I, Volume II and Volume III must be SIGNED, STAMPED AND SUBMITTED ALONGWITH THE OFFER by the tenderer in token acceptance thereof. The information furnished shall be complete by itself.
1.2.8	The tenderer shall quote the rates in English language and international numerals. The rate shall be in whole rupees. These rates shall be entered in figurers as well as in words. In case of difference in rates between words and figurers THE LESSER OF THE TWO will be treated as valid rate. For the purpose of the tender, the metric system of units shall be used.

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1.2.9	All entries in the tender shall either be typed or be in ink. Erasing and over writing are not permitted and may render such tender liable to summary rejection. All cancellations and insertions shall be duly attested by the tenderer.
1.3	<b>QUALIFICATION OF TENDERERS</b>
	Only tenderers who have been previously qualified in the work of this nature and description detailed in this tender specification and have other resources and expected to quote for this work.
1.3	<b>DATA AND DOCUMENTS TO BE ENCLOSED</b>
1.3.1	Full information shall be given by the tenderer in respect of following. Non-submission of these information may lead to rejection of the offer.
1.3.2	Attested copies of partnership deed, power of attorney and tender specifications duly signed as mentioned in the tender documents.
1.3.3	In case of an proprietorship firm, full name of proprietor, address, place and nature of business shall be furnished. In case of partnership firm, names of all the partners and their address, copy of partnership deed, instrument of partnership duly certified by the Notary Public shall be enclosed. In case of company, date and place of registration including date of commencement certificate, in case of public companies (certified copies of Memorandum and Articles of Association are also to be furnished), nature of business carried on by the company and submissions of the memorandum relating thereof, names and particulars including addresses of all the directors and their previous experiences etc shall be furnished.
1.3.4	Prescribed Earnest Money Deposit.
1.3.5	Previous experience
	A statement giving particulars duly supported by documentary evidence of the various services rendered for each similar work by the tenderer indicating the particulars and value of each work, the site location and the duration and date of completion and also list of site location and particulars and values of various works that are under progress.
1.3.6	Organization chart
1.3.6.1	The organization that is totally available and that will be employed by the tenderer for this work duly indicating the number of supervisors the number of skilled and unskilled persons etc.
1.3.6.2	A list of tools and tackles that the tenderer is having and those will be used on this job including deployment plan.
1.3.6.3	Audited Balance Sheet and Profit & Loss A/c of last three years.
1.3.7	Banker's Certificate
	A latest certificate from Scheduled Bank to prove his financial capacity to undertake the work or solvency certificate from the concerned government authority.
1.3.8	Income Tax / Sales Tax Certificate
1.3.8.1	A valid certificate of Income Tax / Sales Tax verification from the appropriate authority in the forms prescribed duly indicating annual turnover. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during the period.
1.3.8.2	A written declaration indicating that no deviation from the tender specification has been taken.
1.3.8.3	In addition to above, other particulars, required in various annexure shall be furnished.
1.3.9	<b>EARNEST MONEY DEPOSIT (EMD)</b>
1.3.9.1	Every tender must be accompanied by the prescribed amount of Earnest Money Deposit as indicated in the tender enquiry letter, in any of the following forms. (All securities are to be discharged and pledged in favour of BHEL).
1.3.9.2	<p>The EMD may be accepted only in the following forms:</p> <ul style="list-style-type: none"> <li>(a) Cash deposit as permissible under the extant Income Tax Act (before tender opening)</li> <li>(b) Electronic Fund Transfer credited in BHEL account (before tender opening)</li> <li>(c) Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer)</li> <li>(d) Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)</li> </ul> <p>In addition to above, the EMD amount in excess of Rs. 2 Lakh may also be accepted in the form of Bank Guarantee from scheduled bank. The Bank Guarantee in such cases shall be valid for atleast six months. EMD of successful tenderer will be retained as part of Security Deposit.</p>

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1.3.9.3	Deleted
1.3.9.4	Deleted
1.3.9.5	Tenders received without earnest money in full in the manner prescribed above are liable to be rejected.
1.3.9.6	The Earnest money deposit of the successful tenderer paid in cash /DD/pay order shall be retained towards part of Security Deposit.
1.3.9.7	In the case of unsuccessful tenderers, the Earnest Money shall be refunded within a reasonable time after acceptance of award of work by the successful tenderer.
1.3.9.8	BHEL reserves the right of forfeiture of earnest money deposit in case the tenderer:
1.3.9.9	After opening of the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates.
1.3.9.10	Fails to commence the work within the period as specified in the Letter of Intent or communicate the unqualified acceptance of the Letter of Intent within 15 days of date of the Letter of Intent.
1.4	<b>AUTHORISATION AND ATTESTATION</b>
	Tenders shall be signed by persons duly authorized / empowered to do so. Certificated copies of such authority and relevant documents shall be submitted alongwith the tenders.
1.5	<b>VALIDITY OF OFFER</b>
	The rates in the tender shall be kept valid for acceptance / for minimum period of six months from the date of submission of latest offer. If a tenderer withdraws or revokes his tender or revises the tendered rates and conditions for any items within the aforesaid period, his earnest money is liable to be forfeited. In case Bharat Heavy Electricals Limited calls for negotiations, such negotiations shall not amount to cancellation or withdrawal, of the original offer which shall be binding on the tenderers.
1.6	<b>EXECUTION OF CONTRACT</b>
	The successful tenderer's responsibility under this contract commences from the date of issue of letter of intent by Bharat Heavy Electricals Limited. The successful tenderer shall be required to execute agreement in the prescribed form with BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment. The total expenses towards preparing agreement (no of copies to be specified by BHEL at the time of execution of agreement) shall be borne by the contractor.
1.7	<b>SECURITY DEPOSIT (SD)</b>
1.7.1	Upon acceptance of tender, the successful tenderer within the time specified in the letter of intent must deposit required amount as security deposit for satisfactory completion of work and shall not commence work under the contract before remitting security deposit except as directed by BHEL.
1.7.2	The total amount of Security Deposit will be 5% of the contract value. EMD of the successful tenderer shall be converted and adjusted towards the required amount of Security Deposit.
1.7.3	The Security deposit may be deposited in any of the following form:
1.7.3.1	<p>The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:</p> <ul style="list-style-type: none"> <li>a) Cash (as permissible under the extant Income Tax Act)</li> <li>b) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL</li> <li>c) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL</li> <li>d) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL)</li> <li>e) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL)</li> </ul> <p>(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)</p>
1.7.3.2	Deleted
1.7.3.3	Deleted
1.7.3.4	Deleted

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1.7.3.5	At least 50% of the required Security Deposit, including the EMD, should be furnished before start of the work. Balance of the Security Deposit can be deposited by deducting 10% of the gross amount progressively from each of the running bills of the Contractor till the total amount of the required Security Deposit is collected.  The recoveries made from running bills (cash deduction towards balance SD amount) can be released against submission of equivalent Bank Guarantee in acceptable form, but only once, before completion of work, with the approval of competent authorities.
1.7.3.6	Deleted
1.7.3.7	If the value of the work done at any time exceeds accepted agreement value, the security deposit shall be correspondingly enhanced and the extra security deposit shall be immediately deposited by the contractor or recovered from payments due to him.
1.7.3.8	Regarding adjustment of Earnest Money deposit towards part of Security Deposit, refer clause under EMD above.
1.7.3.9	Failure to deposit security money within stipulated time may lead to forfeiture of Earnest Money and cancellation of award of work.
1.7.3.10	If any parts of security deposit of the contractor is held in the form of approved securities, it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Kolkata in such a manner the BHEL can realize it fully without reference to the contractor. BHEL shall not be responsible for any depreciation in the value of the security while in BHEL's custody or for any loss of interest thereon.
1.7.3.11	BHEL reserve the right of forfeiture of security deposit in addition to other claims and penalties in the event of the contractor's failure to fulfil any of the contractual obligations (including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL) or in the event of termination of contract as per terms and conditions of contract. BHEL reserve the right to set off these security deposit, against any claims of any other contract with BHEL.
1.7.3.12	In case of small value contracts not exceeding Rs.10 lakhs and all SAS jobs, work can be started before Security Deposit is collected. However, payment can be released only after collection / recovery of initial 50% Security Deposit.
1.7.4	Return of Security Deposit
1.7.4.1	Security Deposit shall be refunded/Bank Guarantee(s) released to the Contractor along with the 'Final Bill' after deducting all expenses / other amounts due to BHEL under the contract / other contracts entered into with them by BHEL upon fulfilment of contractual obligations as per terms of the contract.
1.7.4.2	No interest shall be payable by BHEL on earnest money / security deposit or any money due to the contractor by BHEL.
1.8	REJECTION OF TENDER AND OTHER CONDITIONS
1.8.1	The acceptance of tender will rest with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.
1.8.1.1	To reject any or all of the tender.
1.8.1.2	To split up the work amongst two or more tenderers.
1.8.1.3	To award the work in part.
1.8.1.4	Either of the contingencies stated in 1.8.1.2 and 1.8.1.3 to modify the time for completion suitably.
1.8.2	Conditions and unwitnesses tenderers, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and not in accordance with the tender conditions, specification etc., are liable to be rejected.
1.8.3	If a tenderer expires after his submission of the tenders or after the acceptance of his tender BHEL may at their discretion cancel such tender. If a partner of a firm expires after the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.
1.8.4	BHEL will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
1.8.5	If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or to cancel the contract, if awarded, and forfeit Earnest Money / Security Deposit.
1.8.6	Canvassing in any form in connection with the tenders is strictly prohibited and the tenders



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	submitted by the contractor who resort to canvassing are liable to rejection.
1.8.7	Should a tenderer of contractor or in the case of a firm or Company one or more its partners / shareholders / directors have a relation or relations employed in the capacity of an officer of BHEL, the authority inviting tender shall be informed of the fact alongwith the Officer, failing this, BHEL may, at it sole discretion, reject the tender or cancel the contract and forfeit the Earnest Money / Security Deposit.
1.8.8	The successful tenderer should not subcontract the part or complete work detailed in this tender specification / undertaken by him without written permission of BHEL. The tenderer is solely responsible to BHEL for the work awarded to him.
1.8.9	No deviation from the tender specifications shall be acceptable to BHEL. Tenderers shall confirm their unqualified acceptance of the terms and conditions by giving an undertaking to this effect in a separate envelope alongwith the techno-commercial bid superscribed the word “undertaking for NO DEVIATION”.

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**SECTION – II**  
**GENERAL TERMS AND CONDITIONS OF CONTRACT**

CLAUSE NO	DESCRIPTION
2.1	DEFINITION The following terms and expression shall have the meaning hereby assigned to them excepting where the context otherwise requires :-
2.1.1	‘BHEL’ shall mean Bharat Heavy Electricals Limited, a company registered under Indian Companies Act 1956, with its Registered office at ‘BHEL HOUSE’, SIRI FORT, NEW DELHI – 110 049. Power Sector, Eastern Region, Kolkata – 700 001 or its administrative officers or its site engineer or other employees authorized to deal with any matters with which these persons are concerned on its behalf.
2.1.2	EXECUTIVE DIRECTOR / GENERAL MANAGER shall mean the officer in administrative charge of BHEL, Power Sector, Eastern Region or their other regional offices.
2.1.3	‘ENGINEER’ OR ‘ENGINEER IN CHARGE’ shall mean engineer deputed by BHEL. The term includes ‘SITE ENGINEER’ ‘RESIDENT ENGINEER’ and ‘ASSISTANT SITE ENGINEER’ of BHEL at the site as well as the officers in charge at Kolkata Office.
2.1.4	‘SITE’ shall mean the place or places at which the plants / equipment are to be erected and services are to be performed as per the specification of this contract.
2.1.5	‘CLIENTS OF BHEL’ or CUSTOMER’ shall mean the Project authorities to whom BHEL is supplying the equipment.
2.1.6	‘CONTRACTOR’ shall mean the individual firm or company who enters into this contract with BHEL and shall include their executors, administrators, successors and permitted assigns.
2.1.7	‘CONTRACTOR’ or ‘CONTRACT DOCUMENT’ shall mean and includes the agreement of work order, the accepted appendices or rates, schedule or quantities, if any and general conditions of contract, the special conditions of contract, instructions to the tenders, the drawing, the specification, the special specifications if any, the tender documents and the letter of intent / accepting letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender documents or supporting letters shall not form part of the contract unless specifically accepted in writing by BHEL and incorporated in this agreement.
2.1.8	‘GENERAL CONDITION OF CONTRACT’ shall mean the instruction to Tenderers and general conditions of contract pertaining to the work detailed.
2.1.9	‘TENDER SPECIFICATION’ shall mean the specific condition, technical specifications, appendices, site information and drawings pertaining to the work in which the tenderers are required to submit their offers. Also this will include the specifications covered under specifications detailed in NIT of client of BHEL for erection, testing and commissioning of plant. Individual specification No. will be assigned to each tender specification.
2.1.10	‘TENDER DOCUMENTS’ shall mean the general condition of contract and tender specification.
2.1.11	‘LETTER/TELEX OF INTENT (LOI/TOI)’ shall mean the intimation to the tenderer that the tender has been accepted in accordance with provision contained in it. The responsibility of the contractor commences from the date of issue of this letter and all the terms and condition of contract are applicable from this date.
2.1.12	‘COMPLETION TIME’ shall mean the period by date specified in the acceptance of the tender for handing over of the erected equipment/plant which are found acceptable by the Engineer being of required standard and conforming to the specifications of the contract.
2.1.13	‘PLANT’ shall mean the connote the entire assembly of the plant and equipment covered by the contract.
2.1.14	‘EQUIPMENT’ shall mean all equipment, machinery, materials, structurals, electricals and other components of the plant covered by the contract.
2.1.15	‘TESTS’ shall mean and includes such test to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL, in order to ascertain the quality, workmanship, performance and efficiency of the contractor’s work or part thereof.
2.1.16	‘APPROVED’, ‘DIRECTED’ or ‘INSTRUCTED’ shall mean approved, directed or instructed by BHEL.
2.1.17	‘WORK or CONTRACT WORK’ shall mean and include supply of all categories of labour, specified consumable, tools and tackles required for complete and satisfactory site transportation, handling, stacking, storing erecting, testing and commissioning of the equipment to the entire satisfaction of BHEL.
2.1.18	‘SINGULAR AND PLURAL ETC’ works carrying singular number shall also include plural and

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	vise-versa where the context so require. Words importing the masculine gender shall be taken to include any company or association or body of individuals whether incorporated or not.
2.1.19	'HEADINGS'. The headings in these general conditions are solely for the purposes of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
2.1.20	'MONTH' shall mean Calendar month.
2.1.21	'WRITTING' shall include any manuscript type written or printed statement under the signature or seal as the case may be.
2.2	LAW GOVERNING THE CONTRACT AND COURT JURISDICTION. The contract shall be governed by the law for the time being in force in the Republic of India. The Civil Court, having ordinary original civil jurisdiction, Kolkata shall alone have exclusive jurisdiction in regard to all claims in respect of this contract.
2.3	ISSUE OF NOTICE The contractor shall furnish to the BHEL Engineer name, designation and address of his authorized agent and all complaints, notices, communications and reference shall be deemed to have been duly given to the contractor if delivered to the contractor or his authorized agent or left at or posted to address either of the contractor or of his representative and shall be deemed to have been so given in case of posting on the day on which they would have reached such address in ordinary course of post or on which they were so delivered of /or left.
2.4	USE OF LAND No land belonging to BHEL or their customer under temporary possession of BHEL shall be occupied by the contractor without the written permission of BHEL.
2.5	COMMENCEMENT OF WORK
2.5.1	The contractor shall commence the works within the time indicated in the letter / telex of intent from BHEL and shall proceed with same with due expedition without delay.
2.5.2	If the successful tenderer fails to start the work within the stipulated time, BHEL at its sole discretion will have the right to cancel the contract. His earnest money and / or Security Deposit with BHEL will stand forfeited without any further reference to him, without prejudice to any and all of BHEL's rights and remedies in this regard.
2.5.3	All the works shall be carried out under the direction and satisfaction of BHEL.
2.5.4	The erected / constructed plant or work performed under the contract shall be taken over when it has been completed in all respects and / or satisfactorily put into operation at site.
2.6	MODE OF PAYMENT & MEASUREMENT OF THE WORK COMPLETE All payments due to the contractor shall be paid by ' Account Payee Cheques'.
2.6.1	For progress running bill payment: The contractor shall present detailed measurement sheets, in triplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per letter of intent. The basis of arriving at the quantities / weights shall be relevant documents and drawings released by BHEL. These measurement sheets shall be entered in measurement book and signed by both the parties.
2.6.2	These measurement sheets will be checked by BHEL engineers and quantities and percentage eligible for payment under various groups shall be decided by BHEL Engineer. The abstract of quantities and percentage so arrived at based on the terms of payment shall be entered in measurement book and signed by both in the parties.
2.6.3	Based on the above quantity, contractor shall prepare the bills in prescribed proforma and work out the financial value. These will be entered in M. Book and signed by both the parties and paid for duly effecting recoveries due.
2.6.4	All recoveries due from the contractor for the month/period shall be effected in full from this corresponding running bills unless specific approval from the competent authorities is obtained otherwise.
2.6.5	Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this contract.
2.6.6	The measurement shall be taken jointly by persons duly authorized on the part of BHEL and by the contractor.
2.6.8	If, at any time due to any reason whatsoever, it becomes necessary to measure the work done in full, or in part, the expenses towards such re-measurements shall be borne by the contractor.
2.6.9	Passing of measurement as per bills does not amount to acceptance of the completion of the work mentioned. Any left out work has to be completed if pointed out at a later date by BHEL.

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2.6.10	Final measure bill shall be prepared in the final bill proforma prescribed for the purpose based on the certificate issued by BHEL Engineer that entire work as stipulated in the tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractor shall give unqualified “NO DUE” and no demand certificate. All the tools and tackles loaned to him would be returned by the contractor in satisfactory condition to BHEL. Quantities / weights erected shall be prepared and paid, within a reasonable time after completion of work. After payment of final bill only guarantee obligation percentage shall remain unpaid which shall be released in accordance with terms of specification. The final bill quantities and financial value shall also be entered in measurement book and signed by both the parties to the contract.
2.7	RIGHTS OF BHEL
2.7.1	BHEL reserve the following rights in respect of this contract without entitling the subcontractor for any compensation.
2.7.2	To get the work done through other agency at the risk and cost of the contractor, in the event of Contractor's poor progress or inability to progress the work for completion as stipulated in the contract, poor quality of the work etc and to recover compensation for such losses from contractor including BHEL's supervision charges and overheads from security deposit/other dues.
2.7.3	To withdraw any portion of work and /or to restrict alter the quantum of works as indicated in the contractors during the progress of erection and get it done through other agency and/or by departmental labour to suit BHEL's commitment to its customer or in case BHEL decides to advance in date of completion due to other emergency reason/BHEL's obligation to its customer.
2.7.4	To terminate the contract after due notice and forfeit security deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages/penalty in the events of followings:
2.7.5	Contractor's continued poor progress brought to his notice from time to time.
2.7.6	Withdrawal form or abandonment of the work before completion of the work.
2.7.7	Corrupt act of contractor.
2.7.8	Insolvency of the contractor.
2.7.9	Persistent disregard to the instructions in writing of BHEL.
2.7.10	Assignment, transfer, sub-letting of the contract without BHEL's written permission.
2.7.11	Non-fulfillment of any contractual obligations.
2.7.11.1	Any delay in completion of works / or non – achievement of periodical targets due to reasons attributable to the contractor, the same will have to be compensated by the contractor either by increasing manpower and resources or by working extra hours and /or by working more than one shift. All these are to be carried out by the contractor at no extra cost.
2.7.11.2	To recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.
2.7.11.3	To Claim compensation for losses sustained including BHEL's supervision charges and overheads in completion on termination of contract and/or to impose penalty for delay in completion of the work, at the rate of ½ % ( half percent ) of the contract value per week of delay or part thereof subject to a ceiling of 10% (ten percent) of the contract value.
2.7.11.4	To terminate the Contract or to restrict the quantum of the work and pay for the portion of work executed in case BHEL's contracts with their customers are terminated for any reason.
2.7.11.5	To effect recovery from any amounts due to the contractor under this or any other contract etc., in any other form, the money BHEL is forced to pay to anybody, due to contractor's failure to fulfil any of his obligations.
2.7.11.6	While every endeavour will be made by BHEL, they cannot guarantee uninterrupted work due to conditions beyond their control. Contractor will not be entitled for any compensation / extra payment in this account.
2.7.11.7	In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the contractor.
2.8	RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS OF EMPLOYMENT OF WORKERS ETC.
2.8.1	The following are the responsibilities of the contractor in respect of observation of local laws, employment of personnel, payment of taxes etc.
2.8.2	As far as possible, unskilled workers shall be engaged from the local areas in which the work is being executed.
2.8.3	The contractor at all times during the continuance of this contract, shall in all his dealings with local labour for the time being employed on or in connection with the work, have due regard

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	to all local festivals and religions and other customs.
2.8.4	The contractor shall comply with all state and central laws, statutory rules, regulations etc. such as:
2.8.5	<p>The contractor shall comply with all applicable State and Central Laws, Statutory Rules, Regulations, Notifications, etc. such as Payment of Wages Act, Minimum Wages Act, Workmen Compensation Act, Employer's Liability Act, Industrial Disputes Act, Employers Provident Act, Employees State Insurance Scheme, Contract Labour (Regulation and Abolition) Act, 1970, Payment of Bonus &amp; Gratuity Act, Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, The Building and Other Construction Workers' Welfare Cess Act, 1996 and other Acts, Rules, and Regulations for labour/workers as applicable and as may be enacted by the State Government and Central Govt. during the tenure of the Contract and having force or jurisdiction at Site. The Contractor shall also comply with provisions of and give all such notices to the local Governing Body, Police and other relevant Authorities as may be required by the Law.</p> <p>The Contractor shall obtain independent License under the Contract Labour (Regulations and Abolition) Act, 1970 for engaging contract labour as required from the concerned Authorities based on the certificate (Form- V) issued by the Principal Employer/Customer.</p> <p>The contractor shall pay and bear all taxes, fees, license charges, Cess, duties, deposits, tolls, royalties, commission or other charges which may be leviable on account of his operations in executing the contract.</p>
2.8.6	The contractor's quoted price shall be inclusive of all taxes, fees, licence charges, deposits, duties, royalty commission or other charges towards this contract applicable at the time of submission of latest offer. However, in case Sales Tax on Works Contract, Turn Over Tax and Excise Duty are levied subsequently, the same will be considered for reimbursement by BHEL on production of documentary evidence (assessment order) towards same. The contractor have to obtain clearance / acceptance in writing from BHEL before making such payment.
2.8.7	While BHEL could pay the inspection fees, of the Boiler Inspectorate, all other arrangements for the visits periodically by Boiler Inspector to site, inspection certificates etc. will have to be made by the contractor.
2.8.8	The contractor shall be responsible for provision of health and sanitary arrangements more particularly described in Contract Labour (Regulation & Abolition Act), safety precautions etc as may be required for safe and satisfactory execution of the contract.
2.8.9	The contractor shall fulfil all his obligations in respect of accommodation including proper medical facilities for the personnel employed by him.
2.8.10	The contractor shall be responsible for proper behaviour at site and observance of all regulations by the staff employed by him.
2.8.11	The contractor shall ensure that no damage is caused to any personnel property of other parties working at site. If any, such damage is caused, it is the responsibility of the contractor to make good the losses or compensate for the same.
2.8.12	All the properties / equipment / components of BHEL / their client loaned with or without deposit to the contractor in connection with the contract shall remain the properties of BHEL/their client. The contractor shall use such properties for the purpose of execution of this contract. All such properties /equipment/components shall be deemed to be in good condition when received by the contractor unless he notifies within 48 hours to the contrary. The contractor shall return them in good condition as and when required by BHEL /their client. In case of non-return, loss, damage repairs etc. the cost thereof, as may be fixed by the site engineers, will be recovered from the contractor.
2.8.13	It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL, however, depending upon the availability, BHEL's customer's handling equipment and other plants may be made available to the contractor on payment of the Hire charge as fixed, subject to the conditions laid down by BHEL /customer from time to time. Unless paid in advance such hire charges, if applicable shall be recovered from contractor's bill / security deposit in ONE instalment.
2.8.14	The contractor shall not claim any compensation of the scope of work, due to change in design which curtails the quantum.
2.8.15	The contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection / construction / performing work under the contract.

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2.8.16	In case the contractor is required to undertake any work outside the scope of this contract the rates payable shall be those mutually agreed upon.
2.8.17	The contractor shall keep the area of works clean and shall remove debris etc while executing day – to – day work. Upon completion of work the contractor shall remove from the vicinity of work all scrap, packing materials, rubbish unused and other materials and deposit them in place to be specified by the BHEL Engineer. The contractor will also demolish all the hutments, sheds, offices, constructed and used by him and shall clean the debris. In the case of his failure to do so, the same will be arranged to be removed by the BHEL Engineer. The expenses therefore, will be recovered from contractor.
2.8.18	The contractor shall arrange and co-ordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.
2.8.19	All safety rules and codes applied by the client / BHEL at site shall be observed by the contractor without exemption. The contractor shall be responsible for the safety of the equipment material and work to be performed by him and shall maintain all light, fencing, guards, signs etc., or other protection necessary for the purpose. Contractor shall also take such additional precaution as may be indicated from time to time by the Engineer with a view to prevent pilferage, accidents, fire hazards and due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment, materials and construction tools and tackles shall be posted at site by the contractor till the completion of the work under this contract.
2.8.20	The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite tests of handling equipment, lifting tools, tackles etc as per prescribed standards and practices.
2.8.21	The contractor will be directly responsible for payment of wages to his workman. A pay roll sheet giving all the payments given to the workers and duly signed by the contractor's representatives should be furnished to BHEL site office for record purpose.
2.8.22	The intent of specification is to provide services according to most modern and proven techniques and codes. The omission of specific preference to any method, equipment of materials necessary for the proper and efficient performance of work shall not relieve the contractor of responsibility of providing much facilities to complete the work.
2.8.23	In case of any class of the work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the engineer.
2.8.24	No levy or payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.
2.8.25	The detailed drawings, specifications, instruction manual, if any, available with the BHEL Engineer will form part of tender specification. These documents will be made available for reference only to the contractor during execution of work.
2.8.26	Should any error or ambiguity be discovered in the specification or information, the contractor shall forthwith bring the same to the notice of BHEL before commencement of work. BHEL's interpretation in such cases shall be final and binding on contractor.
2.8.27	No idle labour charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour being rendered idle due to any cause at any time.
2.8.28	It is possible that some minor repair / rectification / modification may be needed on the equipment to be erected / constructed / work to be performed under this specification, for reasons not attributable to the contractor. All such repair / rectification / modification work which can be done with the available facilities at site shall be carried out by the contractor free of cost and no extra charges shall be paid to the contractor, unless stated otherwise elsewhere.
2.8.29	The quality and progress of work will be regularly reviewed. The schedule and programme of work will be given to the contractor in advance and it will be the obligation of the contractor to achieve the desired quality and progress of work by suitably reinforcing their labour force and/or by working extra hours or in more than one shift without any extra cost. Workman found unsuitable for the work will be replaced immediately by the contractor on being informed by BHEL.
2.8.30	During the erection / construction/performing work under the contract, it is very essential that proper and adequate inspection should be made constantly to maintain the quality of workmanship so that any deviation from design dimension does not exceed permissible limits. The proper function of the unit, while in operation, depends to a great extent on the above factors. The fact that effective supervision and inspection at the execution stage is less costly than any down time of running unit even for short period need not be over emphasized.

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	For the details regarding alignment and permissible dimensional deviations in the subassemblies, engineer may be consulted.
2.8.31	The contractor shall furnish daily labour report showing by classification of number of employees engaged in the various categories of work date wise and a progress report of work as required by BHEL Engineer.
2.8.32	The contractor shall execute the work in the most substantial and workmen like manner in stipulated time. Accuracy of work and timely execution are the essence of this contract. The contractor shall be responsible to ensure that the assembly and workmanship confirm to the dimensions and clearances given in the drawings and/or as per instructions of BHEL Engineer.
2.8.33	The contractor shall take all reasonable care to protect the materials and work till such time the plant /equipment has been taken over by BHEL /their client. Where necessary, suitable temporary fencing and lighting shall have to be provided by contractor as a safety measure against accident and damage of property of BHEL. Suitable caution notices shall be displayed where access to any part may be deemed to be unsafe and hazardous.
2.8.34	It will be the responsibility of the contractor to ensure safe lifting of the equipment taking due precautions to avoid any accidents and damage to other equipments and personnel.
2.9	<b>CONSEQUENCES OF CANCELLATION</b>
2.9.1	Whenever BHEL exercises its authority to terminate the contract / withdraw a portion of work under the clause 2.7 they may complete the work by any means at the contractor's risk and expenses provided that in the event of the cost of completion (as certified by the site engineer which is final and conclusive) being less than the contract cost the advantage shall accrue to BHEL and that if the cost of completion exceeds the money due to the contractor under the contract, the contractor shall either pay the excess amount ordered by BHEL or the same shall be recovered in addition to the forfeiture of security deposit and recovery of liquidated damage as per relevant clauses.
2.9.2	In case BHEL completes the work under the provisions of this condition, cost of such completion to be taken into account in determining excess cost to be charged to the contract under this condition, shall consist of materials purchased and/or labour, provided by BHEL with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL.
2.10	<b>INSURANCE</b>
2.10.1	BHEL/ their customer shall arrange for insurance the materials / properties of BHEL /customer covering the risks during transit storage, erection and commissioning.
2.10.2	It is the sole responsibility of the contractor to issue the workmen against accident and injury while at work as required by relevant rules and to pay compensation, if any, to workmen as per workmen's compensation act. Contractor shall insure his staff against accidents. The work will be carried out in a protected area and all the rules and regulation of the client/BHEL in the area of project which are in force from time to time will have to be followed by the contractor.
2.10.3	If due to negligence and/or non-observance of safety and other precautions, any accident/injury occurs to other person/public, the contractor shall have to pay necessary compensation and other expenses, if so decided by the appropriate authorities.
2.10.4	If due to contractors carelessness, negligence or non-observance of safety precaution damage to BHEL's / customer's property and personnel should occur, and if BHEL is unable to recover, in full cost from the Insurance Company, the balance will be recovered from the contractor. The damage is to be reported within 48 hours, of occurrence alongwith engineer's report. In the event of loss /theft of BHEL's customer's property while in the custody of the contractor, it will be the responsibility of the contractor to lodge an FIR with local police authorities and furnish the details of FIR and engineer's investigation report about loss / theft within 48 hours of occurrence . This is for the purpose of lodging insurance claim. If BHEL is unable to recover full cost from Insurance Company, the balance including deductible franchise wherever applicable will be recovered from the contractor.
2.11	<b>STRIKE AND LOCKOUTS</b>
	The contractor will be fully responsible for all the disputes and others issues connected with his labour. In the event of the contractor's labour resorting to strike or the lock-out declared is not settled within a period of one month, BHEL shall have the right to get the erection work executed employing its own labour or through any other agencies or both and the cost so incurred by BHEL shall be deducted from the contractor's bills as per clauses 2.7. For all purposes whatsoever the employee of the contractor shall not be deemed to be in the employment of BHEL.



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2.12	<b>FORCE MAJEURE</b>
2.12.1	The following shall amount to force majeure:
2.12.2	Acts of God, acts of any Government, war, sabotage, riots, civil commotion, police action, revolution, flood, fire, cyclone, earthquake and epidemic and other similar cause over which the contractor has no control.
2.12.3	If the contractor suffers delay in the due execution of the contractual obligation due to delays caused for force majeure as defined above, the agreed time of completion of the job covered by this contract or the obligations of the contract shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports to BHEL in writing the causes of delay and contractor shall not be eligible for any compensation.
2.13	<b>GUARANTEE</b> Even though the work will be carried under supervision of BHEL engineers, contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of 12 months from the date of start of guarantee period, as certified by the engineer for good workmanship and shall rectify free of cost all defects due to faulty erection. In case contractor fail to repair the defective works within the time specified by the engineer. BHEL may proceed to undertake the repairs of such defective works at contractor's risk & cost without prejudices to any other rights and recover the same SD/other dues.
2.14	<b>ARBITRATION &amp; CONCILIATION</b>
2.14.1	<b>ARBITRATION:</b>
2.14.1.1	<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 2.21.2 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 2.21.1.1 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>
2.14.1.2	<p>In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:</p> <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>
2.14.1.3	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.
2.14.1.4	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.

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2.14.2	<p><b>CONCILIATION:</b></p> <p>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.</p> <p>Notes:</p> <ol style="list-style-type: none"> <li>1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.</li> <li>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.</li> </ol> <p>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. The Procedure 2.3 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.</p> <p>The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 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 with effect from the date as intimated by BHEL to it.</p>
2.14.3	<p><b>No Interest payable to Contractor</b></p> <p>Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.</p>

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**SECTION – III**  
**COMMON CONDITIONS OF CONTRACT**

3.1	<b>DRAWING AND DOCUMENTS</b>
3.1.1	The detailed drawings, specification available with BHEL. Engineers will form part of this tender specifications. Those documents will be made available to the contractor during execution of work at site.
3.1.2	One set of necessary drawings to carry out the execution work will be furnished to the contractor by BHEL on loan which shall be returned to BHEL Engineer at site after completion of work. Contractor's personnel shall take care of these documents given to them.
3.1.3	The data furnished in various appendices and the drawings enclosed with this tender specification describes the equipment to be installed, tested and commissioned under this specification briefly. However, the changes in design and in quantity may be expected to occur as is usual in any such large scales of work.
3.1.4	Should any error or ambiguity be discovered in the specification or information, the contractor shall forthwith bring the same to the notice of BHEL before submission of the price bids. BHEL's interpretation in such cases shall be final and binding on the contractor if pointed out at a later date.
3.1.5	Deviation from design dimension should not exceed permissible limit. The contractor shall not correct or alter any dimension /details without specific approval of BHEL.
3.2	<b>SAFETY AND CLEANLINESS</b>
3.2.1	The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per direction of BHEL or its authorized officials to prevent loss of human lives, injuries to personnel engaged and damage to property. Before commencing the work, the contractor shall submit a 'SAFETY PLAN' to the authorized BHEL officials. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure safety of men, equipment, material and environment during execution of the work.
3.2.2	If the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorized BHEL officials, BHEL shall have the right to take corrective steps at the risk and cost of the contractor.
3.2.3	During the course of construction, alternations or repairs, scrap lumber with protruding nail, sharp edge etc and all other debris shall be kept cleaned from working areas, passage, ways and stairs in and around site.
3.2.4	Combustible scrap and debris shall be removed at regular intervals during the course of execution. Safe means shall be provided to facilitate such removal. The combustible scrap should be stored in safe place away from the plant materials to avoid fire accidents. The area shall be chosen in consultation with BHEL Engineer and to be cordoned off.
3.2.5	Rigging equipment for material handling shall be inspected prior to use in each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.
3.2.6	Rigging equipment shall not be loaded in excess of its recommended safe working load.
3.2.7	Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.
3.2.8	Contractor 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 contractor 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 shall be entertained.
3.2.9	Where it is necessary to provide and/or store petroleum products or petroleum mixture and explosives, of the contractor shall be responsible for carrying out such provision / storage in accordance with the rules and regulations laid down in the relevant Petroleum Act, Explosive Act and Petroleum and Carbide 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 authorities. The contractor shall be responsible for obtaining the same.
3.2.10	Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently.
3.2.11	When cylinders are transported by powered vehicle they shall be secured in a vertical position.

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3.2.11.1	Safety Helmets conforming to IS-2965: 1984.
3.2.11.2	Safety Belts conforming to IS-3521: 1980.
3.2.11.3	Safety Shoes conforming to IS-1989: 1978.
3.2.11.4	Eye and Face protection devices conforming to IS-8520: 1977 & IS-8960: 1978.
3.2.11.5	Hand and Body protection devices conforming to IS-2573: 1975, IS-6994: 1973, IS-8867: 1978 and IS-8519: 1977.
3.2.13	The contractor shall insure his workmen against all accidents and the policy shall be presented to BHEL Engineer on demand. Otherwise, BHEL will arrange the same and the expenditure towards this will be debited to the contractor. In case of a fatal or disabling injury accident to any person at construction sites due to lapses by the contractor, the victim and/or his/her dependants shall be compensated by the contractor as per statutory requirements. However, if considered necessary BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependants before imposing any such penalty. Appropriate enquiry shall be held by BHEL giving opportunity to the contractor for presenting his case. Above safety conditions are not exhaustive but gives an idea for the contractor and the contractor shall adhere to all the safety precaution given by the BHEL Engineer at site.
3.2.14	The contractor shall arrange at his cost suitable lighting arrangements for various levels for safe and proper working operations during night hours at the work spot as well as at the pre-assembly area.
3.2.15	The contractor shall be responsible for provision of all the safety notices and safety equipment as enjoined on him by the application of relevant statutory regulation / provisions and/or as called upon by the BHEL Engineer from time to time. He shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instruction that may endanger safety of men equipment and material.
3.2.16	The contractor shall provide temporary fencing wherever required as safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.
3.2.17	Contractor shall ensure safety of all the workmen, material and equipment, either belonging to him or to others working at site.
3.2.18	It will be the responsibility of the contractor to ensure safe lifting of the equipment, taking due precautions to avoid any accident and damage to other equipment and personnel. The T&P and other equipment shall be rested and certificate of fitness obtained before putting them to use.
3.2.19	The contractor shall provide necessary First –Aid facilities for all his employees, representatives and workmen at site. The First –Aid boxes should be placed in various elevations to as to make them available within the reach and at the quickest possible time. The contractor should conduct periodical first aid classes to keep his supervisors and Engineers properly trained for attending to any emergency.
3.2.20	All the contractor's supervisory personnel and sufficient number of workers shall be trained for fire protection duties. Enough number of such trained personnel must be available during the tenure of contract. Contractor should nominate one of his supervisors to co-ordinate and for implementation of the safety measure.
3.2.21	Contractor shall provide enough fire protecting equipment of the types and numbers at his office, temporary structures, labour colony etc. Such fire protection equipment shall be easy and kept open at all times. The fire extinguishers shall be properly refilled and kept ready which should be dried at periodic intervals. The date of charging should be marked on the cylinders. All other fire safety measures as laid down in the "CODES FOR FIRE SAFETY AT CONSTRUCTION SITE" issued by safety department of BHEL shall be followed. Non-compliance of the above requirement under fire protection shall in no way relieve the contractor of any of his responsibility and liabilities to fire accident occurring, either to his materials or equipment or those of others.
3.2.22	The contractor shall at his cost, remove from vicinity of work all scrap packing materials, rubbish, unused and other materials and deposit them in places specified by BHEL Engineer to keep the work with clean and tidy.
3.2.23	The contractor shall not use any hand lamp energized by electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes, turbines casings, condensers etc.
3.2.24	All portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licenced by appropriate statutory

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	authority shall be employed by the contractor to carry out all types of electrical works.
3.2.25	In case of any delay in the completion of a job due to mishaps attributable to lapses by the sub-contractor, BHEL shall have the right to recover cost of such delay from the payments due to the contractor, after notifying the contractor suitably.
3.2.26	Valve protection caps shall be in place and secured.
3.2.27	The contractor shall be responsible for the safe storage of his radio-active sources as per BARC rules and regulations.
3.2.28	Tarpaulin being inflammable should not be used. Only non-inflammable covering material shall be used as protective cover while pre-heating, welding, stress relieving at site.
3.2.29	If the contractor 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 contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.
3.2.60	If the contractor succeeds in carrying out its job in time without any fatal or disabling injury accident and without any damage to property, BHEL shall favourably consider to reward the contractor suitably for his performance.
3.2.31	The contractor shall carefully follow the safety requirement as per BHEL/their customer's requirement with regard to voltages used for heat treatment job lighting in critical areas.
3.2.32	Contractor shall use only properly insulated and armoured cables which conform to the requirements of Indian Electricity Act and Rules for all wiring for all electrical applications at site. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc at the cost of the contractor.
3.2.33	The contractor shall arrange adequate No. of persons specifically for clearing any debris and for house keeping of the erection area including restacking of components in the erection areas.
3.2.34	In case of any damage to property due to lapses by the contractor BHEL shall have the right to recover the cost of such damages from the contractor after holding an appropriate enquiry.
3.2.35	The contractor shall submit report of all accidents, fires and property damage, dangerous occurrences to the authorized BHEL official immediately after such occurrence, but in any case not later than twelve hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. In addition, periodic reports on safety shall also be submitted by the contractor to the authorized BHEL official from time to time as prescribed.
3.2.36	Before commencing the work, the contractor shall appoint/nominate a responsible person to supervise implementation of all safety measures and liaison with his counterpart of BHEL.
3.3	PROGRESS OF WORK
3.3.1	During the course of execution, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workmen like fitters, operators, technicians employed are not sufficient, BHEL will induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bills.
3.3.2	<p>The contractor shall submit daily, weekly and monthly progress reports, manpower reports, materials reports, consumable reports and other reports considered necessary by the engineer.</p> <p>The manpower report shall clearly indicated the manpower deployed category wise daily, specifying also activities in which they are engaged. The periodicity of the reports will be decided by BHEL Engineer at site.</p>
3.3.3	The progress reports shall indicate the progress achieved against planned with reasons indicating delays if any, and shall also furnish in detail the reasons for the same and shall give remedial action which the contractor intends to take to make good the slippage or lost time, so that further works can proceed as per the original programme and the slippage do not accumulate and affect the overall programme, in a format designed and approved by BHEL site Engineer.
3.3.4	The contractor shall arrange for weekly progress review meeting with the Engineer at site during which actual progress during the vis-a-vis schedule programme shall be discussed for action to be taken for achieving targets. The programme for subsequent week shall also be presented by the contractor for discussions. The contractor shall constantly update/revise his work programme to meet the overall requirement and suit the material availability.

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3.3.5	The contractor shall arrange for submitting 3 sets of coloured progress photographs along with negatives every month to BHEL office. The areas to be photographed will be as per the instructions of BHEL Engineer. The quoted rate shall include this contingency. (Maximum ten different snaps per month). The photographs & negatives will become property of BHEL.
3.3.6	The contractor shall maintain a record in the form as prescribed by BHEL for all operations carried out on each weld and maintain a record indicating the number of welds, the names of welders who welded the same, date and time of start and completion, preheat, temperature, radiographic results, rejections if any, percentage of rejection, etc., and submit copies of the same to the BHEL Engineer as required.
3.4	INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL/ STATUTORY INSPECTION
3.4.1	All equipment piping and accessories covered under this specification shall be subject to stage wise inspection by BHEL/customer engineer.
3.4.2	The contractor has to follow BHEL FQA checklist for erection and welding of various equipment and piping schemes at site.
3.4.3	The protocols between contractor and customer /BHEL shall be made prior to installation for correctness of foundation, material inspection at each stage of installation as per requirement of BHEL/ customer.
3.4.4	Preparation of quality assurance log sheets and protocols with customer's engineers, welding logs and other quality control and quality assurance documentation as per BHEL engineer's instruction is within the scope of the contractor
3.4.5	<p>A daily log book shall be maintained by ever supervisor / engineers or contractor on the job in duplicate (one for BHEL one for contractor) for detailing and incorporating alignment / clearance / levelling readings and inspection details of various equipment. All important measurements shall be recorded in the daily log book with sketches based on drawings indicating readings / measurements actually taken and signed by BHEL /customer's / contractor's representative.</p> <p>Approval given by BHEL for welding, results of various tests shall also be recorded. High pressure welding details like serial number, welder's name, date of welding, details of repair etc, likewise radiography details and heat treatment details shall be recorded.</p>
3.4.6	All the electrical / mechanical and testing instruments, feeler gauge, height gauge, dial gauge, micrometers, spirit levels, surface plates, straight edges, vernier calipers and all other instruments as per the instructions of BHEL Engineer shall be provided by the contractor for checking, levelling, align to centering etc of the erected equipments at various stages.
3.4.7	The contractor shall ensure deployment of valuable and calibrated INSTRUMENT, MEASURING and TEST EQUIPMENTS (IMTE). The IMTEs shall have test / calibration certificates from authorized / Govt. approved/accredited agencies traceable to national / international standards. Retesting / recalibration shall also be arranged by the contractor at their own cost at regular intervals during the period of use as advised by BHEL. The contractor shall also have alternate arrangement of such IMTEs so that work does not suffer when the particular IMTE is sent for calibration. Also if any IMTE found not fit for use, BHEL shall have the right to stop use of such IMTE and instruct the contractor to deploy proper IMTE and recall, i.e. repeat the reading taken by that instrument failing which BHEL may deploy IMTEs and retake the readings at the contractor's cost.
3.4.8	Apart from day to day inspection by BHEL Engineers, stage inspection of equipment under erection and commissioning at various stages by engineers from manufacturing plants and Field Quality Assurance team will be conducted. Contractor shall arrange labours, tools and plants for such inspection free of cost.
3.4.9	Statutory Inspection
3.4.9.1	However, piping system which are under the purview of IBR shall be tested as per the requirement of the IBR. The piping system has to be tested as per the instructions given in the respective drawings, BHEL's decision is final in this regard.
3.4.9.2	The scope includes getting the approval from statutory authorities (like boiler inspector). This includes arranging for inspection visits of Boiler Inspector periodically as per BHEL Engineer's instructions, submitting documents, radiography etc. and following up the matter with them. All fees and expenditure connected with the contractor for testing his welders and testing, calibration of his instruments and equipment arrangement of Boiler Inspector's visit will be paid by the contractor.
3.4.9.3	It will be contractor's responsibility to obtain approval of statutory authorities, wherever applicable for conducting any work which comes under the purview of these authorities.
3.4.9.4	However, BHEL will pay fees for Boiler Inspector's visits in connection with hydraulic test,

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	light inspection fees, registration fees etc. In case these inspections have to be repeated due to the default /fault of contractor and the fees have to be paid again, the contractor shall have to bear the charges.
3.5	<b>TOOLS &amp; PLANTS</b>
3.5.1	All TP's including precision measuring instruments, lifting devices shall have to be arranged by the subcontractor unless otherwise specifically mentioned.
3.5.2	In the event of BHEL issue TP's, measuring instruments etc. the subcontractor and BHEL shall maintain joint protocol as per enclosed annexure about the condition of all T&P, instruments etc taken from BHEL's custody and return to BHEL after use. The subcontractor shall not use these equipments for purposes other than the scope of work given in this tender documents.
3.5.3	It is the responsibility of subcontractor to keep these equipments always in working condition and ensure their safe return in working condition to BHEL's store subject to normal wear & tear. Non-compliance to this may entail BHEL to get the necessary repair done at the risk and cost of the subcontractor.
3.5.4	All the T&P, measuring instruments etc must be mobilized at site in advance prior to actual start of the job. They must be in accordance with those recommended in the tender document, if any, and must be got verified to that effect. Formal clearance in writing must be obtained from BHEL's resident Manager / Engineer before the subcontractor starts the job.
3.5.5	All T&P, lifting tackles and pulling devices to be used must bear valid/latest test certificates for their suitability, and the same to be furnished alongwith the offer or during execution.
3.5.6	Also certificates of test / calibration with date of validity for various measuring instruments have to be submitted by the tenderer alongwith the offer or during execution.
3.5.7	T&P/ Instrument found defective /improper /insufficient or not having valid test / calibration certificate should be made good immediately.
3.5.8	In the event of failure of subcontractor to bring necessary and sufficient T&P, BHEL will arrange /hire the same at the risk and cost of the subcontractor including transportation of the same from the source place. The entire charge for hire as above and overhead charges as applicable shall be paid by the subcontractor or deducted from the subcontractor's bills.
3.5.9	BHEL may at his discretion also terminate this contract / or take out any or whole part of the contract from the scope of the subcontractor. Decision of BHEL in this regard will be final and binding on the subcontractor.
3.6	<b>CONSUMABLE</b>
3.6.1	All consumables, like gas, electrodes, chemicals, lubricants etc required for the job shall be arranged by the subcontractor at his cost unless otherwise specifically mentioned. However, any spares / components / consumables / materials, excepting welding materials, going permanently into the clients equipment and materials as specifically mentioned in special condition of contract, VOL –II or elsewhere in the NIT shall be provided to the subcontractor.
3.6.2	All consumables to be used for the job shall have to be approved by BHEL prior to use.
3.6.3	In the event of failure of subcontractor to bring necessary and sufficient consumables, BHEL shall arrange for the same at the risk and cost of the subcontractor. The entire cost towards this alongwith overhead shall be paid by the subcontractor or deducted from the subcontractor's bills.
3.6.4	BHEL may at his discretion terminate this contract / or take out any or whole part of the contract from the scope of the subcontractor. Decision of BHEL in this regard will be final and binding on the subcontractor.
3.7	<b>MANPOWER</b>
3.7.1	The subcontractor shall deploy all types of workmen like high pressure welder, fitter, mill right fitter, electrician, carpenter, rigger, serang, khalasi helper, painter etc as recommended in the tender or as required for proper completion of the job. Only trained and competent workmen with previous experience of similar job shall be deployed. They shall hold valid certificates as necessary for the job.
3.7.2	The subcontractor shall submit tentative deployment plan of manpower matching with the job completion schedule.
3.7.3	The subcontractor shall ensure proper out-turn and discipline on the part of workmen put on the job. The workmen shall carry out the job in safe and proper manner and in co-ordination with the workmen of BHEL of other agencies.
3.7.4	In the event of failure of subcontractor to bring necessary and sufficient manpower, BHEL shall arrange for the same at the risk and cost of the subcontractor. The entire cost towards this shall be paid by the subcontractor or deducted from the subcontractor's bills.
3.7.5	BHEL may at his discretion terminate this contract /or take out any or whole part of the



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	contract from the scope of the subcontractor. Decision of BHEL in this regard will be final and binding on the subcontractor.
3.8	PLANNING
3.8.1	Contractor shall draw the monthly programme of activities alongwith BHEL Engineer indicating quantum of work to be achieved and events to be completed. Once the programme is drawn he shall adhere to the same. The contractor shall prepare and submit by 15 <sup>th</sup> of every month to BHEL site incharge a programme for activities from 25 <sup>th</sup> of the month to 24 <sup>th</sup> the succeeding month indicating the work front, quantum and nature of work etc. Discussions will be held by the contractor with BHEL Site Incharge and the programme will be finalized jointly signed by the Engineer Incharge and the contractor within a week of submission of the programme (say by 22 <sup>nd</sup> , the agreed programme should be ready). A review of the performance will be made and considering the availability of components to be erected and other constraints over which the contractor has no control, the performance will be ascertained and jointly recorded by both the parties. Even when a programme could not be made, ascertainment of performance and recording the same by both the parties is necessary.
3.8.2	In addition, contractor shall arrange for weekly progress review meetings with the engineer at site during which actual progress during the week, vis-à-vis scheduled programme shall be discussed and action taken for achieving the targets.

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**ANNEXURE - A**  
**DECLARATION SHEET**

I/We, \_\_\_\_\_ hereby declare and confirm that we have visited the project site, namely, \_\_\_\_\_ site, under specification no PSER:SCT: \_\_\_\_\_, issued by M/S BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR-EASTERN REGION, KOLKATA, and acquired full knowledge and information about the site conditions including the law & order and other conditions prevalent at and around site. We further confirm that the above information is true and correct and we will not raise any claim of any nature due to lack of knowledge of site conditions.

I/We, hereby offer to carry out work as detailed in above mentioned tender specification, in accordance with terms & conditions thereof.

I/We, have carefully perused the following documents connected with the above specification and agree to abide by the same:

1. Volume I, II and III of tender specification.
2. Other sections, annexures, schedules, documents etc.

I/We, further confirm that I/we have not changed/tampered the tender document downloaded from the BHEL's website { [www.bhel.com](http://www.bhel.com) or [www.jantermanter.com](http://www.jantermanter.com) } and in case any change from the tender document published in the website is detected at a later date in the signed copy of the same submitted by us along with the offer, the same shall stand null and void and the terms and conditions of the tender as published in the above mentioned BHEL website shall prevail only.

I/we, further certify that Sri \_\_\_\_\_ is authorised to represent on behalf of me/us for the above mentioned tender and a valid power of attorney to this effect is also enclosed.

I have deposited/forwarded herewith the earnest money deposit in the form prescribed and as stipulated towards earnest money deposit for a sum of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) vide BHEL cash receipt No \_\_\_\_\_, dated \_\_\_\_\_, Call deposit no \_\_\_\_\_, dated \_\_\_\_\_, Demand draft no \_\_\_\_\_, dated \_\_\_\_\_, which shall be refunded should our offer not be accepted. I/we further agree to deposit such additional sum which along with the sum of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) mentioned above, shall make up the security deposit for the work as provided for in the tender specification within the stipulated time as may be indicated by BHEL, Power Sector, Eastern Region, DJ-9/1, Sector-II, Salt Lake, Kolkata - 700 091.

I/We, further agree to execute all the works referred to in the said documents upon the terms and conditions contained or referred to therein and as detailed in the annexure enclosed thereto.

Date: \_\_\_\_\_ Tenderer:  
Place: \_\_\_\_\_ Address:

Witnesses with their addresses

Signature	Name	Address
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- 1.
- 2.
- 3.

Authorised representative's signature with name and address:

<b>Bharat Heavy Electricals Limited</b>		
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ANNEXURE - B  
GENERAL INFORMATION ABOUT TENDERER

FORMAT I - ORGANISATION STRUCTURE

1. Management structure of the firm

Whether Public Limited/Private Limited/Proprietorship:

2. Details of staff presently on permanent roll of organisation

A1	Name of site incharge	
A2	Qualification and experience	

b) Engineering staff:

Sl no	No of Officials	Designation	Specialists, if any (indicate the area of specialisation)	Qualification with experience	State no, proposed to be deployed	Remarks if any
1	2	3	4	5	6	7

c) Details of technical staff:

Sl no	Category	Total no on roll	Nos proposed to be deployed at site for this job
1	Supervisors/Foreman		
2	Storekeepers		
3	Crane Operators		
4	Compressor Operator		
5	Mill Wright Fitter		
6	Mill Fitters		
7	Instrument Fitter		
8	Electrician		
9	Sarang		
10	Rigger		
11	Carpenter		
12	Painter		
13	Tinsmith		
14	Sheet metal fabricator		
15	Pipe fabricator		
16	Cable jointing		
17	Light Vehicle Driver		
18	Heavy vehicle Driver		
19	Others		

d) Please indicate how you propose to ensure quality of work at site.

FORMAT II - FACILITIES FOR STAFF AND WORKERS AT SITE

1. Accommodation

a) For Engineers/supervisors/other staff

Sl no	Category	Type of accommodation	Facilities provided	Remarks

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b) No of quarters, plinth area of each quarter and estimated cost proposed to be constructed for workmen

-----

2. Medical

-----

3. Conveyance

-----

4. Other amenities

-----

Signature of the tenderer

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ANNEXURE - C  
PROFORMA OF FINANCIAL VIABILITY

1	Owner's capital in the business (in case of Partnership, please mention percentage shares and amounts).	
2	Quantum of business done during last three financial years. a. b. c.	
3	Value of fixed assets of the business in last three years. a. b. c.	
4	Guarantee limits (if any) enjoyed by the firm.	
5	Over draft limits (if any) enjoyed by the firm.	
6	Please enclose audited profit and loss account and balance sheet for last three years (indicate no of sheets).	
7	Certificate from Scheduled Bank to prove contractor's financial capacity to undertake the work duly indicating the financial limits the tenderer enjoys.	
Note: All the above documents should be duly certified by auditors /bank as may be applicable.		

Signature of the tenderer

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ANNEXURE - D  
ANALYSIS OF SIMILAR JOBS EXECUTED/IN PROGRESS

Sl N o	Agency by whom awarded	Location of project	Capacity and unit no	Scope of work and tonnage	Date of award	Contract value in Rs. Lacs	%age work completed & due date for compln	Date of completion if job is already over	No of skilled /unskilled workers deployed	No. of Engrs. & Sup. deployed	Details of Major T&Ps deployed	Consumables
1	2	3	4	5	6	7	8	9	10	11	12	13

Signature of the tenderer

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ANNEXURE – E

MONTHWISE MANPOWER DEPLOYMENT PLAN

[INDICATE NO. OF PERSONS TO BE DEPLOYED IN EACH MONTH]

SL. NO.	CATEGORY	MONTH-1	MONTH-2	MONTH-3	MONTH-4	MONTH-5	MONTH-6	MONTH-7	----SO ON				

Signature of the tenderer

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ANNEXURE - F  
STATUS OF T&P AND DEPLOYMENT PLAN

A. STATUS OF TOOLS AND PLANTS

SL NO	NAME OF EQPT.	QTY. OWNED	REGISTRATION NO. WHEREVER APPLICABLE	DOCUMENTS ENCLOSED FOR PROOF OF OWNERSHIP	PRESENT LOCATION	QTY. PROPOSED TO BE DEPLOYED FOR THIS JOB

Signature of the tenderer



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B. MONTHWISE T&P DEPLOYMENT PLAN  
**[INDICATE NO. OF PERSONS TO BE DEPLOYED IN EACH MONTH.]**

SL. NO .	CATEGORY	MONTH- 1	MONTH- 2	MONTH- 3	MONTH- 4	MONTH- 5	MONTH- 6	MONTH- 7	--- SO ON				

Signature of the tenderer

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ANNEXURE - G  
ANALYSIS OF QUOTED RATE

Sl no.	Description	Percentage of quoted rate	Remarks
1	Salary & wages of staff and workers		
2a	Consumables		
2b	Gases		
2c	Welding Electrodes		
2d	P.O.L.		
	Others		
3	Depreciation and maintenance for T&P		
4	Depreciation and Maintenance for other items		
5	Establishment and administration expenses of site		
6	Overheads		
7	Profit		

Signature of the tenderer

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ANNEXURE - H  
CHECKLIST OF GENERAL PARTICULARS

Note: Tenderers are requested to fill in the following details and no column should be left blank.		
1	Name and address of the tenderer	
2	Telegraphic/Telex address	
3	Phone no/FAX no (Office)	
4	Details about type of the firm/company	
5	Name and designation of the official of the : tenderer	
6	Attested copy of the Power of Attorney	
7	Tenderers proposal no and date	
8	Whether EMD submitted and submission details	
9	Declaration sheet (in the format of Annexure - A)	
10	Details of experience (in the format of Annexure - D)	
11	Monthwise & categorywise manpower deployment : plan (in the format of Annexure - E)	
12	Status of T&P and monthwise deployment plan : (in the format of Annexure - F)	
13	Financial status (in the format of Annexure - C)	
14	Valid Income tax clearance certificate	
15	Analysis of rate quoted (in the format of : Annexure - G)	

Date ..... Signature of the tenderer  
(with company seal)

Witness (signature with full particulars)

- 1.
- 2.

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## ANNEXURE – I

### **PROFORMA OF BANK GUARANTEE (in lieu of SECURITY DEPOSIT)**

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 agreed to exempt ( Name of the Vendor / Contractor / Supplier) having its registered office at \_\_\_\_\_<sup>1</sup> (hereinafter called the said Contractor which term includes supplier), from demand under the terms and conditions of the Contract reference No. \_\_\_\_\_<sup>2</sup> dated \_\_\_\_\_<sup>2</sup> valued at Rs. ....<sup>2</sup> ( Rupees -----  
-----)<sup>2</sup> for <Nature of the Work><sup>3</sup> (hereinafter called the said Contract) of Security Deposit for the due fulfilment by the said contractor of the terms and conditions contained in the said Contract, on production of a Bank Guarantee for Rs. \_\_\_\_\_<sup>4</sup> (Rupees \_\_\_\_\_ only), we \_\_\_\_ (indicate the name and address of the Bank) having its Head Office at \_\_\_\_\_ (address of the head Office) (hereinafter referred to as the Bank) at the request of \_\_\_\_\_ [Name of Contractor(s)] do hereby undertake to pay to the Employer an amount not exceeding Rs. \_\_\_\_\_ in the event of any breach by the said Contractor(s) of any of the terms and conditions contained in the said Contract.

We, \_\_\_\_\_ (indicate the name of the Bank), do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely 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(s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

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The payment so made by us under this guarantee shall be a valid discharge of our liability for payment hereunder and the Contractor(s) shall have no claim against us for making such payment.

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We, 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 claim satisfied or discharged or till \_\_\_\_\_<sup>5</sup> or till the office/Department/Division of Bharat Heavy Electricals Limited certifies that the terms and conditions of the said Contract have been fully and properly carried out by the said contractor(s) and also including the satisfactory performance of the equipment during guarantee period and accordingly discharges this guarantee. 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 the liability under this guarantee thereafter.

We, \_\_\_\_\_ (indicate the name of the 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(s) 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(s) 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 any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said contractor(s) 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.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

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

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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, \_\_\_\_\_ (indicate the name of the Bank) \_\_\_\_\_ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

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

Date \_\_\_\_\_ Day of \_\_\_\_\_  
for \_\_\_\_\_ (indicate the name of the Bank) \_\_\_\_\_

(Signature of Authorised signatory)

<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)**



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- 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.

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ANNEXURE - J  
PROFORMA FOR CONTRACT AGREEMENT

Agreement No : PSER:SCT: Date:

Name of the work :

Name of the :  
contractor with  
full address

Amount of tender : Rs /- (Rupees \_\_\_\_\_  
only)

Telex of intent No : PSER:SCT: , dated

Work order No : PSER:SCT: , dated

Time allotted for : \_\_ ( ) months from start of work  
completing work

FOR CONTRACTOR

FOR BHARAT HEAVY ELECTRICALS LTD

<b>Bharat Heavy Electricals Limited</b> Power Sector – Eastern Region, Kolkata		
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### CONTRACT AGREEMENT

Agreement No : PSER:SCT: \_\_\_\_\_, Dated :

1. This agreement made this day the \_\_\_\_\_, 200\_ between Bharat Heavy Electricals Limited, Power Sector, Eastern Region, Calcutta-700 091, having its registered office at BHEL House, Siri Fort, New Delhi-110 049 (hereinafter called the FIRST PARTY) of one part and Messers \_\_\_\_\_ (called the "CONTRACTOR") of the second part.
2. Whereas the first party is desirous of executing the work of, more particularly described in the appendices including specifications attached herewith.
3. Whereas in pursuance of the said contractor's tender having been accepted, the first party has decided to give the above said work to the contractor. Whereas the said contractor has agreed to do the aforesaid work of the first party subject to the conditions herein contained in these presents, instructions to tenderers, general conditions and special conditions, schedules appendices, Letter of intent, Work order and specifications (hereinafter referred as the said contract rate).
4. AND WHEREAS THE SAID contractor has furnished a Bank Guarantee No \_\_\_\_\_, dated \_\_\_\_\_, for a sum of Rs \_\_\_\_\_ /- (Rupees \_\_\_\_\_ only) from M/s \_\_\_\_\_ Bank, Branch \_\_\_\_\_, valid upto \_\_\_\_\_ towards initial 50% security deposit and has further agreed for balance 50% security deposit being recovered at 10% of the value of each running bill till the full security deposit is made up/full security deposit for the satisfactory completion and performance of the work and whereas the validity of the said bank guarantee has to be extended by the contractor, if so required before \_\_\_\_\_ for the balance period of contract and in the event of his failure to do so, the contractor shall pay or accept recovery of this amount of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) from the bills forthwith in one instalment and it has further been agreed that the failure to extend the validity of the Bank guarantee or failure to pay the aforesaid amount in the manner specified above shall constitute the breach of contract, and first party reserves the right to take any legal action deemed fit for recovering the said sum of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only).
5. NOW THESE PRESENTS WITNESS that in consideration of the said contract schedule and said contract rate, as also of agreement of good and faithful service to be rendered and performed by the contractor in the execution of the said work, subject to the stipulation hereinafter expressed.
6. That the said contractor will perform the aforesaid work subject to the condition contained in these presents, instructions to tenderers, general and special

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condition of contract and the contract document attached herewith including the said schedules, specifications, appendices, Letter of intent, Work order attached and also such other drawings and instructions as may from time to time be given by the first party. And that the said contractor shall be deemed to have carefully examined, the specifications and conditions of contract, appendices, schedules, Letter of intent, Work order, drawings etc as aforesaid and also to have satisfied himself as to the nature and character of the work to be executed.

7. That the said contractor shall carry out the complete execution of the said work to the entire satisfaction of the engineer within the agreed time schedule.
8. That the first party after proper scrutiny of the bills submitted by the said contractor will pay to him during progress of the said work, at the said contract rate and agreed terms of payment, a sum as determined by the first party in respect of the work executed by the contractor.
9. That the contract shall come into force with retrospective effect \_\_\_\_\_, the date which the letter accepting the tender (Letter/Telex of Intent) has been issued to the said contractor. However start of work shall be as defined in the tender specification.
10. That whenever under this contract or other wise, any sum of money shall be recoverable from or payable by the contractor, the same may be deducted in the manner as set out in the conditions of contract as aforesaid.
11. That all charges on account of octroi, terminal and sales tax or other duties on materials obtained for the works shall be borne by the said contractor.
12. That is agreed between the parties that the non-exercise of any of the powers conferred on the authorities of the first party will not in any manner constitute waiver of the conditions hereto contained in these presents and the liability of the said contractor either of past or future compensation shall remain unaffected.
13. That the expression BHEL wherever occurring means THE BHARAT HEAVY ELECTRICALS LIMITED, POWER-SECTOR, EASTERN REGION, CALCUTTA - 700 071.
14. The documents hereto attached viz:
  - (1) BHEL's tender specification No: \_\_\_\_\_.
  - (2) Contractor's offer No: \_\_\_\_\_, dated \_\_\_\_\_.
  - (3) BHEL's TOI/LOI No: \_\_\_\_\_, dated \_\_\_\_\_.
  - (4) Contractor's unqualified acceptance letter no: \_\_\_\_\_, dated \_\_\_\_\_ of BHEL's TOI/LOI.
  - (5) BHEL's Work Order No: \_\_\_\_\_, dated \_\_\_\_\_.

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(6) Contractor's unqualified acceptance letter no \_\_\_\_\_, dated \_\_\_\_\_ of above BHEL's Work Order.

(7) and others, if any.

shall also form part of the contract agreement.

15. In witness hereof the parties have respectively set their signature in the presence of:

FOR CONTRACTOR

WITNESS

1.

2.

FOR BHARAT HEAVY ELECTRICALS LIMITED

WITNESS

1.

2.

<b>Bharat Heavy Electricals Limited</b>		
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## ANNEXURE-K

### 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, .

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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.



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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:

- d) The liability of the Bank under this Guarantee shall not exceed.....<sup>7</sup>
- e) This Guarantee shall be valid up to .....<sup>8</sup>
- f) 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

<b>Bharat Heavy Electricals Limited</b> Power Sector – Eastern Region, Kolkata		
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(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:**

**3. Units are advised that expiry of claim period may be kept 2/3 months after validity date.**

**4. In Case of Bank Guarantees submitted by Foreign Vendors-**

**c. 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.

**d. 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.**

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- 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.

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**ANNEXURE-L**  
**FORMAT FOR BANK GUARANTEE FOR SECURITY DEPOSIT CUM PERFORMANCE BANK**  
**GUARANTEE BOND**

B.G. NO.

Date

This deed of Guarantee made this ----- day of -----two thousand ---- by <Name and Address of Bank> hereinafter called the "The Guarantor" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns) in favour of M/s Bharat Heavy Electrical Limited ( A Govt. of India Undertaking) a company incorporated under the Companies Act, 1956, having its registered office at BHEL House, Siri Fort, Asiad, New Delhi – 110049 through its unit at <Address of Power Sector Region<sup>1</sup>> hereinafter called "The Company" (which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns)

WHEREAS < Contractor's Name and Address> (hereinafter referred to as the Contractor) have entered into a contract arising out of Letter of Intent no. < LOI REF & Date > (hereinafter referred to as "the contract") for < Name of Work > with the company.

AND WHEREAS the contract inter-alia provides that the contractor shall furnish to the company a sum of Rs.----- (Rupees-----) towards security deposit for due and faithful performance of the contract in the form and manner specified therein.

AND WHEREAS the contractor has approached the Guarantor and in consideration of the arrangement arrived at between the contractor and the Guarantor, the Guarantor has agreed to give the Guarantee as hereinafter mentioned in favour of the company.

The Guarantor do hereby guarantee to the company the due and faithful performance, observance or discharge of the Contract by the contractor and further unconditionally and irrevocably undertake to pay to the Company without demur and merely on a demand, to the extent of Rs.----- (Rupees-----) against any claim by the company on them for any loss, damage, costs, charges and expenses caused to or suffered by the company by reasons of the contractor making any default in the performance, observance or discharge of the terms, conditions, stipulations or undertakings or any of them as contained in the contract.

The decision of the company whether any default has occurred or has been committed by the contractor in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them as contained in the contract and / or as to the extent of loss, damage, costs, charges and expenses caused to or suffered by the company by reason of the contractor making any default in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them shall be conclusive and binding on the Guarantor irrespective of the fact whether the contractor admits or denies the default or questions the correctness of any demand made by the company in any Court, Tribunal or Arbitration proceedings or before any other Authority.

The company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the terms and conditions of the contract or extend time of performance by the contractor or to postpone for any time and from time to time any of the powers exercisable by it against the contractor and either enforce or forebear from enforcing any of the terms and conditions governing the contract or securities available to the company and the Guarantor shall not be released from its liability under these presents by any exercise by the company of the liberty with reference to the matters aforesaid or by reasons of time being given to the contractor or any other forbearance, act or commission on the part of the company or any indulgence by the company to the contractor or any other matter or thing whatsoever

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which under the law relating to sureties would, but for this provision have the effect of so releasing the Guarantor from its liability under this guarantee.

The Guarantor further agrees that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the contract and its claim satisfied or discharged and till the company certifies that the terms and conditions of the contract have been fully and properly carried out by the contractor and accordingly discharges this Guarantee, subject however, that the company shall have no claim under this Guarantee after ----- i.e. (3 months more than the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time, as the case may be) unless a notice of the claim under this Guarantee has been served on the Guarantor before the expiry of the said period in which case the same shall be enforceable against the Guarantor notwithstanding the fact that the same is enforced after the expiry of the said period.

The Guarantor undertakes not to revoke this Guarantee during the period it is in force except with the previous consent of the Company in writing and agrees that any liquidation or winding up or insolvency or dissolution or any change in the constitution of the contractor or the Guarantor shall not discharge the Guarantor's liability hereunder.

It shall not be necessary for the company to proceed against the contractor before proceeding against the Guarantor and the Guarantee herein contained shall be enforceable against them notwithstanding any security which the Company may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the Guarantor hereunder be outstanding or unrealized.

Notwithstanding anything contained herein before, our liability under the Guarantee is restricted to Rs.----- (Rupees-----). Our guarantee shall remain in force until -----, i.e. (the present date of validity of Bank Guarantee unless the date of validity of this Bank Guarantee is further extended from time to time) unless a claim or demand under this guarantee is made against us on or before ----- (3 Months more than the validity date) we shall be discharged from our liabilities under this Guarantee thereafter.

Any claim or dispute arising under the terms of this documents shall only be enforced or settled in the courts of at < Name of place > only.

The Guarantor hereby declares that it has power to execute this guarantee and the executant has full powers to do so on behalf of the Guarantor.

IN WITNESS whereof the -----  
(Bank) has hereunto set and subscribed its hand the day, month and year first, above written.

(Name of the Bank)

Bank

Guarantee)

Signed for and on behalf of the

(Designation of the Authorized Person Signing the

(Signatory No.-----)

DATED:

SEAL

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Notes :

1. **Address of Power Sector Regions (inviting the Tender)** is as below:
  - PSNR : Bharat Heavy Electricals Limited, Power Sector Northern Region, HRDI & PSNR Complex, Plot No 25, Sector 16-A, Noida – 201 301 (Uttar Pradesh)
  - PSER : Bharat Heavy Electricals Limited, Power Sector Eastern Region, BHEL Bhawan, Plot No 9/1, DJ Block, Sector-II, Salt lake City, Kolkata – 700 091
  - PSWR: Bharat Heavy Electricals Limited, Power Sector Western Region, Shree Mohini Complex, 345 Kingsway, Nagpur 440 001
  - PSSR: Bharat Heavy Electricals Limited, Power Sector Southern Region, 690, Anna Salai, Nandanam, Chennai 600 035
2. **Name of place (for jurisdiction of Courts)** is as below:
  - PSNR : Delhi
  - PSER : Kolkata
  - PSWR: Nagpur
  - PSSR : Chennai
3. The BG shall be executed on non-judicial stamp papers of adequate value procured in the name of the Bank in the State where the Bank is located.
4. The BG is required to be sent by the executing Bank directly to BHEL at the address where tender is submitted / accepted under sealed cover.

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22.0	IBRA / MOBILISATION ADVANCE
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24.0	ADDITIONAL SECURITY DEPOSIT
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These special conditions shall be construed as part of tender document and shall be read along with general conditions of contract (GCC) and other volumes of tender. In case of any conflict or inconsistency between GCC, other volumes and these special conditions contract (SCC), the same shall be brought out by the bidder in writing to BHEL for clarification, failing which most stringent interpretation/ clause in favour of BHEL shall be adopted and the same shall be binding to the bidder.

CLAUSE NO	DESCRIPTION
<b>1.0</b>	<b>SCOPE OF WORK</b>
1.1	Providing One (1) Number Tower Crane on monthly rental basis for BHEL North Karanpura 3x660 MW STPP, Tandwa, Jharkhand , as per specification furnished in clause 3.0.
<b>2.0</b>	<b>PROJECT INFORMATION &amp; APPROACH TO SITE</b>
	North Karanpura Super Thermal Power Project (3x660 MW), a pit head coal based thermal power project, is located in Hazaribagh and Chatra districts of Jharkhand State. Basic inputs i.e. coal, water and land have already been tied up. The project is proposed for the States & Union Territories of Northern, Western and Eastern Regions and the State of Jharkhand. The capacity of the project is 1980 MW comprising of three (3) units of 660 MW each. The power project is proposed to be located near Tandwa town in Chatra district in the state of Jharkhand on Hazaribagh-Chatra State highway at a distance of about 50 kms from Hazaribagh city. The nearest commercial airport is Ranchi at a distance of 150 kms from project site. The nearest railhead Khilari Railway Station on Ranchi-Garhwa section of Eastern Railways is about 40 kms from project site
<b>3.0</b>	<b>GENERAL SPECIFICATION</b>
3.1	Crane version:- Stationary on foundation anchors or chassis mounted. Detail Foundation design & drgs. and other technical inputs shall be furnished by the vendor to BHEL for providing foundation. Vendor's engineer shall certify the adequacy of foundation before assembling of the crane. Foundation Bolts are to be supplied by vendor.
3.2	Lifting capacity of the crane- 40MT or above.
3.3	Working height: 85 Mtr. (below hook) or above. Working Radius-70M or above. The crane shall have the facility of working in various heights as per erection requirement at site.
3.4	Load criteria: Tip load 10MT (below hook) or above at 70M jib Radius.
3.5	Tower type- Self telescoping type tower with hydraulic climbing facility.
3.6	Mechanism:-Hoisting, Slewing, trolleying etc.
3.7	Safety Devices:- The crane shall be provided with all kinds of safety devices including load limiter, height limiter, slewing limiter, grip block, trolley brake etc. which are all mechanical & Electrical integration products, sensitive and reliable with the capability of working in construction site environment.
3.8	The crane shall be equipped with rest platform and guard rail etc. and other protective facilities for operator's personal safety when moving up & down. Bidder shall indicate the climbing facility provided with the crane.
3.9	Bidder shall clearly indicate electrical power requirement to operate the crane which shall be provided at free of cost by BHEL.
3.10	Bidder shall indicate the minimum free standing height of the crane and external anchoring details if required.
3.11	Wind speed limitation considering storm conditions as per standard to be indicated by bidder.
3.12	The age of the crane shall not be more than <b>15 years</b> & relevant documents should

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	be attached in support of the same.				
3.13	The crane shall be provided with operator, helper, service & maintenance staff,& all other consumables (if any) for minimum 14 hrs ( inclusive of 1 hour lunch break) daily duty at site, on fixed monthly hire basis, with separate mobilization-demobilization, installation supervision, dismantling supervision charges . The crane should be in good working condition. <b>Bidder may please note counter weight ,as required ,shall be in the scope of supply of bidder.</b>				
3.14	The bidder shall furnish detail foundation drg. for the crane to BHEL & foundation shall be provided by BHEL. Bidder shall also furnish detail load chart with range diagram and relevant drgs. of tower crane. The crane proposed to be hired is planned for erection work in ACC area wherein tower height requirement may vary. Hence the subject crane shall have the capability of working at various heights. Deployment schedule of the crane is indicated in the relevant clause of the tender.				
<b>4.0</b>	<b>DEPLOYMENT DETAILS, CONTRACT PERIOD &amp; DAILY WORKING HOURS</b>				
4.1	DEPLOYMENT SCHEDULE, DURATION				
	Project	Crane Capacity	Tentative deployment schedule	Duration (Month)	Extension provision (Month)
	North Karanpura STPP	40 MT	April,2020	24	6
4.2	The contract duration period for crane deployment shall be as above, to be reckoned from the date of complete commissioning and load test after receipt of the crane with all accessories at site in good order & condition, as certified by BHEL's site engineer from North Karanpura Site.				
4.3	In case of exigency site requirement, the schedule is further extendable for additional months (As indicated above) at the same terms & conditions depending upon actual site requirement with minimum 1 months (30 days) notice period in advance from the site.				
4.4	The monthly rate quoted in the prescribed rate schedule shall remain firm throughout this period including extended period (if any).				
4.5	The crane with operator, helpers and service/ maintenance staff shall remain available for minimum cumulative 14 hours/ day (any part of the day) inclusive of 1 hour lunch break.				
4.6	If the performance of crane is not satisfactory, the contract shall be liable for termination without prior notice.				
<b>5.0</b>	<b>SCHEDULE OF CRANE MOBILIZATION &amp; LOCATION</b>				
5.1	The tentative deployment schedule of the crane is indicated in the relevant clause of the tender. The cranes with all accessories, operator, helper etc shall have to be transported & physically mobilized to BHELNorth Karanpura Project Site within a period of 90 (Ninety) days from the date of notice by Construction Manager- BHEL for the site. Notice from site will be issued after obtaining foundation drg. ( complete in all respect) & receipt of foundation bolts at site for initial installation. Foundation bolts for initial installation of Tower Crane must be supplied within 45 days of receipt of LOI from BHEL. Foundation drawings shall be furnished within 15 days from the date of receipt from LOI.				
5.2	Consignee for North Karanpura Project Site is as under. <b>THE CONSTRUCTION MANAGER, BHEL SITE OFFICE, 3x660MW NORTH KARANPURA STPP, Tandwa Distt.- Chatra, State- Jharkhand</b>				
5.3	For transportation of crane BHEL shall not provide road permits/ waybills. However in the extreme emergency condition , if BHEL has to provide the requisite road permit for which if any financial or legal implications arise out at a later date, the vendor shall be responsible and shall bear the cost and deal the allied implications with sales tax authority.				

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5.4	Bidder shall indicate in the Technical Bid for the crane model offered , the present location of the specific crane (source of deployment) as on the date of bid-submission of the tender. BHEL reserves the right to check the healthiness of the crane and authenticity of the location of the crane during scrutiny of offer and if the same is not found in order then technical bid of the vendor shall stand rejected. The age of the crane should not be more than 15 years and relevant document in support of the same shall be furnished by bidder.
<b>6.0</b>	<b>CONTRACT PRICE</b>
6.1	Bidder shall submit separate rates for (i) Monthly rental of the crane inclusive of all lubricants (if required), grease (if required), spare parts, consumables etc, operator, helper, maintenance staff etc based on the working hours as above (ii) Mobilization and de-mobilization charges together for the crane to & from site (iii) Supervision Charges for Installation, Commissioning & Load Test lumpsum at site, (iv) Supervision charges for dismantling . Above rates are to be quoted separately in the enclosed price schedule format of this tender.
6.2	In case the bidder quotes multiple models of crane against a particular requirement, the lowest rate among the technically accepted models shall be considered for comparison and awarding.
6.3	BHEL reserves the right to resort to reverse auctioning/ open price bid of the crane schedule to finalise ordering of the crane depending on projects' requirement. Decision of BHEL in this regard is final & binding on bidder.
<b>7.0</b>	<b>SPECIFIC TERMS</b>
7.1	For recording the hours of operation with power on condition, vendor is required to maintain a separate registrar at site, which shall be certified by site engineer. The quoted rates shall remain firm throughout the entire contract tenure including extension if any. In case of exigency of site requirements, BHEL reserve the right to further extend the contract beyond contractual and provisional extension (as indicated in clause no 4.0) at a rate mutually agreed between BHEL and the bidder.
7.2	The rates quoted shall be inclusive of all taxes and duties, excluding GST, which shall be paid, as applicable, separately against invoice. There is no provision for any advance payment by BHEL for mobilization/ de-mobilization etc.
7.3	The crane operation shall be executed under the usual conditions prevailing in major power plant construction and in conjunction with numerous other operations at site. The contractor and his personnel shall co-operate with all BHEL personnel, BHEL's customer, customer's consultants and all other contractors, coordinating the crane movements with others and work in a manner that shall not delay or hinder the progress of work of the project.
7.4	The contractor shall execute the work in most substantial and workmanlike manner. The materials and equipment of BHEL by the crane shall be handled with care and diligence, while same are handled by the crane.
7.5	<b>Mobilization charges for crane shall be paid only after satisfactory commissioning and load test (by TPI) of the crane at site, and certification from BHEL site to this effect.</b>
7.6	Demobilization charges shall be paid only on receipt of written confirmation from BHEL site that the crane has been dismantled and transferred from site by the vendor.
7.7	For Unloading / Loading/ Shifting / Installation & Commissioning / Dismantling of Tower & Jib of the crane at site the requisite crane, hydra, manpower , normal hand tools shall be provided by BHEL or BHEL's erection contractor free of cost including slings, operator, fuel , etc. However, entire job will be done under the supervision of bidder BHEL reserves the right to shift the crane from one location to another location within the site. Before shifting of the crane from one location to another location within the site, BHEL North Karanpura site shall give 30 days advance notice to the bidder and bidder shall not take more than 30 days for shifting the crane provided BHEL site arranges the requisite cranes for shifting as per requirement. Civil Foundation for the crane in new location shall be provided by

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	BHEL free of cost as per drawing furnished by bidder. <b>Foundation Bolts are to be supplied by vendor for initial/subsequent installation(s). No charges shall be paid by BHEL separately for supply of foundation bolts.</b>
7.8	Towards fulfillment of the relevant safety norms, the bidder is required to submit valid test certificate for the crane to be deployed at site. On deployment, <b>initial &amp; subsequent load tests</b> are to be conducted at site for which necessary load materials will be provided by BHEL free of cost. Local transportation of load materials shall be in the bidder's scope. <b>Bidder has to arrange Third Party inspection agency at site at his own cost for initial and subsequent load tests.</b>
7.9	Operation, Maintenance, spares and all Consumables required for regular daily running of the Crane as per the working hours mentioned are to be provided by the Bidder. The agency should provide adequate no. Operators, Helpers and Maintenance personnel to ensure Trouble-free uninterrupted Operation, Services and Maintenance of the Crane at Site
7.10	Normally the Maintenance/Greasing activities in the Crane shall be done by the bidder during Recess Period so that no working day is lost for fold outage of the Crane. However, any Breakdown/Repair of the Crane shall be immediately attended by bidder at his own cost. The bidder is to maintain stock of adequate Spares & Consumables with the required Tools & Tackles at Site for this purpose.
7.11	A log book giving full operation/ maintenance/ downtime if any details shall be maintained by the bidder at site and regularly endorsed by BHEL site engineer through his signature on daily basis or as per the site procedure.
7.12	In case of operator's absence the bidder shall arrange alternative immediately for continuation of site work so as not to hamper the time scheduled erection program.
7.13	<b>If the crane becomes idle due to failure attributable to its own mechanism, the idle hours for making the crane ready will be deducted from the monthly hire charges on pro-rata basis of the accepted monthly lump sum hiring rate divided by 26 days divided by 14 hours or shall be compensated by working the lost hours during normal working hours only, at the discretion of BHEL site engineer of North Karanpura site.</b>
7.14	Liquidated damage provision shall remain applicable for delay in crane deployment to site.
7.15	Holidays shall be as observed by BHEL at site and Sundays shall be considered as holidays. However, in exigency, the crane may be required to be operated on Sundays and such holidays.
7.16	Cumulative working hours per day for the crane shall be for 14 (fourteen) hours inclusive of one hour lunch break daily, excluding Sundays & scheduled holidays. For crane working beyond working hours, or on Sunday/ holidays with prior permission of concerned BHEL site engineer, the contractor shall be paid on pro-rata hire charge as stated below, based on certification of the BHEL site engineer. The hourly rate for extended hour working and working on Sundays and holidays is to be evaluated on the basis of 25% of scheduled monthly rate divided by 26 days of a month and further divided by 14 hours per day, payable with the monthly RA bill.
7.17	<b>Hourly rate for working beyond cumulative working hours and working on Sundays and holidays = 25 % of monthly hiring rate of price schedule divided by 26 and further divided by 14.</b>
7.18	In case there is a total failure of the crane, the bidder should replace the same and bring substitute crane within a deadline of 20 days from outage, which shall be treated as idle period and no hire charges payment shall be made for this period. In the case of bidder's failure to do so, BHEL shall make alternative arrangements at the risk & cost of the bidder.
7.19	Necessary insurance coverage for the crane including Third Party liability and for the workmen (covering Workmen's Compensation Act) engaged by the bidder are to be taken at his cost and copy of the same should be submitted to BHEL at site before work commencement. If any accident/ injury occurs to any other persons/

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	public due to proven negligence/ non-adherence to relevant safety and other precautions on the part of bidder/ its employees, the bidder shall remain liable to pay necessary compensation and other expense, as decided by appropriate authorities.
7.20	The bidder shall follow & comply with all Safety Rules of BHEL and their customer, relevant provisions of applicable laws pertaining to safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any conflict between statutory requirement and Safety Rules of the client referred above, the later shall be binding on the bidder unless the statutory provisions are more stringent.
7.21	Any loss or damage to BHEL or customer's property due to negligence of the crew employed by the bidder is attributable to the bidder. BHEL shall not be responsible for any accident/ injury to the bidder's crew/ staff during operation or otherwise. Bidder has to assume full responsibility of the safety of their crew/ staff and to comply with the security/ safety regulations of BHEL and others at site.
7.22	BHEL shall provide space free of cost to the bidder at site, where they are to maintain a shed/ container for working facility of their personnel and keeping/ storing of their required hand tools, spares, slings, consumables etc. as necessary. General watch & ward/ security services may be provided by BHEL.
7.23	Bidder has to make their own arrangement for accommodation, transport and other amenities like medical etc for their crew/ staff at site at their own cost.
7.24	All the statutory requirements as called for by the Labour Laws and other statutory authorities are to be met by bidder and proof of compliance should be made available to BHEL.
7.25	Bidder shall have to arrange entry gate passes for their crew/ staff at the construction plant site. Necessary support in regard to forwarding of documents shall be given by BHEL.
7.26	Electrical power/ illumination for your crane operation/ maintenance works at site shall be provided by BHEL at free of cost basis. However, the crane should have it's own lights for movement/ working in the working area at site.
7.27	The contractor shall comply with the plant security regulations in force at site in entry, exit, movement & working inside the plant premises. The bidder shall also ensure that all persons engaged by him for the work behave properly with BHEL and their client. In case of any reported misbehavior, bidder shall immediately withdraw such employee/ person from work.
7.28	Bidders may note that deployment of crane to any site against the present tender can not be co-related/ linked with any previous or ongoing disputes aroused under any other contract with BHEL/ BHEL's customer and any such linkage on the part of bidder shall be treated as breach of contract.
7.29	Bidder may please note during mobilisation of crane for movement of heavy consignments weighing more than 40MT & width more than 10.5 ft., advance road survey and logistic planning shall be done by bidder or bidder's transporter.
<b>8.0</b>	<b>TERMS OF PAYMENT</b>
8.1	The bidder shall submit the RA bill once in a month at the end of each month. 100 % payment shall be released from BHEL on submission of the invoice (ie against the RA bill) complete in all respect accompanied by BHEL engineer's certificate with required documents. Payment will be made after <b>60 days</b> of receipt of bill at BHEL site subject to completeness & correctness of the documents in all respect.
8.2	Invoice in triplicate based on monthly hire charge rates as per Price Schedule, including extended hour running charges, if any, as per log book entry of the crane as per separate record, to be maintained by the bidder (as stated in relevant clause), shall be submitted to certified by BHEL site engineer. <b>Paying Authority:</b> CONSTRUCTION MANAGER BHEL SITE OFFICE 3x660 MW NORTH KARANPURA STPP

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	<b>JHARKHAND</b>
8.3	Fifty (50) percent of the lump sum rate quoted/accepted for mobilization & de-mobilization charges will be payable against mobilization and balance fifty percent is payable against de-mobilization. Mobilization & de-mobilization charges, as applicable, with BHEL site engineer's certification.
8.4	Supervision Charges for Installation, Commissioning & Load Test lumpsum at site will be paid as a lot . Every lot consists of the following activities – Installation supervision, Commissioning of crane & load test ( including TPI ) at a point of installation. Payment will be made after completion of successful load test at a point of installation.
8.5	Supervision Charges for dismantling will be paid as a lot. Payment will be made after completion of successful dismantling at the point of installation.
8.5	BHEL may release payment through electronic mode, for which bidder shall comply with necessary requirement prior to payment as per prescribed format.
8.6	Applicable GST, which can be claimed at any point, shall be released to you upon compliance of following
8.7	You declaring such Invoice in GSTR-1
8.8	Receipt of Goods / services and Tax Invoice by BHEL
8.9	Confirmation of payment of GST thereon by you on GSTN Portal
8.10	Above is subject to receipt of goods/ service and tax invoice thereof along with vendor declaring invoice in their return and paying GST within timeline prescribed for availing ITC by BHEL.
<b>9.0</b>	<b>TAXES AND DUTIES</b>
9.1	All taxes excluding GST & BOCW Cess (as specified elsewhere in the tender) 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 . Bidder's quoted/ accepted rates/ price shall be inclusive of all such requirements.
9.2	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.
9.3	Successful bidder shall furnish proof of GST registration with GSTN Portal covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by successful bidder on BHEL for this project / work
9.4	Since GST on output will be paid by BHEL separately as enumerated above, bidder's your quoted rates / price should be after considering the Input Credit under GST law at bidder's end.
9.5	TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills (RA bills) unless exemption certificate from the appropriate authority / authorities is furnished.
9.6	TDS under GST shall be deducted at applicable rates on gross invoice value from the running bills (RA bills).
9.7	Bidder shall note that GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred thereunder) wherein the 'Bill To' details shall encompass following. BHEL GSTN – Refer attached GSTN code table of BHEL. Name - BHARAT HEAVY ELECTRICALS LIMITED Address - Shall be intimated later. Specific details of BHEL GSTN, Name and Address as stated above, have been specified elsewhere in the tender.
9.8	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. Portal address. and Email address –

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	Shall be intimated later. Specific details of above shall be intimated to successful bidder by BHEL at appropriate juncture.
9.9	In case of delay in submission of above mentioned documents on the date of despatch, BHEL may incur penalty / interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from successful bidder, in case such delay is not attributable to BHEL.
9.10	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.
9.11	Successful bidder shall comply with the Time Limit prescribed under the GST Law and rules thereof for raising of the Tax Invoice. If any supply of goods is applicable, successful bidder shall also ensure prompt delivery of goods after despatch.
9.12	Bidder shall note that in case GST credit is delayed / denied to BHEL due to delayed / non receipt of goods and / or Tax Invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reasons, not attributable to BHEL, GST amount shall be recoverable from successful bidder along with interest levied/ leviable on BHEL, as the case may be.
9.13	Successful bidder shall upload the invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the successful bidder along with interest levied / leviable on BHEL.
9.14	Way Bill: Successful bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract. Successful bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit / Way Bill, if required, shall be arranged by successful bidder and BHEL will not supply any Road Permit/ Way Bill for this purpose.
9.15	Any new taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period (including extension, if the same is not attributable to you), shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.
9.16	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
<b>10.0</b>	<b>LIQUIDATED DAMAGES</b>
10.1	Since time is the main essence of the contract, the deployment of crane is to be made within the time limit prescribed in relevant clause of the tender. In case bidder deploys the crane beyond the period specified in the contract, BHEL will have no obligation to accept the crane and reserves the right to levy liquidated damages at the rate of <b>0.5%</b> (half percent) of the awarded contract value delayed for each week of delay or part thereof without prejudice to any other relief or compensation due to BHEL under any other conditions of the order subject to a <b>maximum limit of 5%</b> (five) of total contract value. In case of delay in receipt of crane materials at the delivery point, for reasons not attributable to BHEL, the 'Liquidated Damages' clause shall be strictly enforced, unless extension of delivery date is granted through an amendment to the work order.
10.2	LD shall be applicable for initial contract value . Due to extended period of hiring if the contract value increases , LD shall not be applicable for the additional value of the contract.
10.3	Apart from above ,for delayed deployment period of crane, if BHEL has to arrange & deploy crane from any other source , the cost incurred for the same shall be recovered from the vendor with 30% overhead.
10.4	For the purpose of LD application, date of successful commissioning of tower crane

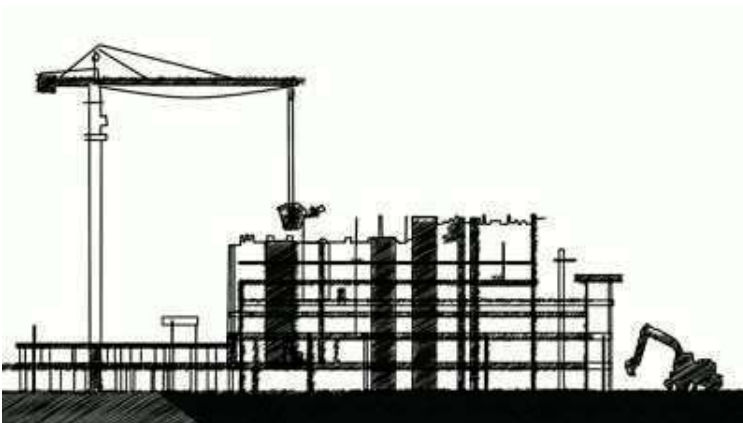


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	at site in all respect including load testing shall only be considered as date of deployment.
<b>11.0</b>	<b>INSPECTION OF CRANE AND RIGHTS OF BHEL</b> While all bidders are advised to furnish the correct specification of the Crane to be provided in the Technical Bid, BHEL reserves the right to inspect the crane before placement of LOI and to reject the same in case it is not found in order up to the stated specification. In such case of rejection, Bidder has to immediately source alternate Crane for inspection and BHEL shall have the right to forfeit the EMD in case bidder fails to offer the crane for inspection & bid offered by vendor shall be cancelled and not to be further considered.
<b>12.0</b>	<b>ARBITRATION &amp; JURISDICTION</b> As per GCC.
<b>13.0</b>	<b>REJECTION OF TENDER</b>
13.1	The acceptance of tender rests with BHEL which does not bind itself to accept the lowest tender or any tender and reserves full rights of rejection without assigning any reasons whatsoever.
13.2	If the bidder fully performs and completes the work in all respects to the entire satisfaction, Security deposit shall be released to the bidder after deducting all cost of expenses and other amounts that are to be paid to BHEL under this or other contracts entered into with on completion/ submission of release of payment against final bill by BHEL.
<b>14.0</b>	<b>FORCE MAJEURE CONDITIONS</b> As per GCC.
<b>15.0</b>	<b>VALIDITY OF OFFER</b> Validity of the offer shall be 180 days from the latest due date of submission of offer. Intending bidders are advised to visit the site to assess job content, site condition etc before quoting against the enquiry.
<b>16.0</b>	<b>STATUTORY REQUIREMENTS</b> The bidder shall ensure that all statutory requirements pertaining to contract execution, eg Inland Labour Laws etc are complied with at site.
<b>17.0</b>	<b>TECHNICAL BID &amp; OWNERSHIP OF CRANE</b>
17.1	The Bidder is to furnish all details regarding Correct Specification of Crane and Age Proof, Ownership Details and Insurance Coverage taken for the Crane, Experience of providing the Crane earlier to various companies of repute (by furnishing the order copies of those jobs etc) and all other relevant information regarding the Crane in the Technical Bid.
17.2	Bidders may also note that they should put utmost effort to provide the models of crane offered along with their Techno-Commercial Bid and accepted by BHEL. However, in case of exigency, if it is not possible by the bidder to deploy any of the already accepted model of crane, bidder may deploy any other model of crane only on receipt of approval from BHEL confirming technical suitability as per tender
<b>18.0</b>	<b>SECURITY DEPOSIT</b> Security Deposit shall be as per GCC. The EMD of successful tender shall be retained towards part of security deposit.
<b>19.0</b>	<b>PERFORMANCE BOND</b> Not applicable for this tender.
<b>20.0</b>	<b>EVALUATION OF OFFER</b> Evaluation of offer shall be done on the quoted rates/ prices against requirement as indicated in relevant clause of the tender as per price schedule. Order shall be placed based on lowest evaluated price.
<b>21.0</b>	<b>PRICE VARIATION, OVER RUN COMPENSATION &amp; RATE REVISION</b> Not applicable for this tender.
<b>22.0</b>	<b>IBRA/ MOBILISATION ADVANCE</b> Not applicable.
<b>23.0</b>	<b>INDEMNIFICATION TO BHEL</b>

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	The Bidder shall indemnify BHEL against all losses, claims etc. arising out of any of his acts or out of the acts of his agents in course of execution of this contract.
<b>24.0</b>	<b>ADDITIONAL SECURITY DEPOSIT</b>
	Bidders ,proposed to procure the crane on receipt of LOI, shall furnish additional security deposit in the form of BG (apart from above) for an amount equal to 5 % of order value within 15 days from the date of receipt of LOI which shall be returned within 30 days from the date of commissioning of the crane at site. BHEL reserves the right to encash the BG in case of failure of vendor to deploy the crane as per scheduled date.
<b>25.0</b>	<b>HEALTH SAFETY &amp; ENVIRONMENT</b>
25.1	Vendor has to follow HSE norms at project site during execution of entire contract period and the applicable HSE norms are noted in Tender Document for HSE norms having Document Title: Health, Safety and Environment Plan for Site Operation by Subcontractors.
<b>26.0</b>	<b>OTHERS</b>
26.1	All other term & conditions of this specification, not mentioned above shall be governed by the pertinent provisions of GCC.
26.2	Contractor shall deduct the necessary amount towards Provident Fund and contribute equal amount as per Government of India laws. This amount will be deposited regularly to the Provident Fund Commissioner. BHEL/ customer may insist for submission of the account code duly certified by PF Commissioner.



# **HEALTH, SAFETY and ENVIRONMENT PLAN**


**For**

**SITE OPERATIONS**

**By**

**SUB-CONTRACTORS**


**POWER SECTOR- EASTERN REGION**

 <b>PS-ER</b>	<b>HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SUB-CONTRACTORS (GENERAL)</b>	Doc. No.: HSEP:14-ER
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## DOCUMENT ISSUE SHEET

	<b>PREPARED BY</b>	<b>APPROVED BY</b>
<b>NAME</b>	Saswajeet Rout	
<b>DESIGNATION</b>		
<b>SIGNATURE</b>		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <b>Pradip Ghosh</b> </div> <div style="font-size: 0.8em;">             Digitally signed by Pradip Ghosh              DN: cn=Pradip Ghosh, o=BHEL,              ou=HSE-PSER,              email=pradipg@bhelpser.co.in,              c=IN              Date: 2019.06.15 13:02:14 +05'30'           </div> </div>
<b>ISSUED BY:</b>		
<b>ISSUED TO:</b>		
<b>COPY NO:</b>		
<b>DATE OF ISSUE:</b>		

**THIS PLAN SUPERSEDES THE STANDARD HSE PLAN**

 <b>PS-ER</b>	<b>HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SUB-CONTRACTORS (GENERAL)</b>	Doc. No.: HSEP:14-ER
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## HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS AT A GLANCE

BEFORE START	<b>SIGNING OF MOU</b>	
	Agree to comply to HSE requirement- Statutory and BHEL's	Agree to accept BHEL's decision on release of 1.5% (as specified in the contract) of Gross bill Amount or part thereof or otherwise (non-release), based on our HSE performance as evaluated by BHEL during the execution period
	<b>HSE ORGANISATION</b>	
PLAN	<b>Manpower</b> <ul style="list-style-type: none"> <li>1 (one) safety officer for every 300 workers or part thereof</li> <li>1(one) safety-supervisor for every 150 workers</li> <li>1(one) safety-steward/ supervisor for every 50 workers</li> </ul> As per Cl. 7.1	<b>HSE Roles and responsibilities</b> <ul style="list-style-type: none"> <li>All employees as per 7.2.1</li> <li>Site In-charge &amp; Package In-charges- As per clause 7.2.2</li> <li>Safety officer- As per clause 7.2.3</li> </ul>
	<b>HSE Planning</b> for Man, Machinery / Equipment/ Tools & Tackles	
PROVIDE	<b>HSE INFRASTRUCTURE</b>	
	<ul style="list-style-type: none"> <li>PPEs</li> <li>Drinking Water</li> <li>Washing Facilities</li> <li>Latrines and Urinals</li> <li>Provision of shelter for rest</li> <li>Medical facilities</li> </ul>	<ul style="list-style-type: none"> <li>Canteen facilities</li> <li>Labor Colony</li> <li>Emergency Vehicle</li> <li>Pest Control</li> <li>Scrapyard</li> <li>Illumination</li> <li>Crèches (if required)</li> </ul>
TRAIN	<b>HSE TRAINING , AWARENESS &amp; PROMOTION</b>	
	<b>Training</b> <ul style="list-style-type: none"> <li>Induction training</li> <li>Height work and other critical areas</li> <li>Tool Box talk &amp; Pep Talk</li> <li>Job Specific Training</li> </ul>	<b>Awareness &amp; Promotion</b> <ul style="list-style-type: none"> <li>Posters &amp; Signage</li> <li>Emergency Contact/Information Display</li> <li>Banner</li> <li>Competition &amp; Awards</li> </ul>
COMMUNICATE	<b>HSE COMMUNICATION</b>	
	<b>Incident Reporting</b> <ul style="list-style-type: none"> <li>Accident- Fatal, Major &amp; Minor</li> <li>Property damage</li> <li>Near Miss</li> </ul> <b>Safety Performance Reporting</b>	<b>Event Reporting</b> <ul style="list-style-type: none"> <li>Celebrations</li> <li>Training</li> <li>Medical camp</li> <li>Motivational Activities</li> </ul>



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EXECUTE SAFELY

## SAFETY DURING WORK EXECUTION

### PERMIT TO WORK

Height work (above 2 meters), Hot Work, Heavy Lifting, Confined Space, Radiography, Excavation (More than 1.22 meters), Lockout / Tag out

### OPERATIONAL CONTROL

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Welding, Gas Cutting Grinding</li> <li>Rigging, Signaling</li> <li>Cylinder- Storage &amp; Movement</li> <li>Demolition work</li> <li>T&amp;Ps</li> <li>Chemical Handling</li> <li>Electrical works</li> <li>Painting</li> </ul> | <ul style="list-style-type: none"> <li>Fire</li> <li>Scaffolding</li> <li>Height work</li> <li>Working Platform</li> <li>Excavation / Civil Work</li> <li>Ladder</li> <li>Lifting</li> <li>Hoisting appliance</li> <li>Hard Barricading</li> </ul> |
|---|--|

### HOUSE KEEPING

### WASTE MANGEMENT

### TRAFFIC MANAGEMENT

### ENVIRONMENTAL CONTROL

### EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

CHECKS

### HSE AUDITS & INSPECTION

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>Daily Checks</li> <li>Inspection of Height work</li> <li>Inspection of PPEs</li> <li>Inspection of T &amp; Ps</li> </ul> | <ul style="list-style-type: none"> <li>Inspection of Cranes &amp; Winches</li> <li>Inspection of Welding and Gas cutting</li> <li>Inspection of elevators etc.</li> </ul> |
|---|---|

### HSE PERFORMANCE EVALUATION PARAMETERS

NON CONFORMANCE

### PENALTY for NON CONFORMANCE

Refer Clause 16 Incremental  
penalty

For repeated violation by the same person, the penalty would be double of the previous penalty

For repeated fatal incident in the same contract / package, incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to the previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

### COMPENSATION TO ACCIDENT VICTIMS

Refer Clause 17

Employee Compensation Act, 1922

Other Acts and Guidelines relevant to employee compensation



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**ORGANIZATION OF THIS DOCUMENT**

- **GENERAL SECTION**
- **SECTION A:**  
MAIN REQUIREMENTS APPLICABLE IN FULL
- **SECTION B:**  
SPECIAL REQUIREMENTS
- **ANNEXES**



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	<b>RECORD OF REVISIONS</b>	

GENERAL

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## **1. PURPOSE**

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- 1.0** 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.
- 1.1** This document shall be followed by BHEL's Sub-Contractors at all installation and servicing sites. In case BHEL has contractual HSE obligations towards customer, this document will be followed in conjunction with (BHEL's) customer specific requirements, ensuring that applicable systems, controls and checks of both are implemented in letter and spirit.
- 1.2** In case the customer has any specific requirement, the same is to be fulfilled but may not include financial inclusion.
- 1.3** This document shall be followed unless otherwise mentioned in TCC (technical condition of contract) or elsewhere in NIT or contract documents. This supersedes all HSE clauses in GCC.
- 1.4** Although every effort has been made to make the procedures and guidelines in line with statutory requirements, in case of any discrepancy relevant statutory guidelines must be followed.

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## **2. SCOPE**

---

The document is applicable on all activities and assets including managerial, supervisory, professional, technical, clerical and other workers including contract laborers; and equipment operating under the control of BHEL's Subcontractors at all installation / servicing activities of BHEL Power Sector as per the relevant contractual obligations.

### **3. OBJECTIVES**

The HSE Plan reflects that BHEL places high priority upon the Occupational Health, Safety and Environment at workplaces. The Sub-contractor shall:

#### **Health & Safety**

- Prevent injury and ill health of all persons at site ('Persons' refers to all personnel including managerial, supervisory, professional, technical, clerical and other workers including contract laborers)

#### **Environment**

- Prevent pollution to environment and ensure protection of environment taking into account interested party concern and conservation of resources and reduction of wastage

#### **Legal Requirements**

- Comply at all times with the relevant statutory and contractual HSE requirements.

#### **Planning & Resources**

- Ensure that all work planning takes into account all persons that may be affected by the work.
- Ensure timely provision of resources to facilitate effective implementation of HSE requirements.

#### **Competency, Training & Awareness**

- Provide trained, experienced and competent personnel. Ensure medically fit personnel only are engaged at work.
- Provide all personnel with adequate information, instruction, training and supervision on the safety aspect of their work.

#### **Maintenance of Equipment**

- Ensure fitness testing of all T&Ps. Lifting appliances like cranes, chain pulley blocks etc. are certified by competent authority.

#### **Safety during Operations**

- Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.
- Effectively control, co-ordinate and monitor the activities of all personnel on the Project sites including subcontractors in respects of HSE.
- Establish effective communication on HSE matters with all relevant parties involved in the Project works.

#### **HSE Improvement**

- Capture the data of all incidents including near misses, process deviation etc. Investigate and analyze the same to find out the root cause
- Ensure timely implementation of correction, corrective action.
- Ensure continual improvement in HSE performance



POWER SECTOR

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### GOALS AND TARGETS

- ❖ To achieve “Zero Incident at Site” (LTI)
- ❖ 100% compliance of all legal/statutory requirements related to HSE.
- ❖ 100% Health, Safety and Environmental Induction training attendance for all workers.
- ❖ 100% High Risk activities to be carried out only after approved Method Statement, HIRA / Aspect-Impact / JSA / OCP and Permit to Work are implemented.
- ❖ 100% PPEs compliance in high and medium risk activities.
- ❖ 100% monitoring of all Work Areas
- ❖ 100% detection of non-conformities in work area and 100% closure within specified time
- ❖ 100% incident (near miss, minor, major, other) reporting, recording and reviewing for corrective actions.
- ❖ Regular Safety Reviews to assess HSE program compliance and 100% closure of any recognized gaps to continually improve safety management and incident prevention.

### 4. REFERENCES

1. ALL CONTRACTUAL HSE REQUIREMENTS INCLUDING THIS DOCUMENT
2. ALL APPLICABLE ACTS, RULES & REGULATIONS
3. BHEL POWER SECTOR HSE MANAGEMENT SYSTEM
  - I. HSE PROCEDURES (13.1.1)
  - II. WORK PERMITS (See Clause 13.1.2)
  - III. OPERATIONAL CONTROL PROCEDURES (See Clause 13.1.3)
  - IV. FORMATS (See Clause 21)
4. BHEL CORPORATE STANDARD PPE GUIDELINES
5. RELEVANT INDIAN STANDARDS FOR SAFETY (See Annexure 02)

(Note: Wherever, the date or revision number of a document is not mentioned, latest revision is implied)

## 5. **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, contractors 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.



**Atul Sobti**  
Chairman & Managing Director



## **6. TERMS AND DEFINITIONS**

### **6.0 INCIDENT**

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

### **6.1 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 incident".

### **6.2 MAN-HOURS WORKED**

The total number of employee hours worked by all employees including subcontractors working in the premises.

It includes managerial, supervisory, professional, technical, clerical and other workers including contract laborers.

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 for the period covered by the number of hours worked per day. The total number of workday 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.

### **6.3 FIRST AID CASES (FAC)**

First aid cases include:

1. Visit to a physician or a licensed health care professional solely for observation or counselling
2. Conduct of diagnostic procedures like X rays, blood test including the prescription medications used solely for diagnostic purposes (e.g. eye drops to dilate eyes)
3. Using a non-prescription medicine at non-prescription strength (for medication available in both prescription and non-prescription form as recommendation by a physician or other licensed health care professional to use a non-prescription medication at prescription strength is considered medical treatment for record keeping purposes);
4. Administering tetanus immunizations (other immunizations, such as Hepatitis B vaccine or rabies vaccine, are considered medical treatment);
5. Cleaning, flushing or soaking wounds on the surface of the skin;
6. Using wound coverings such as bandages, Band-Aids TM, gauze pads, etc.; or using butterfly bandages or Steri-Strips TM (other wound closing devices such as sutures, staples, etc., are considered medical treatment);
7. Using hot or cold therapy;
8. Using any non-rigid means of support, such as elastic bandages, wraps, non-rigid back belts, etc. (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for record-keeping purposes);

9. Using temporary immobilization devices while transporting an accident victim (e.g., splints, slings, neck collars, back boards, etc.).
  10. Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;
  11. Using eye patches;
  12. Removing foreign bodies from the eye using only irrigation or a cotton swab;
  13. Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;
  14. Using finger guards;
  15. Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or
  16. Drinking fluids for relief of heat stress.
- No other treatments are considered first aid.

#### **6.4 MEDICAL TREATMENT CASES (MTC)**

An incident involved with an injury or illness that needs medical attention beyond First-aid as per 6.3 above.

#### **6.5 Dangerous Occurrence** is defined as:

- (1) Collapse or failure of lifting appliances or hoist or conveyors or other similar equipment/machine;
- (2) Collapse or failure of a crane, derrick, winch, hoist or other appliance used in raising or lowering persons or goods or any part thereof, or the overturning of a crane;
- (3) Explosion or fire causing damage to the structure of any room or place in which persons are employed, or to any machine or plant, resulting in the complete suspension of ordinary work;
- (4) Electrical short circuit or failure of electrical machinery, plant or apparatus, attended by explosion or fire, causing structural damage involving its stoppage or disuse;
- (5) Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas;
- (6) Collapse in whole or part from any cause whatsoever of any roof, wall, floor, Structure or foundation forming part of the construction site in which persons are employed;
- (7) Total or partial collapse of any overburden, face, tip or embankment on the Construction site;
- (8) The overturning of, or collision with any object by any bulldozer, dumper, excavator, grader, lorry or shovel loader, or any mobile machine used for the handling of any substance on the construction site.

6.6 **Fire:** Except Dangerous occurrence, any incident involving fire.

6.7 **Property Damage:** Except Dangerous Occurrences and Fire, any incident of property (materials, building, equipment etc) getting damaged.

#### **6.8 TYPE OF INCIDENT / ACCIDENT & THEIR REPORTING:**

The categories of Incident / accident are as follows:

**Non-Reportable Cases or NON-LTI: (Including First-aid cases as per 6.3 and MTC as per 6.4 )**

**Minor:** In this case the injured person resumes duty within 48 hours of incident.



**Reportable Cases (LTI or Loss Time Injury Cases):**

**Major:** In this case the injured person is disable for 48 hours or more and is not able to perform his duty. (as per IS 3786). It includes fatality.

All incidents must be reported orally immediately and in writing within 24 hours of time of incident. However, in case of fatality, it shall be reported to the statutory authority within prescribed timeline through proper channel. Internal reporting shall be done within 6 hours of time of the incident

**6.9 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:

$$\frac{\text{Number of Reportable LTI}}{\text{Total Man Hours Worked}} \times 1,000,000$$

**6.10 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:

$$\frac{\text{Days lost due to LTI}}{\text{Total Man Hours Worked}} \times 1,000,000$$

**6.11 FREQUENCY SEVERITY INDEX (FSI)**

$$\text{Frequency Severity Index, FSI} = \sqrt{\text{FR} \times \text{SR} / 1000}$$

**6.12 INCIDENCE RATE**

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

$$\frac{\text{Number of LTI} \times 1000}{\text{Average number of manpower deployed}}$$

**6.13 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.

#### **6.14 SAFETY WALK**

It's a walk (conducted periodically) by an official through a portion or whole of a site as an HSE officer, noting down HSE observations, speaking to concerned workmen and supervisor on observation, recording and reporting to in charges of agencies, getting the same rectified with personal follow up - to send out a strong message on Management's commitment to safety.

#### **6.15 HEAVY & COMPLEX LIFTING**

A heavy and complex lifting activity includes:

1. Lifting above 50 Tons
  2. Tandem Lifting using multiple cranes
  3. Total load exceeding 75% of capacity of crane
  4. Lift of unusual difficulty or geometry or rigging
  5. Lift over operating units
  6. Any other lift as decided by site HSE / Erection
- In any case, Job Safety Analysis to be carried out for any lift above 5 Tons.

#### **6.16 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.

#### **6.17 NIGHT WORK**

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

## Section-A

# *Main Requirements*

*(Applicable in Full)*



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### 7. HSE ORGANISATION

#### 7.1 DEPLOYMENT

##### 7.1.1 Minimum Number (Availability per contract / package per Working Shift)


7.1.1.1 HSE Officer	7.1.1.2 HSE Supervisor	7.1.1.3 HSE Steward / Observer
1 per 300 workers or part thereof as a minimum or as mandated by applicable legal requirements, whichever more stringent	1 per 150 workers or part thereof	1 per 50 workers or part thereof

7.1.1.4 The safety officers shall be engaged directly by the sub-contractor, whereas safety supervisors and safety stewards may be from the agencies engaged by the sub-contractor.

##### 7.1.1.5 Deployment Plan:

- 7.1.1.5.1 These shall be minimum one HSE officer along with HSE supervisor and HSE steward in the aforesaid ratio for every shift for each unit of Boiler/ESP/Power House & TG/ Chimney/ Whole of Cooling Tower.
- 7.1.1.5.2 For Civil works and other BOP items, deployment shall be broadly as specified in the above table. But BHEL shall finally approve the deployment based on nature and volume of jobs, Risks and hazards associated etc.
- 7.1.1.5.3 The deployment plan of Safety manpower at various locations shall be submitted to BHEL for approval by subcontractor

BHEL reserves the right to demand more safety personnel than what is stipulated here and change the deployment pattern

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## 7.1.2 QUALIFICATION & EXPERIENCE

**All Degrees/ Diplomas shall be recognized by State Council for Technical Education & Vocational Training (SCTE & VT) / All India Council for Technical Education (AICTE) / University**

7.1.2.1 HSE Officer	7.1.2.2 HSE Supervisor	7.1.2.3 HSE Steward / Observer
<p><b>A.</b></p> <p>i. Recognized degree in any branch of Engg. or Tech. or Architecture with practical experience of working in a building or other construction work in supervisory capacity for a period of not less than two years, or</p> <p>Recognized diploma in any branch of Engg. or Tech with practical experience of working in a building or other construction work in supervisory capacity for a period of not less than five years.</p> <p>ii. Recognized degree or diploma in Industrial safety</p> <p>iii. (Preferably) have adequate knowledge of the language spoken by majority of the workers at the construction site.</p> <p align="center"><b>Alternatively:</b></p> <p><b>B.</b></p> <p>Graduation Degree in Science with Physics &amp; Chemistry and degree or diploma in Industrial Safety (from any Indian institutes recognized by AICTE or State Council of Tech. Education of any Indian State) with practical experience of working in a building, plant or other construction works (as Safety Officer, in line with Indian Factories Act, 1958) for a period of not less than five years.</p>	<p>As a minimum, (s)he shall possess:</p> <p>A recognized graduation Degree in Science (with Physics &amp; Chemistry) or a recognized diploma in Engg. or Tech. with:</p> <p>a. Minimum Two years of practical experience in construction work environment and</p> <p>b. Should possess requisite skills to deal with construction safety &amp; fire related day-to-day issues.</p>	<p>As a minimum, (s)he shall possess:</p> <p>1. Class XII pass certificate and</p> <p>2. Trained in fire-fighting as well as in safety / occupational health related subjects, with:</p> <p>a. Minimum two year of practical experience in construction work environment and</p> <p>b. Should have adequate knowledge of the local language spoken by majority of the workers at the construction site.</p>

## 7.1.3 HSE IN-CHARGE

In case there are more than one HSE Officers with any subcontractor, one of them, who is senior most by experience (in HSE discipline), may be designated as HSE In-Charge. Duties & responsibilities of such person shall be commensurate with that of relevant statute and primarily to coordinate with top management of Client and subcontractors.



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### 7.1.4 AVAILABILITY AND PENALTY FOR NON-DEPLOYMENT:

Subcontractor shall ensure physical availability of safety personnel at the place of specific work location including where Height Work Permit is required/granted. No work shall be started in any area until above safety personnel & concerned Site Engineer of subcontractor are physically deployed at site.

The Subcontractor shall prepare an organization chart identifying the areas of operations, responsibilities and reporting structure of all safety personnel and submit the same to BHEL.

The subcontractor shall deploy sufficient safety officers, supervisors and safety-stewards, 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	–	<b>Rs 50000 per man-month</b>
Non-deployment of HSE Supervisor	–	<b>Rs 30000 per man-month</b>
Non-deployment of HSE Steward	–	<b>Rs 20000 per man-month</b>

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.

### 7.1.5 QUALIFICATION OF CRANE & WINCH OPERATORS, DRIVERS etc.:

The Crane and Winch Operators, Drivers, Riggers and other professionals deployed shall be qualified and experienced, and have valid license for the class of vehicle / machinery as applicable. The subcontractor shall certify competence of these persons in writing as and when they join.

Crane/Winch operator should have certificate on subject course or owner experience certificate in letterhead.

7.1.6 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 clarifications, the same shall be followed.

7.1.7 **BILLING:** Deployment of Safety manpower as per this clause **shall be** a billable item.

7.1.8 The Subcontractor shall verify & authenticate credentials of the HSE personnel detailed in this Section and furnish Bio-Data/Resume / Curriculum Vitae of the safety personnel as above for BHEL / Owner's approval, at least 1 month before the mobilization. The Subcontractor, whenever required, shall arrange submission of original testimonials / certificates of their Safety personnel, to BHEL / Owner (for verification/scrutiny, etc.)

7.1.9 Prior approval of CVs by BHEL for Safety Officer and Safety Supervisor is mandatory, however BHEL has right to check suitability of Safety Stewards as well.



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### 7.2 HSE RESPONSIBILITIES

The subcontractors shall communicate the HSE responsibilities as indicated in this section to relevant employees in written Form and ensure awareness of the same

#### 7.2.1 ALL EMPLOYEES

1. 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
  - b) Work Permit System
  - c) Emergency Preparedness Response Plans
  - d) Contractual HSE requirements
  - e) Legal Requirements
  - f) Penalty System
  - g) Training requirements
2. To ensure that the persons engaged in respective area follow the safety rules like using appropriate PPEs.
3. To keep track of repetitive minor or major incident observation/ report and submit to BHEL.
4. To prepare HIRA / JSA as required and submit to BHEL for verification.
5. To record all incidents including near miss and report to BHEL.
6. To adopt safe working practices at all times and act as role model for Safety
7. 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.
8. 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.
9. To interfere/ stop work as & when identified unsafe.
10. To maintain & promote improved level of house-keeping all the time at site.
11. To support/co-operate with audit team members as & when safety audits are carried out.
12. To involve in investigation, if any incident occurs in his work area.
13. To participate in safety promotional programmes.
14. To attend the safety committee meeting, if member/ invitee
15. To ensure that only fit T&Ps and qualified persons are engaged for all activities.
16. Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
17. Shall ensure that materials are not thrown from height. Cautions to be exercised to





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prevent fall of material from height.

18. Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent authorities.

## 7.2.2 SITE IN –CHARGE & PACKAGE IN-CHARGES OF SUBCONTRACTOR

1. All requirements as per 7.2.1
2. **Shall ensure fulfillment of HSE requirements of BHEL contract as given in this document.**
3. Shall engage qualified safety manpower as per this document at all times.
4. Shall adhere to the rules and regulations mentioned in this document, practice very strictly in his area of work in consultation with his concerned engineer and the safety coordinator.
5. Shall screen all workmen for health and competence requirement before engaging for the job and periodically thereafter as required.
6. Shall ensure that all the workers are engaged after undergoing induction training.
7. Shall arrange for all necessary PPEs like safety helmets, belts, full body harness, shoes, face shield, hand gloves etc. before starting the job. Shall ensure that no working men /women carry excessive weight more than stipulated in Factory Rule Regulation R57.
8. Shall ensure that provisions stipulated in contract Labor Regulation Act 1970, Chapter V C.9, canteen, rest rooms/washing facilities to contracted employees at site.
9. Shall report all incidents (Fatal/Major/Minor/Near Miss) to the Site engineer /HSE officer of BHEL.
10. Shall conduct Safety Walks and safety inspections, and act as a role model for Safety.
11. Shall ensure that Horseplay is strictly forbidden.
12. Shall ensure that adequate illumination is arranged during night work.
13. Shall ensure that all personnel working under subcontractor are working safely and do not create any Hazard to self and to others.
14. Shall ensure display of adequate signage/posters on HSE.
15. Shall ensure that mobile phone is not used by workers while working.
16. Shall ensure conductance of HSE audit, mock drill, medical camps, induction training and training on HSE at site.
17. Shall ensure full co-operation during Client/External /Customer HSE audits.
18. Shall ensure submission of look-ahead plan for procurement of HSE equipment's and PPEs as per work schedule.
19. Shall ensure adequate valid fire extinguishers are provided at the work site.
20. Shall ensure availability of sufficient number of toilets /restrooms and adequate drinking water at work site and labor colony.
21. Shall ensure adequate emergency preparedness
22. Site In-charge also involve in the induction training so as to share knowledge of some incident and guide the worker to perform work safely.
23. Shall ensure power source for hand lamps shall be maximum of 24 v.
24. Shall ensure temporary fencing should be done for open edges if Hand – railings and Toe-





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guards are not available.

25. Shall be responsible for the periodic testing of T&Ps (winches / crane /hydra/tools/equipment so on.) and Pressure Vessels as per applicable codes and submit report to BHEL

26. Shall be member of site HSE committee and attend all meetings of the committee

### **7.2.3 HSE OFFICER OF SUBCONTRACTOR**

1. All requirements as per 7.2.1
2. Carry out safety inspection of Work Area, Work Method, Men, Machine & Material, P&M and other tools and tackles.
3. Facilitate HIRA and Aspect/Impact Study in the area and ensure control measures.
4. Highlight the requirements of safety through Tool-box / other meetings.
5. Help concerned HOS to prepare Job Specific instructions for critical jobs.
6. Maintain record and conduct investigation of all incident/dangerous occurrences & recommend appropriate safety measures.
7. Advice & co-ordinate for implementation of HSE permit systems, OCPs & MPs.
8. Convene HSE meeting & minute the proceeding for circulation & follow-up action.
9. Plan procurement of PPE & Safety devices and inspect their healthiness.
10. Report to BHEL on all matters pertaining to status of safety and promotional programmes at site level.
11. Encourage raising Near Miss Report on safety along with, improvement initiatives on safety.
12. Facilitate administration of First Aid
13. Facilitate screening of workmen and safety induction.
14. Conduct fire Drill and facilitate emergency preparedness
15. Design campaigns, competitions & other special programs to promote safety in the workplace.
16. Notify non-conformance to safety norms observed during site visits / site inspections.
17. 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.
18. To decline acceptance of such PPE / safety equipment that do not conform to specified requirements.

### **7.2.4 HSE SUPERVISOR OF SUBCONTRACTOR**

1. All requirements as per 7.2.1
2. To assist Safety officer

### **7.2.5 HSE STEWARD / OBSERVER OF SUBCONTRACTOR**

1. All requirements as per 7.2.1
2. To monitor allotted area for Safety violations, take required action and inform the concerned Safety Supervisor / Officer



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3. To assist Safety Officer and Safety Supervisor

### 7.2.6 HSE DOCUMENTS, SYSTEMS & PROCEDURES:

BHEL shall provide the subcontractor soft copies of all applicable HSE Procedures, Work Permits, Operational Control Procedures, Formats and any other instructions required for the implementation of HSE Management System before commencing operations at site. Subcontractor shall ensure the availability of the same.

### 7.2.7 IMPORTANT SITE EHS RULES RESULTING IN POSSIBLE EXPULSION FROM SITE

- ❖ Pre-employment Medical fitness is compulsory for all workers.
- ❖ EHS induction is mandatory for all new workers, supervisor and engineers, subcontractor managers etc.
- ❖ No visitors are allowed for site visit without safety induction.
- ❖ **Mandatory PPEs are**
  - ✓ Safety helmet,
  - ✓ Hard toe safety shoes,
  - ✓ Safety glasses
  - ✓ Reflective vest
  - ✓ Full/half sleeve (at least 4-inch-long) shirt
  - ✓ Full length pant/trousers for male and preferably Salwar Kameez for female
- ❖ **Zero Tolerance Safety Rules**
  - Violation of Fall protection / not anchoring & wearing safety harness above 6 feet,
  - Work without PTW
  - Child labor at site
- ❖ Restricted Use of cell phone in the working zone, operating vehicle/crane and at height. Encourage the people not to bring mobile phones inside the project premises.
- ❖ All vehicle being used at site to be in good condition in all respect.
- ❖ All electrical installations should have individual 30 mA ELCBs
- ❖ **Fighting:** Fighting anywhere on the Project site, including in parking areas, is strictly forbidden; violators will be barred from site and possibly subjected to legal action by local authorities.
- ❖ **Horseplay:** Running, pushing, practical jokes, and other horseplay are forbidden on the project site, including in parking areas.
- ❖ **Gambling:** Gambling on the Project site is not permitted
- ❖ **Alcohol & Drugs:** Intoxication or possession of alcohol or illegal drugs is strictly forbidden.
- ❖ **Weapons:** Possession of weapons on the Project site is strictly prohibited
- ❖ **Asbestos Material:** No asbestos material is allowed to use in Project Site
- ❖ **Hair:** Anyone working on site property with scalp hair longer than the top of his/her shoulders must tie-up and restrains the hair within the hard hat or coveralls, shirt or jacket collar.
- ❖ **Jewelry:** Loose necklaces, dangling earrings and bracelets shall not be worn when working on the Project site.



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- ❖ **Contact Lens:** While the site does not prohibit the wearing of contact lens, BHEL Project does not recommend their use.
- ❖ **Use of Empty Drums:** Use of empty drums to climb up and work is banned. Proper stool/ ladder/ stage required to be used if intended to work at height.
- ❖ Projects must comply in full with all applicable EHS local and national legislation. In circumstances where there is a conflict between local or national legislation and client requirements, the higher (more protective) requirement must prevail.
- ❖ All persons working on suspended scaffolds/cradles/gondolas must wear and use appropriate fall prevention equipment so as to protect them effectively at all times when they are at risk from any failure of any part of the scaffold/cradle/gondola, including its suspension system
- ❖ **Construction Trucks/Vehicles**
  - ✓ Vehicles must be equipped with proper seat belts for driver and passengers. All persons riding in vehicles must be advised of the requirement that seat belts are to be used whenever the vehicles are being operated.
  - ✓ The subcontractor is responsible for assuring the overall safe condition of vehicles assigned to its projects.
  - ✓ The speed limit on the project site is a maximum of 20 Km/hr.
  - ✓ Any person found operating or driving in a reckless or careless manner without regard for the safety of other employees or the general public will be immediately removed for the equipment they were operating and permanently prohibited from operating or driving any equipment on the project.
  - ✓ Any mobile equipment found to be unsafe or defective must be immediately removed from service and sent for repair or replacement. The subcontractor must ensure that the proper repairs have been made prior to putting the equipment back into service.
- ❖ **Construction Material Handling Heavy Equipment**
  - ✓ No equipment may be modified without equipment manufacturer's authorization.
  - ✓ Rollover Protective Structures must be provided for all equipment as required.
  - ✓ Seat belts must be provided and used by operators of all equipment that has a Rollover Protective Structure.
  - ✓ All bi-directional equipment must be equipped with an operable horn that must be used as needed when the machinery is moving in either direction.
  - ✓ All bi-directional equipment must also have an operable alarm in addition to the horn.
  - ✓ All equipment must be provided with a multi-purpose (class A, B, and C) fire extinguisher mounted in an easily accessible location.
  - ✓ Braking systems, controls, safety devices must be maintained in effective operating condition.
  - ✓ The operator must inspect the equipment at the beginning of the shift and test for acceptable



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- ✓ operation as per the equipment's manufacturer's instructions. Inspections must be documented and filed.
- ✓ Only qualified personnel must be allowed to operate equipment. Qualification must be documented and filed.

In case any worker violates any of the EHS rules identified by BHEL as above, following punitive action shall be taken:

First Offence	Second Offence	Third Offence	Fourth Offence
Oral warning	Gate Pass Punched	Gate pass punched (second)	Gate Pass Punched(third) and person sent out of the gate  Photo of concerned worker to be displayed on Notice boards and prominent locations.

BHEL has the right to send out such person even earlier than fourth offence after considering the severity of the offence and/or the persons track record related to following general/EHS rules.

BHEL reserves right to expel even concerned supervisor or engineer as well in case of repeat of such cases of indiscipline.

**Note:**

The appellate authority in this case shall be the BHEL Site In-charge whose decision shall be final on the matter and binding on all parties.

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## **8. PLANNING FOR HSE**

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### **A. Identifying Hazards / Risks & Aspects / Impacts and implementing control measures**

1. Subcontractor shall identify all OHS Hazards and Risks applicable to all activities in scope as per *HSEP01: HSE Procedure for OHS Hazards and Risks*, and plan & implement the required control measures.
2. Subcontractor shall identify all Environmental Aspects and Impacts applicable to all activities in scope as per *HSEP02: HSE Procedure for Environmental Aspects and Impacts*, and plan & implement the control measures.

### **B. Register of Regulations:**

Subcontractor shall prepare a register of applicable rules and regulations in the scope as per



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*HSEP03: HSE Procedure for Register of Regulations and plan to ensure compliance.*

The detailed plans and registers in A and B to be submitted to BHEL for review and approval within 60 days of start of work at site.

**Note:** The plans above are dynamic and shall be periodically reviewed as per BHEL requirement.

### 8.1 MOBILISATION OF MACHINERY / EQUIPMENT / TOOLS

1. Subcontractor shall furnish to BHEL, the Test Certificates issued by the jurisdictional competent persons of machinery, equipment and other T&Ps to be deployed at site, before deployment. BHEL reserves the right to disallow the same if found non-conforming to HSE / legal requirements
2. 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 shall be arranged by in-house expert / competent authority (preferable) for acceptance. **(Report Format: HSEP:14-F15)**
3. **The equipment considered for this purpose shall include all those in the T&P list in the tender document. Conventional Hydra crane with carriage in front shall not be permitted. Other models like FX or TRX series of Escorts or equivalent shall be permitted.**
4. In the course of work, the subcontractor shall notify the BHEL 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.
5. 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.
6. 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.
7. Following items should be only ISO certified and not more than 2 yr. of purchase
  - i. Chain pulley block
  - ii. Wire rope slings
  - iii. Grinding machine and wheel and buffing wheel
  - iv. Gas cutting equipment
8. Following equipment should not be more than 5 Yr. old
  1. Welding machine
  2. Vibrator Machine
  3. Concrete cutter
  4. DB/Electrical panel
9. **Office Infrastructure** - subcontractor shall arrange a computer / Laptop with Network



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connection, chair and table for HSE Staff to facilitate HSE reporting and recordkeeping.

### 8.2 MOBILISATION OF MANPOWER

1. 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-contractor to ensure fulfillment of contractual as well as legislative requirement by:
  - i. Ensuring the required qualification/ training/ certification/ license and experience for the job as per Section 7 of this document & applicable legal requirements
  - ii. **Medical Checkup:** Examination of medical fitness shall be conducted through qualified medical professional for all workers to be deployed. (Record: Format No. HSEP14:F02). For height workers, height phobia test to be carried out as qualification criteria.
  - iii. **Induction Training:** Induction training of all workers to be ensured as per clause 9.1 and HSEP04: *HSE Procedure for Training & Awareness* (Record: Format No. HSEP14:F03)

Only on successfully meeting above criteria, permanent gate passes to be issued.

2. The subcontractor shall strictly adhere to the maximum daily working hours and other requirements as per applicable laws and shall not engage any employee below 18 years of age.
3. 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.
4. 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.
5. System for Issue of Gate Passes to authorized personnel only shall be ensured at site
6. The subcontractor shall keep accurate and updated records of all manpower preferably in soft form
7. The subcontractor shall ensure appropriate infrastructure for workers as per Clause 8.4.

### 8.3 PROVISION OF PPEs

1. Adequate numbers of Personnel Protective Equipment (PPEs), will be made available at site & their effectiveness and regular use by all will be ensured
2. The PPEs shall conform to the relevant standards as listed in Annexure 02, and bear ISI mark.
3. The following matrix recommends usage of minimum PPEs against the respective job. For details, the respective OCPs to be referred.





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Sl. No	Type of work	Suggested PPEs
1	Work at height	Double lanyard full body harness with rope grab (as applicable), retractable Fall arrestor (specific cases), Safety nets (single / double)
2	Concrete and asphalt mixing	Nose mask, hand glove, apron, gum boot, goggles
3	Welders/ Grinders/ Gas cutters	Welding/face screen, apron, hand gloves, nose mask and ear muffs if noise level exceeds 90dB. Helmet fitted with welding shield is preferred for welders, safety goggles
4	Stone/ concrete breakers	Ear muffs, safety goggles, hand gloves
5	Electrical Work	Rubber hand glove, Electrical Resistance shoes, Arc-flash resistant suit.
6	Insulation Work	Respiratory mask, Hand gloves, safety goggles
7	Grit/Sand blasting	Blast suit, blast helmet, respirator, leather gloves, safety goggles
8	Painting	Plastic gloves, Respirators (particularly for Spray painting)
9	Radiography	As per BARC guidelines
10	General	Helmets, Safety Shoes Reflective vests, ear plugs, nose masks, safety goggles

4. The exact PPEs required for a particular task shall be chosen to ensure there are multiple lines of defense against accident or injury. All applicable safety precautions for a job shall be ensured notwithstanding the duration or perceived importance of the task.
5. Additionally, the BHEL safety officer may demand additional PPEs based on specific requirement
6. The applicability of PPEs shall be as per the concept of Hierarchy of controls, i.e.:  
Elimination->Substitution->Engineering Controls->Administrative Controls-PPEs
7. Relying solely on PPEs without other applicable controls to be strictly avoided.
8. The issuing agency shall maintain register for issue and receipt of PPEs (Format No. HSEP: 14-F06A). All the PPEs shall be checked for quality before issue and the 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.
9. The body harnesses shall be serial numbered.
10. All worker should wear reflecting Jacket during both shift Day/Night.
11. 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
12. Besides the PPEs mentioned above, the persons shall use helmet, safety shoe and reflective vest at all times. The visitors shall use Helmet and any other PPEs as



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deemed appropriate for the area of work.

13. Following color scheme for Helmets to be maintained:

- Workmen: Yellow
- Safety staff: Green or white with green band
- Electrician: Red
- Others including visitors: White

14. The Helmets shall have logo or name (abbreviation of agency name permitted) affixed or printed on the front along with the person's gate pass no. & blood group. An awarded worker shall have reflective logo

### 8.4 ARRANGEMENT OF INFRASTRUCTURE

The subcontractor is responsible for ensuring and maintaining the required HSE infrastructure at site as described in this Section

#### 8.4.1 DRINKING WATER

- Drinking Water Storage Tanks shall be provided and maintained at suitable places at different elevations / locations to ensure easy accessibility. The tank/container shall be kept on a platform at an elevation of at least 2 feet and should be covered:



- Construction and Quantity:** The design of Drinking Water Storage Tank (DWST) shall be submitted to BHEL for approval prior to initiating construction. Provision of 5 liter water daily for each worker to be maintained.
- Labelling:** DWST should be labeled as "Drinking Water". Date of last cleaning, next due date shall be indicated on the container besides Date of source testing as per IS 10500.
- Cleaning of the DWST 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.
- Suitability of the water source should be tested as per IS10500.
- For all tanks containing water unsuitable for drinking, prominent "Do Not Drink" signage shall be pasted in English, Hindi and local language.
- In Hot Work and other critical areas, drinking water shall be made available near the activity
- Provision of supplying drinking water to height workers and those working in difficult to reach





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areas shall be made available through dedicated personnel.

- 8.4.2 **PROVISION OF LATRINES AND URINALS AT SITE** (Ref: Interstate Migrant Workmen (Regulation & Employment and Act, 1979) read with The Inter-State Migrant Workmen (Regulation of employment and conditions of service) central rules, 1980 (PI refer rule no. 42)

### LATRINES

1. Latrines shall be provided in every establishment on the following scale, namely: -
  - a. Where females are employed, there shall be at least one latrine for every 25 females;
  - b. Where males are employed, there shall be at least one latrine for every 25 males:

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
2. Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.
3. 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.
4. The notice shall also bear the figure of a man or of a woman, as the case may be.

### URINALS

5. There shall be at least one urinal for male workers up to fifty and one for female up to fifty employed at a time:
6. 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.
7. The urinals shall be designed and located so as to ensure privacy.
8. In case a structure encompasses multiple floors, urinals shall be provided suitably for quick access
9. The latrines and urinals shall be conveniently situated and accessible to workers at all times at the establishment.
10. The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
11. Latrines and urinals other than those connected with a flush sewage system shall comply with the requirements of the public health authorities.
12. Water shall be provided by the means of tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.

### **8.4.3 WASHING FACILITIES**

1. In every workplace, adequate and suitable facilities for washing shall be provided and maintained.
2. 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



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condition and dully illuminated for night use.

3. 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.

### 8.4.4 PROVISION OF REST SHELTER FOR WOKERS

Proper Sheds & Shelters big enough to accommodate all possible workers shall be provided for workers to rest during break. Taking rest at height, in activity area and other hazardous locations shall not be allowed.

The drawing of such sheds shall be submitted to BHEL for approval before construction.

### 8.4.5 MEDICAL FACILITIES

#### Refer Section B for applicability of requirements pertaining to Clause 8.4.5.1

#### 8.4.5.1 MEDICAL CUM FIRST-AID CENTER

- a) A medical center shall be setup at site with basic facilities for handling medical emergencies. The medical center shall be developed independently by BHEL/an agency as specified in the contract and run jointly by all agencies on proportionate sharing basis as stipulated in the contract.
- b) A qualified medical professional, not less than MBBS, shall be deployed at medical center as stipulated in the contract.(Part-time or full time as decided at the site).
- c) There shall be a full-time trained first aider and a nurse. Depending upon the working hours at the site, First-aider shall be deployed accordingly.
- d) The center shall have all articles as per Schedule IV of BOCW(Central) Rules'1998. In addition,, one Stokes basket stretcher shall be available.
- e) An ambulance shall be deployed for every 1000 persons along with trained driver and accessories as per schedule V of Central BOCW Rules'1998. Depending upon the working hours at the site, First-aider shall be deployed accordingly.
- f) The center shall be adequately equipped for Resuscitation, Immobilisation, Dressing, dealing with poisoning cases including snake and insect-bites and sufficient stock of emergency medicines as prescribed by the qualified medical professional as per point (b)

#### 8.4.5.2 IMPORTANT

- g) If there is no specific mention of responsibility of deployment or setting up of any of the above facilities and operating expenses thereof, BHEL site management shall have the liberty to give this responsibility to any of the contractors on cost sharing basis.
- h) Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste –Management and Handling Rules, 1998)
- i) Every injury shall be treated, recorded and reported.
- j) All First Aid injuries shall be recorded as per Format No. HSEP:14-F17
- k) List of qualified first aiders and their contact numbers to be displayed at conspicuous places.



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### 8.4.5.3 FIRST AID

#### A. In addition to 8.4.5.1 &2, The subcontractor with Boiler&ESP, TG, Civil shall:

1. Provide necessary first aid facilities for every work place.
2. Ensure availability of qualified First-aiders throughout the working hours.
3. Every injury shall be treated, recorded and reported.
4. Refresher course on first aid shall be conducted as necessary.
5. List of qualified first aiders and their contact numbers to be displayed at conspicuous places.
6. All First Aid injuries shall be recorded as per Format No. HSEP:14-F17

#### B. FIRST AID BOX

1. The first aid box shall be maintained by first aider who shall always be readily available during the working hours of the work place.
2. **Details of First Aid Box:**
  - a) Details of contents of first aid box is given in **Annexure 03**. A slip of contents shall be pasted on the First Aid Box with following details:

##### Name, Quantity, Expiry Date, Checked by...

- b) First Aider's name and contact no to be displayed on the box.
  - c) The first aid box shall be distinctly marked with a Green Cross on white background.
  - d) The box shall be properly secured with lock & key to avoid misuse
7. The first aid boxes should be placed at various locations so as to make them available within easy reach of hazardous activities and at the quickest possible time.
8. The subcontractor shall ensure that the Supervisors and Engineers are adequately trained for attending to any emergency.
9. Monthly inspection of First Aid Box to be conducted by the subcontractor as per Format no. HSEP:14-F01

### 8.4.5.4 HEALTH CHECK UP

The persons engaged at the site shall undergo health checkup as per the **Format no. HSEP:14-F02** before induction. The persons engaged in the following works shall additionally undergo regular health checkup using same Format at least once in a year:

Height workers	Drivers/crane operators/riggers	Confined space workers
Shot/sand blaster	Welding and NDE personnel	Any person referred by BHEL

#### 8.4.5.4.1 HEIGHT PHOBIA TEST

1. The persons engaged in working at heights (above 2 meters) to be assessed for Height Phobia and associated conditions.
2. Such workers are to be allowed only on successful completion of this test, otherwise they shall be allocated ground based jobs. IDs / Height passes shall be issued to such workers.

### 8.4.6 PROVISION OF CANTEEN FACILITY



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**Minimum or better facilities to be ensured as per BOCW (Rule 244) / Factories Act, specially taking care of the following:**

1. Canteen facilities shall be provided for the workmen of the subcontractor inside the project site.
2. Proper cleaning and hygienic condition shall be maintained.
3. Proper care should be taken to prevent biological contamination.
4. Adequate drinking water should be available at canteen.
5. Fire extinguisher shall be provided inside canteen.
6. Regular health check-up and medication to the canteen workers shall be ensured.
7. Canteen waste to be disposed of in compliance with law
8. Domestic LPG cylinder shall not be used
9. Canteen should be periodically inspected using standard checklist finalized along with BHEL

**8.4.7 PROVISION OF ACCOMMODATION / LABOR COLONY**

1. The subcontractor shall provide to every workman (within fifteen days of the commencement of the employment of migrant workmen):
  - a) In case he is accompanied by any other member of his family, a suitable barrack so as to accommodate one room having at least a floor area of 10 square meters, a verandah and adequate additional covered space for cooking food as well as one common sanitary latrine, one common bathroom for every three such quarters; and
  - b) In case he is unaccompanied by any other member of his family, a suitable barrack so as to accommodate not more than ten such migrant workmen, having at least a floor area of not less than 6.5 square meters for each such migrant workman making use of the barrack, a verandah and adequate additional covered space for cooking food as well as one common sanitary latrine and one common bathroom for every ten such migrant workmen
2. Every quarter and the barrack shall be so constructed as to afford adequate ventilation, protection against heat, wind, rain and shall have smooth, hard and impervious floor surface.
3. The quarters or the barracks, as the case may be, shall be at a convenient distance from the establishment and shall have adequate supply of wholesome drinking water.
4. The area in which the quarters and/or barracks are located as well as the latrines and bathrooms provided therein shall be kept in a clean and sanitary condition at all times.
5. Regular housekeeping of the labor colony shall be ensured.
6. Availability of Bathing/ washing bay to be ensured



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7. Room ventilation and safe electrification to be ensured
8. MSDS of LPG shall be put up prominently and shall be included in the induction training also.
9. The labor colony shall be secure so that only authorized persons have access to it.
10. Availability of local market to be ensured by the Sub-contractor
11. A "Suggestion Register" shall be made available at the labor colony for workers. The feedback shall be reviewed on weekly basis and acted upon.
12. Labor colony shall be inspected fortnightly by Subcontractor Safety Officer & HR executive, and report submitted to BHEL as per Format No. HSEP:4-F16
13. **Facility of Crèches** – to be provided wherein more than fifty female workers are deployed
14. Provisions of Clause 8.4.1, 8.4.2 and 8.4.3 shall be applicable on labor colony as well

### 8.4.8 PROVISION OF EMERGENCY VEHICLE

Dedicated emergency vehicle shall be made available at workplace by subcontractor for evacuation of victim from site.

However, Ambulance shall be used exclusively for transporting victim to hospital

### 8.4.9 PEST CONTROL

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

### 8.4.10 SCRAPYARD

1. Scrapyard shall be developed by subcontractor to store metal scrap, wooden scrap, waste, hazardous waste.
2. Scrap/Waste shall be segregated as Bio-degradable and non-bio-degradable and stored separately.

### 8.4.11 ILLUMINATION

1. The subcontractor shall provide adequate lighting facilities e.g. flood lighting, hand lamps, area lights etc. to ensure adequate lighting at all work places & their approaches including passage ways as per IS: 3646 (Part-II) at all times. Indicative recommended values are given below:

S. No.	Location	Lux Level
A.	Construction Site	
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



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6	Medium work like assembly of small machined parts	<b>300</b>
7	Fine work like precision assembly, precision measurements etc.	<b>700</b>
8	Sheet metal works	<b>200</b>
9	Electrical and instrument labs	<b>450</b>
<b>B.</b>	<b>Office</b>	
1	Outdoor area like entrance and exit roads	<b>20</b>
2	Entrance halls	<b>150</b>
3	Corridors and lift cars	<b>70</b>
4	Lift landing	<b>150</b>
5	Stairs	<b>100</b>
6	Office rooms, conference rooms, library reading tables	<b>300</b>
7	Drawing table	<b>450</b>
8	Manual telephone exchange	<b>200</b>

In case any area is not mentioned above, the applicable illumination for the same shall be specified by BHEL based on applicable standards and international norms

1. Level of illumination shall be checked periodically using a calibrated lux meter and recorded for each work area on minimum weekly basis as per Format No. HSEP:14-F21
2. Lamp (hand held) shall not be powered by mains supply but either by 24V or dry cells.
3. Lamps shall be protected by suitable guards where necessary to prevent danger, in case of breakage of lamp.
4. Emergency lighting provision for night work shall be made to minimize danger in case of main supply failure.

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## **9. HSE TRAINING & AWARENESS**

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### **9.1 HSE INDUCTION TRAINING**

1. All persons entering into project site shall be given HSE induction training before being assigned to work, which shall be imparted through audio-visual medium and shall be of minimum 2-hour duration.
2. Any single trainee batch size should not exceed 40.
3. 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.)
  - i. They must arrive fully dressed in safety wear & gear to attend the induction.
  - ii. Any one failing to conform to this safety wear& gear requirement shall not qualify to attend.
4. In-house induction training subjects shall include but not limited to:





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- i. Briefing of the Project details and importance of employee for the project and for the nation.
  - ii. Safety related cardinal rules, objectives and targets.
  - iii. Site HSE rules.
  - iv. Site HSE hazards and aspects.
  - v. First aid facility.
  - vi. Emergency Contact No. and procedures
  - vii. Details of Fire prevention and emergency response systems & procedures at site.
  - viii. Requirement of incident / near miss reporting by all.
  - ix. Accident case studies
  - x. Rules to be followed in the labor colony (if applicable)
5. Evaluation to be carried out after training and induction training to be repeated in case of failure of participant in evaluation
6. On completing subcontractor's in-house HSE induction, each employee shall sign an induction training form (format no. HSEP: 14-F03) to declare that he had understood the content and shall abide to follow and comply with safe work practices. They may only then be qualified to be issued with a personal I.D. card, for access to the work site (provided Health Checkup is over).

### 9.2 HSE TOOLBOX TALK

1. HSE Tool Box talk shall be conducted by frontline foreman/supervisor of subcontractor to specific work groups daily prior to the start of work. The agenda shall consist of the following:
  - i. Visual checkup of workers regarding health, any signs of fatigue, intoxication etc.
  - ii. Details of the job being intended for immediate execution.
  - iii. The relevant hazards and risks involved in executing the job and their control measures.
  - iv. Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
  - v. Recent non-compliances observed.
  - vi. Appreciation of good work and warning for any unsafe acts done by any person.
  - vii. Any doubt clearing session at the end
2. Record of Tool box talk shall be maintained as per Format no. HSEP:14-F04

### 9.3 TRAINING ON HEIGHT WORK

Due to the large percentage of fall from height in incidents, training of minimum 2-hour duration on height work shall be imparted to all height workers by in- house / external faculty for every batch of new inductees. The training shall include following topics:

1. Inspection of work area, access and egress w.r.t height hazards
2. Use of PPEs; use of fall arrester, retractable fall arrester, life line, safety nets etc.
3. Safe climbing through monkey ladders.
4. Inspection of PPEs.
5. Medical fitness requirements.
6. Mock drill on rescue at height.
7. Dos & Don'ts during height work.



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### 8. Accident case studies

In case, above is organized by BHEL, proportionate cost shall be borne by subcontractors

## 9.4 HSE TRAINING DURING PROJECT EXECUTION

1. HSE training shall be arranged by subcontractor as per the need of the project execution and recommendation of BHEL.
2. The topics of the HSE training shall be as follows but not limited to:
  - i. Hazards identification and risk analysis & Identification of Environmental Aspects / Impacts
  - ii. Work Permit System
  - iii. Learning from past incidents
  - iv. First aid, Firefighting & Fire-warden training
  - v. EMS and OHSMS
  - vi. T & Ps fitness and operation
  - vii. Electrical & Chemical safety
  - viii. Welding, NDE & Radiological safety
  - ix. Material handling.
3. Safety awareness and on-the-job training programmes shall be carried out at site for all workers periodically. Periodicity to be decided by BHEL but shall be minimum once in six months
4. Penalty Training – In case of any incident, the involved person, group or agency shall undergo a penalty HSE training for a minimum period of 2 hrs or as decided by BHEL.
5. In case it is not possible to provide training to all workers at once, same shall be imparted in Batch-wise manner so as to cover all workers with specified periodicity.
6. An up-to-date record to be maintained with attendance of participants and trainers preferably in soft copy as per Format No. HSEP:14-F03.
7. Every employee of agency should be provided at least 2 hr. safety training in every month.

In case, above is organized by BHEL, proportionate cost shall be borne by subcontractors

## 10. HSE PROMOTION: SIGNAGE, POSTERS, COMPETITION, AWARDS ETC

### 10.1 DISPLAY OF HSE POSTERS AND BANNERS

Site shall arrange appropriate posters, banners, slogans in local/Hindi/English languages at work place.

### 10.2 DISPLAY OF HSE SIGNAGE

Appropriate HSE signage shall be displayed at the work area to enhance awareness of HSE workmen and passersby about the work going on and do's and don'ts to be followed.

### 10.3 COMPETITIONS ON HSE, AWARDS & REWARDS





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1. Subcontractor shall arrange competitions (slogan, poster, essay etc.) on HSE for workers and employees from time to time (Safety day, World Environment Day etc. minimum one such function each month) and winners will be suitably awarded during the functions.
2. Subcontractor shall identify workers following good HSE practices and reward them from time to time as encouragement to follow good HSE practices.
3. Alternatively, if a common monthly function is organized at site, subcontractor shall participate in the same so that a minimum frequency of one such function per month is maintained.

### 10.4 HSE AWARENESS PROGRAMMES

Subcontractor shall arrange HSE awareness programmes periodically on different topics including medical awareness for all personnel working at site from time to time including officials involved in execution.

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## 11. HSE COMMUNICATION AND PARTICIPATION

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### 11.1 MONTHLY HSE REPORTING

1. HSE activities shall be reported to BHEL monthly as per Format no. HSEP: 14-F05. The reporting medium can be hard/soft as per BHEL requirement.
2. The period of reporting shall be 25<sup>th</sup> of the preceding month to 24<sup>th</sup> of the present month and report shall be submitted by the end of the calendar month or as conveyed by BHEL.
3. BHEL can modify the reporting requirements as per requirement

### 11.2 HSE EVENT REPORTING

1. Important HSE events like HSE Training, Mock / Fire/Rescue Drills, Medical camp etc. organized by subcontractor shall be reported to BHEL in detail with photographs
2. Celebration of important days like National Safety Day, World Environment Day etc. shall also be reported likewise.

### 11.3 HSE INCIDENT REPORTING

All incidents (near misses, property damage, first-aid cases, minor, major and fatal incidents) shall be reported to BHEL as they happen through SMS and Hard/Soft copy as per Format No. HSEP: 14-F22

### 11.4 HSE SUGGESTIONS

All workers and employees to be encouraged to provide suggestions for improvement in



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Health, Safety & Environment at site. The suggestions to be recorded in a "Suggestions Register". Suggestions to be reviewed and those having potential of significant beneficial effects are to be implemented, and recognition / award to be given to the individual.

### 11.5 CLIENT COMMUNICATON

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

### 11.6 RECORDS OF COMMUNICATON

Records of all communication and their responses as detailed above shall be maintained by subcontractor in hard / soft copy and produced when required.

## 12. INCIDENT REPORTING, INVESTIGATION & CORRECTIVE ACTION

1. A conducive environment for reporting of near misses and other incidents shall be developed at site through system of rewards etc.
2. Priority to be given to ensure medical treatment of the victim. Victim to be given immediate First Aid and transported to Medical Facility in a well-equipped Ambulance
3. All incidents, as they happen, shall be reported to BHEL immediately over phone/SMS/Whatsapp/mail and then in Format No. HSEP:14-F22 within 24 hrs. of occurrence. Immediate SMS shall be sent to concerned Package In-charge with following Details:

- a. Project & Customer Name:
- b. Subcontractor Name & Scope:
- c. Incident Area:
- d. Number of Injured / Fatalities:
- e. Date & Time of Accident:
- f. Incident Description in few lines:

No incident shall be hidden

4. Records of all incidents shall be maintained in hard / soft copy as per Format No. HSEP:14-F23.
5. For all incidents:
  - a. The incident area, equipment / tools involved, documents & records etc. shall be maintained as-it-is pending investigation
  - b. Root Cause Analysis (RCA) to be conducted and corresponding Corrective / Preventive Action (CAPA) ensured
  - c. Responsibility shall be assigned and action to be taken against the erring individual
  - d. In case presence of manufacturer of the equipment involved is required, subcontractor will arrange the same



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- e. All expenses pertaining to the RCA / CAPA shall be borne by the subcontractor
6. RCA and CAPA reports of all near misses and minor injuries shall be identified and report submitted to BHEL within 7 days of occurrence.
7. For incidents, where worker does not resume duty within 48 hours of occurrence, Joint investigation along with BHEL shall be conducted within 7 days, and CAPA ensured.
8. Corrective action shall be immediately implemented at the work place. Work shall be put on hold in the area till corrective actions are verified by BHEL
9. All incidents, their Root Cause Analyses and Corrective actions shall be recorded, and analyzed so as to identify weak areas and actions to be taken to reduce the incident trend.

### **13. SAFETY DURING WORK EXECUTION**

#### **13.1 HSE SYSTEMS AND PROCEDURES**

BHEL Power Sector HSE Management System (HSEMS) shall be referred for controlling hazards, aspects, and carrying out HSE activities at site. Subcontractor shall get familiar with and follow the HSEMS documents provided by BHEL which include the follows:

##### **13.1.1 HSE PROCEDURES:**

All HSE Procedures defined in HSEMS, as referred in various sub-clauses of this Section as given in Annexure 01

##### **13.1.2 PERMIT TO WORK (PTW) SYSTEM**

1. The following activities shall be carried out by the subcontractor strictly after obtaining Permit to Work (PTW) from BHEL
  - i. General Work Permit (**Format No. HSEP14-FP01**)
  - ii. Height working (**Format No. HSEP14-FP02**)
  - iii. Hot working (**Format No. HSEP14-FP03**)
  - iv. Confined space Work (**Format No. HSEP14-FP04**)
  - v. Excavation more than 2-meter depth (**Format No. HSEP14-FP05**)
  - vi. Radiography / Radiation Work (**Format No. HSEP14-FP06**)
  - vii. Heavy / Complex / Critical Lifting Activity (**Format No. HSEP14-FP07**)
  - viii. Night / Holiday Work (**Format No. HSEP14-FP08**)
  - ix. Material Loading / Unloading Permit (**Format No. HSEP14-FP09**)
  - x. Grating / Safety Net / Safety Facility Removal Permit (**Format No. HSEP14-FP10**)
  - xi. Live Electrical Maintenance etc. - Lockout / Tag (**Format No. HSEP14-FP07**)



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2. 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).
3. Where customer is having separate Work Permit System the same shall be followed in conjunction to ensure all activities and checks are covered in all systems.
4. Permit applicant shall apply for work permit of particular work activity at particular location before starting of the work along with Job Hazard Analysis.
5. All Permit signatories 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.
  - a. Signatory shall physically visit the area of work and ensure all required safeguards before signing the Permit
  - b. Signatory shall periodically visit the area to confirm the availability of required safeguards throughout the currency of the permit
  - c. In case any Permit requirement is not available, work will be stopped till it is made available
6. Permit holder shall implement and maintain all control measures during the period of permit. The permit will be closed after completion of the work and submitted to BHEL.

### 13.1.3 Operational Control Procedures

1. All applicable OCPs (Operational Control Procedures) as identified from outcomes of HIRA, Aspect / Impact studies and BHEL inputs will be followed by subcontractor. This will be done as part of normal scope of work.
2. Illustrative list of such OCPs is given in Table 13.1 and same will be made available to subcontractor by BHEL during work execution at site.
3. In case any other OCPs are required or existing ones need to be modified in order to control the risks / impacts associated with any activity during the execution of work subcontractor shall prepare / update and follow the same with information to BHEL.

**Table 13.1 - LIST of Reference OCPs**

No.	Topic	No.	Topic	No.	Topic
0	General Safety	20	Oil flushing	40	Gas distribution test
1	Handling of chemicals	21	Alkali boil out	41	Cleaning of Hotwell / Deaerator
2	Electrical safety	22	Steam blowing	42	Electrical maintenance
3	Energy conservation	23	Working in confined area	43	O&M of control of AC plant & system
4	Welding and gas cutting operation	24	Operation of passenger lift, material hoists & cages	44	Material preservation
5	Fire safety	25	Vehicle/ Crane maintenance	45	Electro-resistance heating
6	Use of hand tools	26	Radiography	46	Blasting
7	First aid	27	Waste disposal	47	Transformer charging



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8	Food safety at canteen	28	Handling & storage of mineral wool	48	Handling of battery system
9	Use of cranes	29	Working at night	49	DG set
10	Storage and handling of gas cylinders	30	Computer operation	50	Sanitary maintenance
11	Manual arc welding	31	Storage in open yard	51	Piling rig operation
12	Use of helmets	32	Drilling, reaming and grinding(machining)	52	Passivation
13	Good house keeping	33	Stress relieving	53	EDTA Cleaning
14	Safe excavation	34	Hydraulic test	54	Chemical cleaning of Pre boiler system
15	Working at height	35	Trial run of rotary equipment	55	Boiler Light up
16	Filling of hydrogen in cylinder	36	Batching	56	Rolling and Synchronization
17	Illumination	37	Cable laying/tray work	57	Loading of Unit
18	Handling and erection of heavy metals	38	Spray insulation	58	Air compressor
19	Acid cleaning	39	Compressor operation	59	Hydra Operation

### 13.2 ACTIVITY SPECIFIC REQUIREMENTS FOR SAFETY:

All Work shall be commenced only after taking the respective Work Permits (as applicable) and precautions as per relevant codes, systems and OCPs in order to ensure safe conditions throughout the duration of work. Additionally, activity specific safeguards as per this section shall be followed.

#### 13.2.1 WORK AT HEIGHT:

1. 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.
2. 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.
3. 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).



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4. 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

### 5. **Safety Nets**

- a. Contractor shall maintain sufficient stock of Safety Nets for deployment
- b. Safety Nets as per IS: 11057:1984 should be used extensively for prevention / arrest men and materials falling from height.
- c. The safety nets shall be fire resistant, duly tested and shall be of ISI marked.
- d. 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
6. 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.
7. Monkey Ladder shall be fitted with cages. Rope ladder should be discouraged.
8. In case of pipe-rack, persons should not walk on pipes and walk on platforms only.
9. In case of roof work, walking ladder/ platform should be provided along with lifeline and/ or fall arrestor.
10. For chimney or structure painting, both hanging platform and men should be anchored separately to a firm structure along with separate fall arrestor.
11. The procedures for the safety response to identified fall hazards developed and rescue plans must be reviewed with all individuals exposed to the hazards.
12. 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.
13. 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.
14. Aerial lifting devices, excluding scissor lifts require the use of full body harnesses and lanyards in any elevated position.





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### 13.2.1.1 Personnel fall protection system must include:

#### a. Safety Harness

All height workers must use Safety harness with double lanyards. 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.**

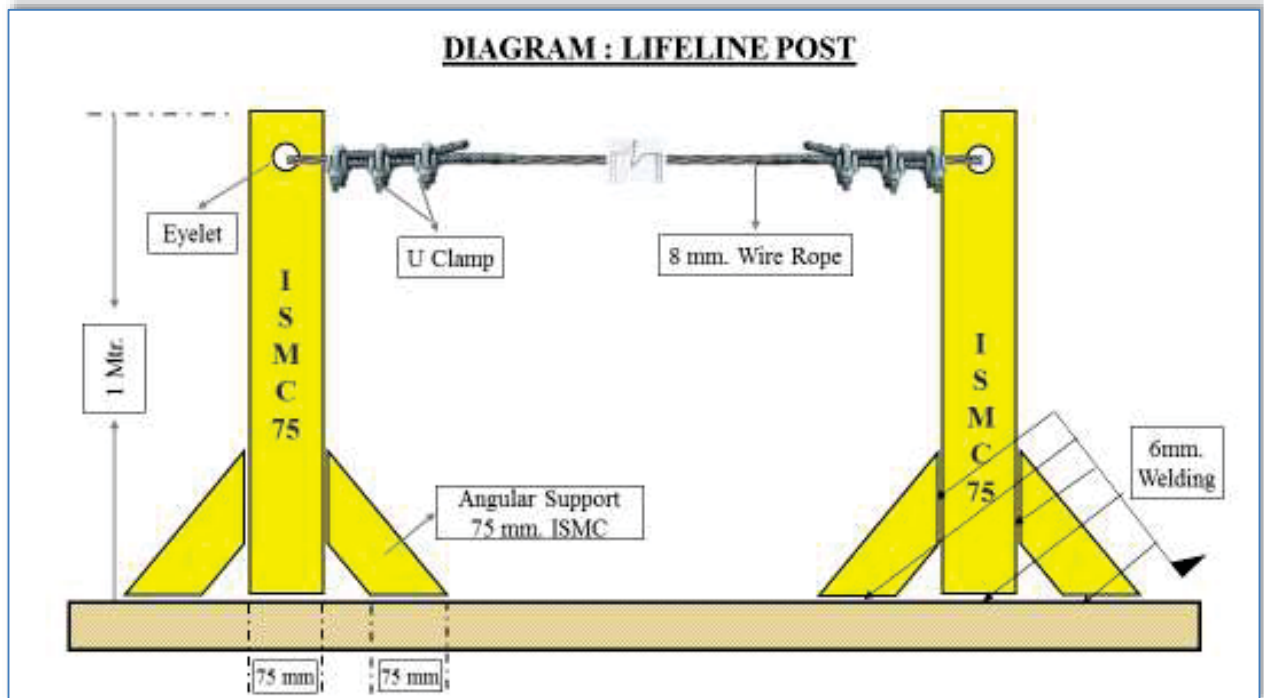
#### b. Lanyard

- 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 8mm 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



**Fig. 13.2.1.1 Lifeline Post**

- i. The support at vertical post shall be fixed at end-to-end. The maximum length of one end to another end shall be 18 meters
- ii. If the length of a lifeline is more than 18 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 18 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 2 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

### 13.2.1.2 Working Platform

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

### 2. Precautions against the fall of Materials, Persons and Collapse of Structures





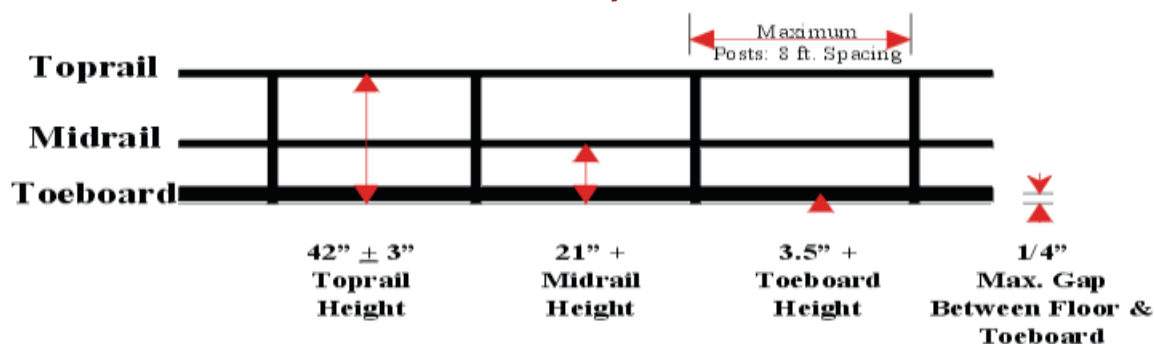
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- i. Every opening in the floor or a building or in a working platform shall be suitably barricaded to prevent the fall of persons by providing suitable fencing or railing whose minimum height shall be 90 cm.
- ii. Adequate precautions should be taken 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. 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.

### Guardrail system



**Fig. 13.2.1.2 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



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rope shall be provided across the work area.

- x. The HSE officer shall recommend appropriate PPEs after analyzing hazards and risks involved.

### 13.2.1.3 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.

#### General

1. The scaffolding work must be carried out by a competent person, who shall train the scaffold users on safety aspects
2. All scaffolds shall be erected / dismantled by scaffolding crew under direct supervision of competent scaffolding supervisors.
3. 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.
4. 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.
5. Guard rails and toe boards shall be installed on all open sides and ends of platforms more than (2) meters above ground or floor
6. Scaffold planks must be at least 5 cm x 25 cm (2" x 10") full thickness lumber scaffold grade or better.
7. Scaffold planks shall not span distances greater than 2.5 meters (8 feet).
8. 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.
9. All scaffolding must be a minimum of two planks wide. No one may work from a single plank.
10. Scaffold planks must be inspected before use. Planks that have been damaged must be removed from the site.
11. Access ladders must be provided for each scaffold. Climbing the end frames is prohibited unless the design incorporates an approved ladder.
12. Adequate mudsills or other rigid footing capable of withstanding the maximum intended load must be provided.
13. Scaffolds more the 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.
14. Do not overload scaffolds. Material should be brought up as needed. Scaffolding must not be loaded in excess of its rated capacity.
15. Barrels, boxes, kegs, blocks or similar unstable object must never be used as work platforms or to support scaffold.
16. 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.
17. Employees exposed to overhead hazards while working on a scaffold will be protected by 5 cm (2") thick planks.
18. 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.



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19. Wooden scaffolds shall not be used in areas where fire / fire products are expected
20. Ropes made of jute / Plastic and other fire prone material shall not be used to tie up scaffolding components together
21. The platform should have permanent hand rail and mid rail with Toe board without fail.
22. 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.
23. 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.

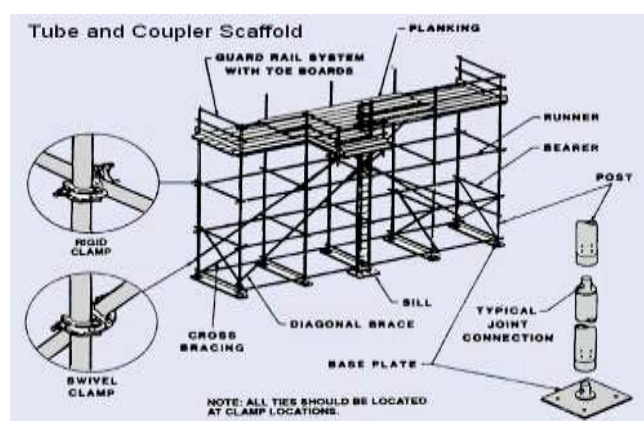
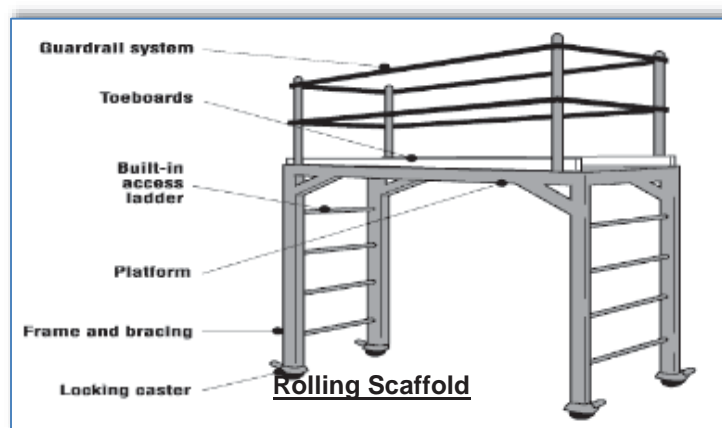
### 24. Requirements for different types of Scaffolds:

#### 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.



**Fig. 13.2.1.3 Types of Scaffolds**

### 25. Scaffold Tagging

Scaffolds being erected, modified or dismantled must be tagged as suitable for use. The scaffolds can only be accessed by those involved with the process.

**GREEN** scaffold tag- shall be fixed when scaffold is complete and safe for use, signed and dated by



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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.

Examples of scaffold tags:



**Fig. 13.2.1.4 Scaffold Tagging**

### 13.2.1.4 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

#### **Safe Use of Ladders:**

1. Fall protection is required when working on a ladder above 2 meters and when climbing above nearby guardrails.
2. Ladders must be inspected prior to use and by a competent person quarterly, with documentation.
3. Use portable ladders for height up to 4 M only
4. Provide fixed ladders for height above 4 M
5. Place the ladder at an angle of 75 degrees (approx.) from the horizontal (1:4)
6. Extend ladder at least 1 M above the top landing
7. Secure top and bottom of the ladder firmly to prevent displacement- anti skid lining at the bottom
8. Ensure that the width of the ladder is not less than 300 mm and distance between rungs is not more than 300 mm
9. 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
10. 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
11. Do not use ladders of conducting material near power lines, and only use ladders near power line or other energize system with exposed parts if they are confirmed locked-out and de-



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energized.

12. Stand no higher than the fourth rung from the top for carrying out any job standing on a ladder.
13. Never reach out from a ladder to perform work where your belt buckle protrudes past the ladder rung.
14. Always face the ladder while climbing up or down
15. 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.
16. Avoid climbing up or down a ladder while carrying anything in hands. Lift tools, equipment and materials with a rope.
17. Work from portable and extension ladders near guardrail where fall expose 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

### 13.2.2 EXCAVATION & CIVIL WORKS

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

#### 13.2.2.1 Excavation

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

1. All Excavation activities more than with depth of 1.22 meter or more shall require and Excavation Work Permit
2. 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
3. Proper and adequate slope is maintained while excavating
4. Adequate shoring or sheeting is done wherever require to prevent soil sliding
5. Safe access through ladder or steps for exit & entry to excavation
6. No material /excavated soil is kept within one meter from the edge
7. Safe way is planned and provided for movement of HEM /transport equipment near excavation
8. Safety helmet and shoes/gum boots are provided and worn by the workmen at excavation works
9. Dewatering arrangement is made where water seepage is prevailed.
10. Stop blocks are provided to avoid vehicles reversing into the excavated trenches
11. Danger signs /Caution boards are displayed at work spot
12. Barricading is provided at excavated pits





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Soil Type	Height/Depth ratio	Slope Angle
Stable Rock	Vertical	90 deg.
Type A	$\frac{3}{4} : 1$	53 deg.
Type B	1 : 1	45 deg.
Type C	$1\frac{1}{2} : 1$	34 deg.

Determining Soil Type		
Type	Description	Examples
A	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	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.
C	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. 13.2.2.1 Excavation Reference**

### 13.2.2.2 Piling

Ensure the following precautionary measures before starting piling works:

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

### 13.2.2.3 Batching

**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



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emergency 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.

### 13.2.2.4 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. Reverse horn is compulsory for all earth moving machineries.

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

1. Where movement around site is involved, routes should be planned, obstruction free and well maintained
2. Observe specified speed limits
3. Operating personnel should be aware of associated risks and its preventive measures
4. Only experienced, trained and authorized persons with valid license (wherever applicable) should operate the mobile equipment/vehicles
5. Provide and use Warning lights and reverse horn for cautioning the people around
6. Operation should be on level and stable ground with adequate working clearance.
7. Loading of out riggers/stabilizers should be well within safe ground bearing capacity
8. No person should be on equipment or vehicle during loading and unloading of material
9. Operators should be protected by warning barriers or switching off power when working in close proximity of overhead power lines
10. The equipment /vehicles should be well maintained and provided with effective brake system and other safety devices (wherever require)
11. Rotating parts of equipment should be adequately guarded
12. 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.
13. No overloading/over stressing of vehicles/plant is allowed
14. Hoses, pipes, receivers, gauges and valves involved in carrying out hydraulic fluid/ compressed air should be checked for leaks and tested prior to operation.
15. Adequate safe clearance for swing and movement is to be judged during operation of Concrete mixer



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16. Setting of machine on firm and level ground with wheel locked to prevent movement of machine
17. Proper instructions and Special precautions are to be ensured to prevent entry in to the danger zone of projectile of bucket while dropping bucket
18. Operator leaving work spot should ensure that the equipment/vehicle is kept in neutral position and place on firm and level ground.
19. The hand brake should be kept in position and block road wheels as additional safety measure
20. Blades/buckets should be kept low while moving
21. The dozer blades should not be used as brakes except in emergency
22. The ground should be examined for its bearing capacity and general safety especially when operating road roller at the edges of slopes, embankments.
23. The roller should not be moved downhill with the engine out of gear
24. If operating near excavations the following precautionary measures are to be ensured
25. Barricading, edge protection to prevent fall of persons/vehicles over running while reversing etc.
26. Suitable support system and adequate allowance to avoid the danger of side collapsing
27. 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

### **13.2.2.5 Concrete Vibrators**

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

### **13.2.2.6 Concrete Mixers**

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

### **13.2.3 WELDING & GAS CUTTING SAFETY (HOT WORK)**

1. All Hot Work shall require a Hot Work Permit
2. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced.
3. All safety precautions shall be taken for welding and cutting operations as per IS-818.
4. 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.
5. 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.
6. 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.



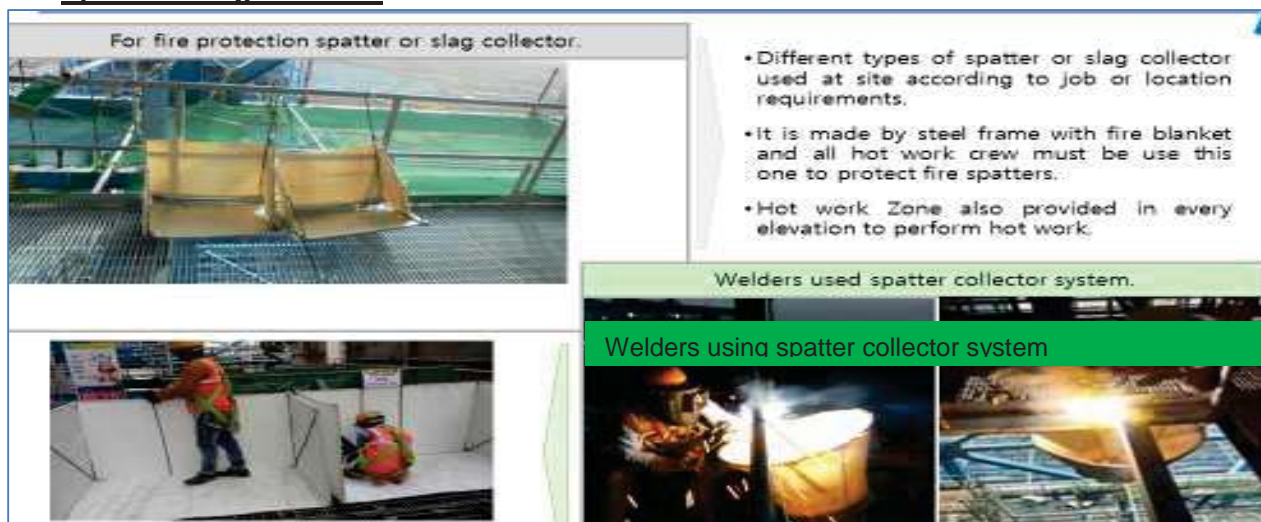


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7. Proper ventilation is required for any welding or torch operations performed in a confined space.
8. Any welding or gas cutting operations performed on metals of toxic compounds or coating such as zinc, stainless steel, lead, cadmium, chromium, 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.
9. 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.
10. 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.
11. 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.
12. Arc welding power supply cable shall be of proper rating and material, e.g. copper.
13. 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.
14. Valve caps shall be in place when cylinders are not in use. Valve caps shall never be used for lifting the cylinder vertically.
15. Torches shall only be lit by approved strikers; never with matches, cigarette lighters, or hot-work.
16. **Splatter / Slag Collector**



**Fig. 13.2.3.1 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 or molten slag shall be barricaded till ground floor and any cable/ tubes/ any other objects interfering in the passages hall either be removed or covered with Fire-resistant sheet or MS Sheet.



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### 13.2.3.1 COMPRESSED GAS

1. 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.
1. 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.
2. 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.
3. When cylinders are transported by powered vehicle they shall be secured in a vertical position.
4. 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.
5. Gas cylinders are not allowed to be used in man-basket when occupied.
6. Cylinders containing oxygen or fuel gasses shall not be taken into confined spaces.
7. Oxygen cylinders shall be stored a minimum of 6 meters from fuel gas cylinders or shall have an approved firewall between them.
2. All cylinders shall be kept at a safe distance from welding or cutting operations or shielded from arc/ sparks / slag.
3. All cylinders shall be placed where they cannot become part of the electrical circuit.
4. 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.
5. 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
6. Oxygen and fuel gas regulators, hoses and associated equipment shall not be altered and shall be in proper working order while in use.
7. 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.
8. 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.
9. No of cylinders shall not exceed the specified quantity as per OCP
10. 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.
11. All cylinder should be kept only in cylinder trolley.
12. Cylinder shall be transported in upright vertical position by suitable mean.

### 13.2.4 LIFTING & RIGGING SAFETY

1. All Heavy / Complex Lifting operations as defined in Clause 6.12 shall require a Lifting Work Permit.
2. All the cranes and lifting tools & tackles shall be inspected on daily / weekly basis as well as



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monthly by expert as per applicable formats.

3. 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
4. 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.
5. Following requirements shall be mandatorily followed, wherever applicable:
  - a. The manufacturer's instruction for maintenance shall also be followed. All safety measures shall be followed.
  - b. All tools tackles, lifting appliances; material-handling equipment etc. used by the subcontractor shall be of safe design and construction.
  - c. The operators, slingers and signalers shall be qualified as per IS 13367 (part-1):2003 "Safe use of cranes- code of practices".
  - d. There shall be a person responsible for co-ordination among cranes where multiple cranes are used, and lifting over 75% of the crane capacity to be avoided.
  - e. Mobile phone should be banned for crane operator and lifting operation. Only walki talki shall be allowed in rigging/Lifting purpose.

**13.2.4.1 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.

- a. 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.
- b. Man-basket shall be used where access through ladders or scaffolding is not feasible.
- c. 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.
- d. 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%.
  - e. It shall have a door with double latches and shall open inside. Anchor points shall be identified within the man-basket.
- f. The man-basket shall be thoroughly inspected and load tested and a trial run performed without personnel before being put to job.
- g. It shall be treated as a lifting tool (T&P Item) and shall undergo same certification cycle and inspection as other lifting equipment.
- h. 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.

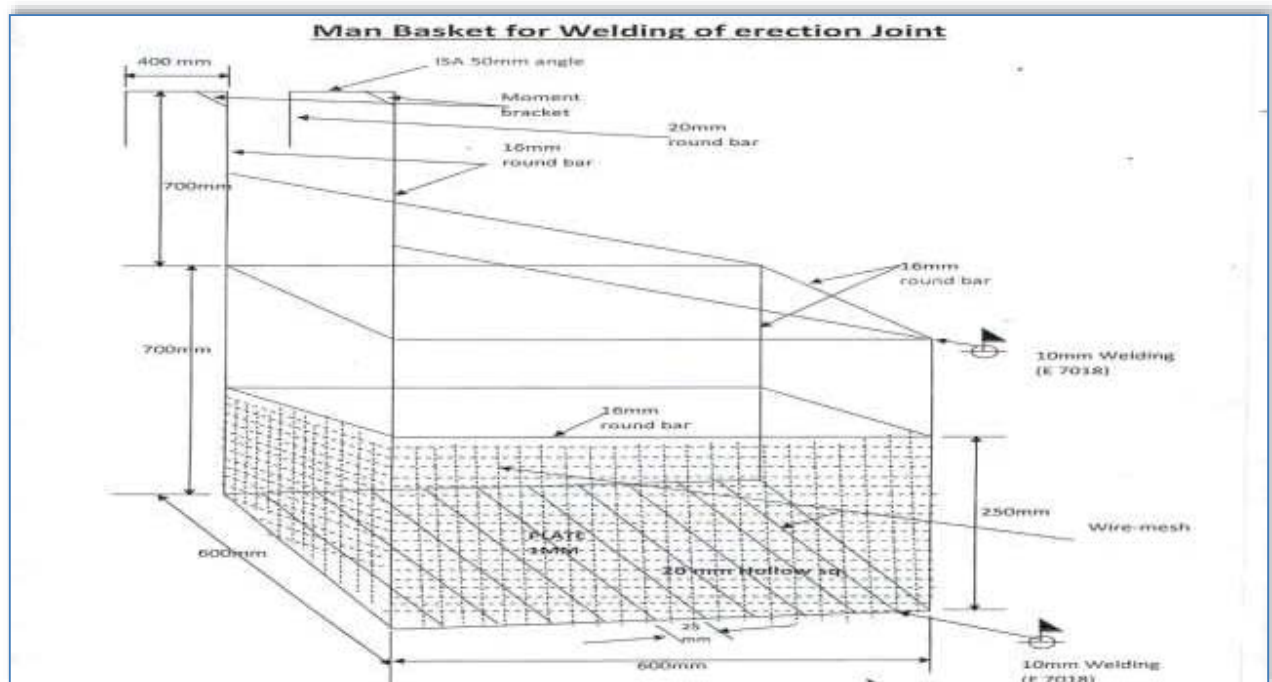


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- i. While lifting man-basket, the crane shall maintain a uniform speed of lift without any swing.
- j. Once man-basket reaches the destination, the lift brakes shall be locked as long as the basket remains at that point. The same care shall be taken in its descent.
- k. 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.
- l. Use of Rebar steel for making and monkey-ladder must be avoided.



**Fig. 13.2.4.1 Man Basket for Welding Erection Joint**

### 13.2.4.2 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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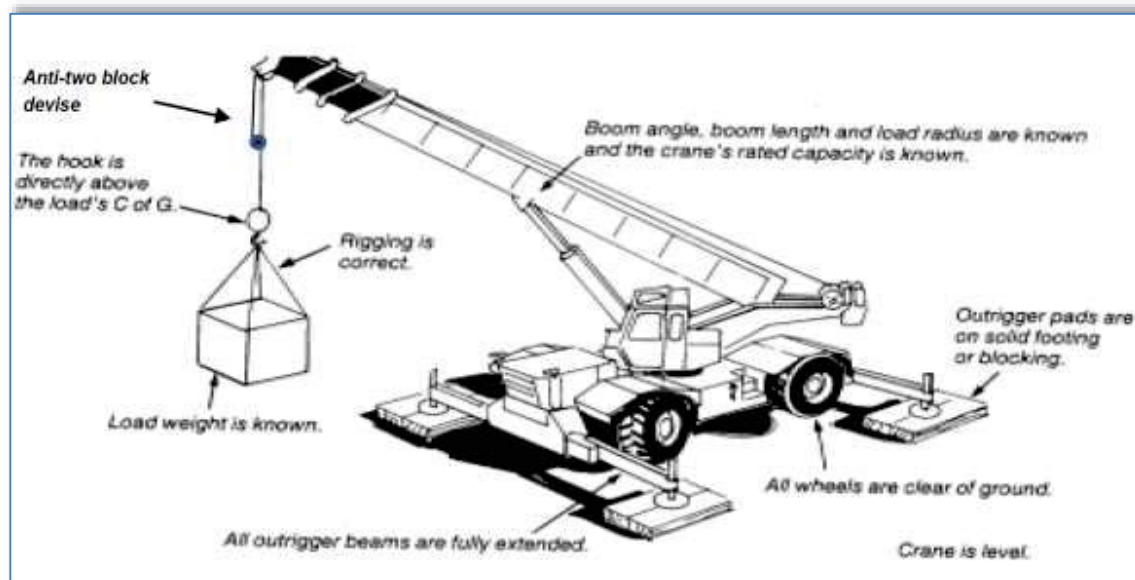
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**Fig. 13.2.4.2 Proper Crane Setup**

- 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. 13.2.4.2)





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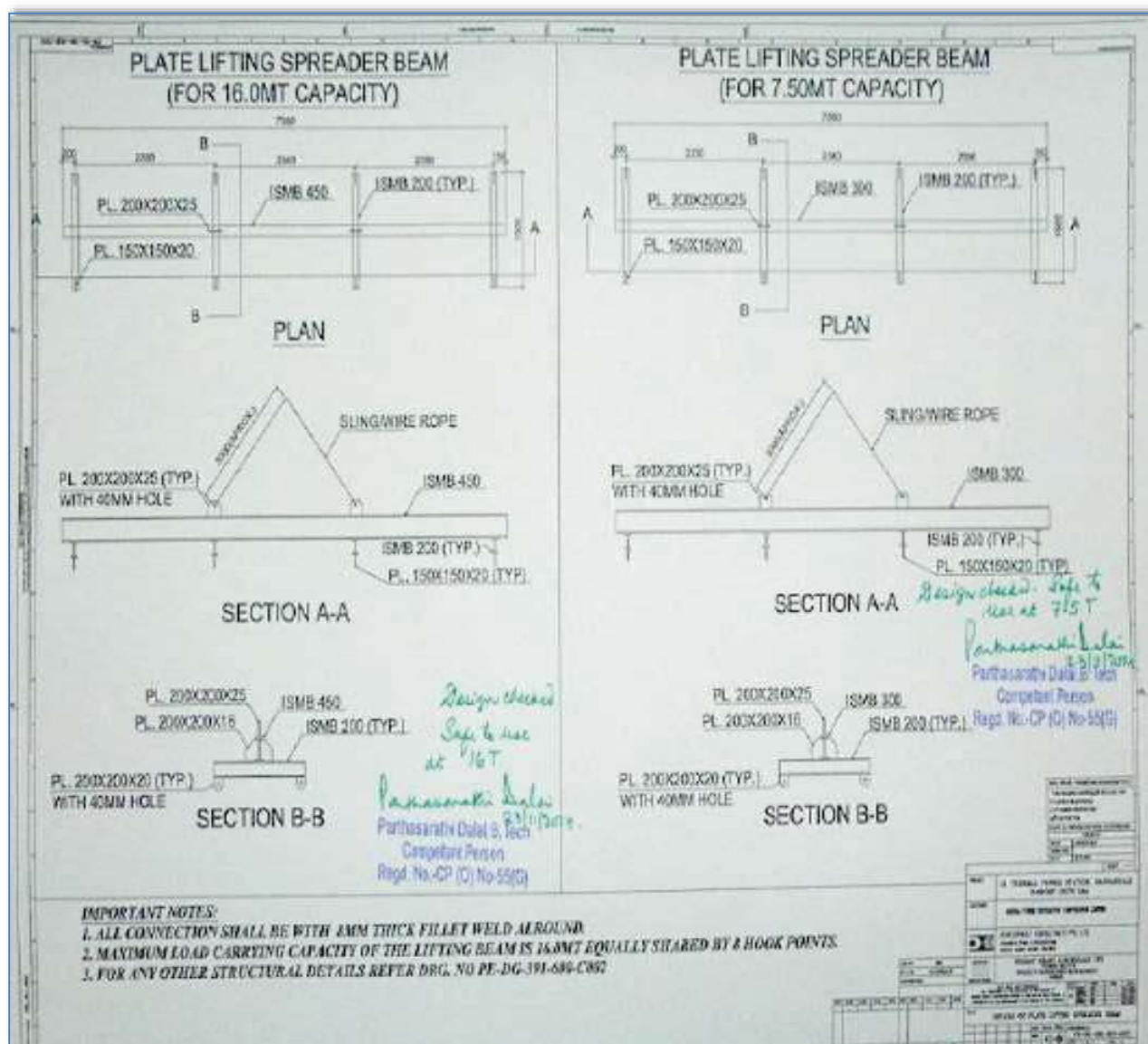
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**Fig. 13.2.4.3 Typical Plate Lifting Spreader Beam Configuration for 7.5 MT and 15 MT Loads**

**I. Crane operators must follow the following:**

1. Pass an annual Operator's Physical examination
2. Carry a valid training certification card at all time while operating issued by the Govt. or other recognized institute.



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### 13.2.4.3 SAFE RIGGING PRACTICES

#### 13.2.4.4

- a. Review the planned operation and requirements with the operator and rigging crew.
- b. Ensure a pre-lift meeting is conducted with crane operator, tagline operator, signal personnel, and Safety Manager.
- c. 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 desired clearance by visual means.
- d. Clear the lift area of all unnecessary personnel.
- e. Hydras shall only be allowed for loading & unloading works & shall not be allowed to move with load

#### 13.2.4.4.1 RULES FOR SAFE RIGGING

1. Use loops, thimbles and corner pads to prevent damage to slings when used around corners or on cutting edges.
2. 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.
3. Slings must not be pulled from between or under loads with load resting on the sling.
4. Keep all rope away from flame cutting or welding operations.
5. Never use rope as sling material.
6. Never wrap a wire rope completely around a hook.
7. Do not bend wire rope near any attached fitting.
8. The sling must be selected to suit 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.
9. When using 3 and 4 legged sling configurations, any two legs must be capable of supporting the entire load.
10. 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.
11. 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.
12. Properly rig all loads to prevent dislodgment of any part.
13. Use guide ropes or tag lines to prevent the rotation or uncontrolled motion of the load when necessary.
14. 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.
15. 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.



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16. 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.
17. Multiple part lines must not be twisted around each other.
18. The hook must be brought over the center of gravity of load before the lift is started.
19. 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.
20. Keep hands away from pinch points as the slack is being taken up.
21. Leather gloves are recommended when handling wire rope.
22. Avoid impact loading caused by sudden jerking when lifting or lowering. Lift the load gradually until the slack is eliminated.
23. Never ride on a load that is suspended.
24. Avoid allowing the load to be carried over the heads of any personnel.
25. 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.
26. Never leave a load suspended unless emergency evacuation is required.
27. Never make temporary repairs to sling.
28. The capacity of a sling is determined by its angle, construction, type of hitch and size.
29. Never lift loads with one leg of a multi-leg sling until the unused legs are made secure.
30. Never point load a hook unless it is especially designed and rated for such use.
31. Make certain that the load is broken free before lifting and that all legs are taking the load.
32. When using two or more slings on a load make certain all slings are made from the same materials.
33. Lower the loads on to adequate blocking to prevent damage to the slings.
34. Materials and equipment being hoisted must be loaded and secured to prevent any movement which could create a hazard in transit.
35. The weight of the hook, load block and any material handling devices must be included when determining crane capacity.
36. Calculated weights cannot exceed 75% of the chart without written approval.
37. 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.

### 13.2.4.4.2 SLINGS

#### a. Synthetic 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:**





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- 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 insure insulation integrity to at least manufacturer's specifications.

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

- a. 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.
- b. Wear or scraping of one-third the original diameter of outside wires.
- c. Kinking, crushing, bird caging or any other damage resulting in distortion of the wire rope structure such as:
- d. Evidence of heat damage.
- e. End attachments that are cracked, deformed worn.
- f. Corrosion of the rope or end attachments.

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

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

**vi. 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 service
- c. Snags, punctures, tears or cuts
- d. Broken stitches
- e. Distortion of fittings

**vii. Requirements of Plate Clamps:**

- 1. The rated load of the plate clamp must be marked on the main structure.
- 2. Care must be taken to make certain the load is correctly distributed for the plate clamp being used.
- 3. Do not allow load or plate clamp to come into contact with any obstruction.
- 4. The plate clamp must not be used for side pulls or sliding the load.
- 5. When lifting stainless steel or special alloys, ensure plate clamp is designed for use on



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the specific metal.

### 13.2.4.4.3 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. 13.2.4.4 Recommended Signalling Practices**



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### 13.2.5 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:

1. All roads and open areas adjacent to the work site shall either be closed, suitably protected or restricted for movement
2. 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.
3. 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.

### 13.2.6 T&Ps General

1. All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test /calibration certificates bearing endorsement from competent authority of BHEL.
2. 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.
3. Tagging and punching in all lifting tool is compulsory with SWL, sr. no. and due date.
4. 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
5. All T&Ps shall be internally inspected in each quarter and colour coded as below.

#### 13.2.6.1 T&P Color Coding Procedure:

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	RED
January February March	April May June	July August September	October November December

**Table. 13.2.6.1 T&P Color Coding Procedure**

- i. 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.



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- ii. Following the initial inspection, the equipment must be color-coded quarterly as per color-coding instructions that will be issued by the subcontractor.
- iii. Fire extinguisher with the current month color-coding inspection sticker must be provided and secured in the platform.
- iv. 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.
- v. The Subcontractor's Safety 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. Regular inspections on the PPE shall be carried out and personnel not adhering to those inspections shall be removed immediately from the site.
- vi. A five (10) day interval period shall be given into each monthly color code change. During this five (10) day period either color shall be acceptable.

### 13.2.7 CHEMICAL HANDLING

1. Displaying safe handling procedures & MSDS for all chemicals such as lube oil, acid, alkali, sealing compounds etc, at work place.
2. 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.
3. The used containers of chemicals shall be segregated and disposed off suitably
4. 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

### 13.2.8 ELECTRICAL SAFETY

1. 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.
2. 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



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3. All power supplies through cables shall be underground or overhead with height > 3mtrs.
4. All distribution boxes shall be locked and the key controlled by site management of concerned subcontractor.
5. All individual equipment & tools at site shall be powered through Earth Leakage Circuit Breakers of 30 mA sensitivity.
6. These MCBs and ELCBs shall be regularly tested as per Clause 14
7. All fuses and fuse wires shall be of standard size and rating.
8. All electrical appliances used in the work shall be in good working condition and shall be properly double earthed other than armour earthing.
9. All extension boards shall have separate switches for all sockets / connections
10. All portable electric tools used by the subcontractor shall have safe plugging system to source of power and be appropriately earthed.
11. 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.
12. Electrical appliance shall have proper earthing and for appliances equal to & more than 415V shall have two separate earthing (as per IS-3043-1987)
13. Details of earth resource and their test date to be given to BHEL safety officer as per the prescribed formats of BHEL
14. 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.
15. BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the risk & cost of the subcontractor.
16. No maintenance work shall be carried out on live equipment
17. 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
18. The subcontractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.
19. 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.

**20. Portable Electric Lights**

- a. 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).
- b. They must be visually checked before each use and periodically while in use to assure their original integrity is maintained.
- c. Cords with cuts, breaks, deep abrasions, etc. shall be taken out of service immediately.
- d. Repairs to extension cords shall only be performed by qualified/ licensed electricians.
- e. Must not be allowed to lie in wet or potentially wet areas.





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### 21. Underground Cables:

- a. 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.
  - b. 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.
  - c. Such precautions may include halting the operation if appropriate.
  - d. 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.
  - e. Any and all underground lines that are discovered or become severed must be considered energized on both sides, and be treated accordingly.
22. In general, equipment or machinery being moved or transported must maintain minimum clearances of 25 ft. to all power lines.
23. 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
24. 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.
25. 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.
26. 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.
27. 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.
28. Only licensed electricians are authorized to repair and work on electrical equipment. Tampering with electric tools or equipment by others could result in termination.
29. 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.
30. Energized wiring in junction boxes, circuit breaker panels and similar places must be covered and locked at all times.
31. Areas with live high voltage wires or terminals must be barricaded against entry and warning signs posted Danger – High Voltage and Authorized Personnel Only.
32. Personnel should never work on energized equipment, de-energizing (lockout/tag out) the equipment is always the first requirement.
33. The lockout and tag out procedure will be used when testing or working on, or around, energized installation.
34. Working around energized equipment should never be done alone. A second electrician must always be available for assistance.



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35. 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.
36. 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.
37. 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.

### **38. Qualified Persons for Electrical Works**

One who is trained and wiremen licensed to Govt of 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.

### **13.2.9 USE OF HAND TOOLS AND POWER-OPERATED TOOLS**

#### **13.2.9.1 General Provisions**

- a. All hands and power tools and similar equipment, shall be maintained in safe condition.
- b. When power operated tools are designed to accommodate guards, they shall be equipped
- c. with such guards, when in use;
- d. Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains and other reciprocating, rotating or moving parts of the equipment shall be similarly guarded;
- e. 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





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provided with the particular personal protective equipment necessary to protect them from the hazards;

- f. 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.
- g. 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.

### **13.2.9.2 Hand Tools**

- a. The subcontractor shall not issue or permit the use of unsafe hand tools;
- b. Wrenches including adjustable pipe end and socket wrenches shall not be used when saws are sprung to the point that slippage occurs;
- c. Impact tools such as drift pins, wedges and chisels shall be kept free of mushroomed heads;
- d. The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tools.

### **13.2.9.3 Power Operated Tools**

- a. Electric power operated tools shall be either of the approved double-insulated type or shall be grounded;
- b. The use of electric cords for hoisting or lowering loads shall not be permitted;
- c. Pneumatic power tools shall be secured to the hose or whip by some positive means to prevent the tool from becoming incidentally disconnected;
- d. Safety clips or retainers shall be securely installed or maintained on pneumatic impact (percussion) tools to prevent attachments from being incidentally expelled;
- e. 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;
- f. 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;
- g. The manufacturer's safe operating for hoses, pipes, valves, filters and other fittings shall not be exceeded;
- h. Only personnel who has been trained in the operation of the particular tool shall be allowed to operate power-actuated tools;
- i. 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



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recommended procedure;

- j. 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;
- k. 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;
- l. Loaded tools shall not be left unattended;
- m. 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;
- n. Driving into materials that can be easily penetrated shall be avoided unless backed by a
- o. substance that will prevent the pin or fastener from passing completely through and creating a flying missile hazard on the other side;
- p. No fastener shall be driven into a palled area caused by an unsatisfactory fastening;
- q. Only non-sparking tools shall be used in an explosive or flammable atmosphere;
- r. All tools shall be used with the correct shield, guard or attachment as recommended by the manufacturer.

### 13.2.9.4 Abrasive Wheels and Tools

- a. All grinding wheel must be ISO certified only.
- b. All grinding machines shall be supplied with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation;
- c. Grinding machines shall be equipped with suitable safety guards;
- d. 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;
- e. 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;
- f. Cup type wheels used for external grinding shall be protected by either revolving cup guard or a band type guard;
- g. 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;
- h. Portable abrasive wheel used for internal grinding shall be provided with suitable safety flanges;
- i. 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;
- j. All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that



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they are free from cracks or defects;

- k. 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;
- l. All employees using abrasive wheels shall be protected by suitable eye protection equipment.

### **13.2.9.5 Wood Working Tools**

- a. All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off-position;
- b. 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;
- c. 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;
- d. 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.

### **13.2.10 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.



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### 13.2.11 FIRE SAFETY

Numbers and types of Fire Extinguishers shall be ensured as follows:

Sl. No	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. CO <sub>2</sub> ; 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) (locations of 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 CO <sub>2</sub> ; 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 CO <sub>2</sub> . 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



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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.

1. All Electrical welding booths shall be equipped with appropriate Fire Extinguisher
2. Appropriate Fire Extinguishers shall be made within easy reach of all welding operations
3. Fire extinguishers shall be regularly tested and last checked date to be indicated on each.
4. Providing appropriate firefighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
5. 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.
6. 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.
7. 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.
8. 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.
9. Emergency contacts nos. must be displayed at prominent locations
10. 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.

### 13.2.12 HSE PREPAREDNESS FOR ADVERSE CLIMATES AND WEATHER

Subcontractor to remain updated on possible adverse weather conditions through reliable sources and all precautions taken accordingly.

#### 13.2.12.1 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 Center 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.





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### Do's & Don'ts

9. Drink plenty of cool water and other non-alcoholic fluid and keep body well hydrated.
10. Eat salt in food to replenish loss of salt through sweating.
11. Avoid over physical exercise.
12. Have adequate sleep at night.
13. Eat light and less spicy food
14. Avoid eating food which was cooked long time ago.
15. 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:

16. Rescue the victim from workplace and place under shed.
17. If to be rescued from height, use stoke basket or rescue kit.
18. Inform Ambulance immediately.
19. If nearby any air conditioned room/shed is available, place him inside the room/shed.
20. Administer First aid by trained First aider for Heat Disorder
21. If conscious, give him ORS solution to drink.
22. If required send the victim hospital immediately.

### 13.2.12.2 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, aluminum 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.



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### 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 kmph)
4. Confirm that all gantry cranes are effectively choked to prevent rolling and toppling.
5. Do not forget to deep ready a dew battery operated lights at site-offices during rainy season.
6. Avoid using wet damp clothes.
7. Barricade excavated zone filled with water.
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.





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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 repellants 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 diarrhea 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.

### **13.2.12.3 Emergency Weather Conditions**

#### **A. 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 cleanup 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.



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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:**

14. 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.
15. 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.
16. 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".
17. 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.
18. Checking of gas leaks and well being of electrical appliances is essential before leaving the site.
19. 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.

### **13.2.12.4 Preparedness for Other Adverse Climates and Weather Conditions**

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

### **13.3 ENVIRONMENTAL CONTROL**

1. Environment protection has always been given prime importance by BHEL. Environmental



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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.

2. Subcontractor shall list out all applicable environmental aspects and impacts, and ensure control measures to manage the same.
3. Chlorofluorocarbons such as carbon tetrachloride and trichloroethylene shall not be used.
4. Waste disposal shall be done in accordance with the guidelines laid down in the project specification.
5. Any chemical including solvents and paints, required for construction shall be stored in designated bonded areas around the site as per MSDS.
6. 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. Subcontractor shall use appropriate MSDS for clean-up technique. Subcontractor shall be responsible for the cleanliness of their own areas.
7. Subcontractor 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 BHEL accordingly so that reasonable & practicable precautions can be taken to protect other persons who may be affected.
8. It is imperative on the part of the subcontractor to join and effectively contribute to environmental protection measures such as tree plantation and towards social causes and maintaining good relations with local populace.
9. The subcontractor shall carry out periodic air and water quality check and illumination level checking in respective area of work place and take suitable control measure to maintain the same as per applicable laws / standards

### 13.3.1 WASTE MANAGEMENT

1. Subcontractor shall take suitable measures for waste management and fulfilling requirements of environment related laws/legislation as a part of normal construction activities.
2. 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.
3. Details of E-Waste, Hazardous Waste, shall be submitted to BHEL as per Format No. HSEP: 14-F18 and HSEP: 14-F19 respectively

#### 13.3.1.1 BINS AT WORK PLACE

1. Sufficient rubbish bins shall be provided close to workplaces.
2. Bins should be painted yellow and numbered.
3. Sufficient nos. of drip trays shall be provided to collect oil and grease.
4. Sufficient qty. of broomsticks with handle shall be provided.
5. Adequate strength of employees should be deployed to ensure daily monitoring and service for waste management.

#### 13.3.1.2 STORAGE AND COLLECTION

1. Different types of rubbish/waste should be collected and stored separately.



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2. Paper, oily rags, smoking material, flammable, metal pieces should be collected in separate bins with close fitting lids.
3. Rubbish should not be left or allowed to accumulate on construction and other work places.
4. Do not burn construction rubbish near working site.

### 13.3.1.3 SEGREGATION

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

### 13.3.1.4 DISPOSAL

1. Sufficient containers and scrap disposal area should be allocated.
2. All scrap bin and containers should be conveniently located.
3. Provide self-closing containers for flammable/spontaneously combustible material.
4. Keep drainage channels free from choking.
5. Make schedule for collection and disposal of waste.

### 13.3.1.5 WARNING AND SIGNS

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

## 13.4 HOUSEKEEPING

1. Keeping the work area clean/ free from debris, removing unused scaffoldings, scraps, insulation/ sheeting wastage /cut pieces temporary structures, packing woods etc. will be in the scope of the subcontractor.
2. Such cleaning has to be done by subcontractor within quoted rate, on daily basis by dedicated identified groups equipped with all require PPEs and training. The details of housekeeping group shall be provided to BHEL.
3. 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.
4. Pests, such as beehives etc. shall be periodically removed in a humane fashion
5. **Following are to be taken care of on daily basis.**
  - i. All surplus earth and debris are removed/disposed of from the working areas to identified locations.
  - ii. Unused/Surplus cables, steel items and steel scrap lying scattered at different places /elevation within the working areas are removed to identify locations.
  - iii. All wooden scrap, empty wooden cable drums and other combustible packing materials, shall



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be removed from workplace to identified locations. 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

- iv. Access and egress (stair case, gangways, ladders etc.) path should be free from all scrap and other hindrances.
- v. Workmen shall be educated through tool box talk about the importance of housekeeping and encourage not to litter.
- vi. 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.
- vii. Fabricated steel structures, pipes & piping materials shall be stacked properly.
- viii. 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.
- ix. Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas

### 13.5 TRAFFIC MANAGEMENT

#### 13.5.1 SAFE WORKPLACE TRANSPORT SYSTEM

1. Traffic routes in a work place shall be suitable for the persons or vehicles using them.
2. Traffic routes for pedestrians and vehicles shall be clearly demarcated and indicated
3. Traffic routes shall never intersect the area of work and shall not endanger the site personnel
4. For internal traffic, lines marked on roads / access routes and between buildings shall clearly indicate where vehicles are to pass.
5. Temporary obstacles shall be brought to the attention of drivers by warning signs / hazard cones.
6. Power cables shall be maintained at a minimum height above ground as specified in Indian Electricity Act & Rules.
7. Sensible speed limits shall set and clearly displayed. Painted Speed ramps preceded by a warning signs or marker are necessary for stretches of roads exceeding 50 meters.
8. 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.
9. Safest route shall be provided between places where vehicles have to call or deliver.
10. Avoid vulnerable areas/items such as fuel or chemicals tanks or pipes, open or unprotected edges and structures likely to collapse
11. Safe areas shall be provided for loading and unloading of material. Loading / Unloading Permit shall be taken from BHEL prior to any significant loading / unloading activity
12. Avoid sharp or blind bends. If this is not possible hazards should be indicated e.g. blind corner.
13. Ensure road crossings are minimum and clearly signed.
14. Entrance and gateways shall be wide enough to accommodate a second vehicle without causing obstruction.
15. Forklift trucks shall not pass over road hump unless of a type capable of doing so.



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16. Overhead electric cable, pipes containing flammable hazardous chemical shall be shielded by using goal posts height gauge posts or barriers.
17. The height of Power cables above areas of movement shall conform to Indian Electricity Rules
18. Road traffic signs shall be provided on prominent locations for prevention of accidents and hazards and for quick guidance and warning to employees and public.
19. Safety signs shall be displayed as per the project working requirement and guideline of the state in which project is done.
20. 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.

### **13.5.2 TRAFFIC ROUTE FOR PEDESTRIANS**

1. Where traffic routes are used by both pedestrians and vehicles road shall be wide enough to allow vehicles and pedestrians safely.
2. 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.
3. Where pedestrian and vehicle routes cross, appropriate crossing shall be provided.
4. Where crowd is likely to use roadway e.g. at the end of shift, stop vehicles from using them at such times.
5. Provide high visibility clothing for people permitted in delivery area.

### **13.5.3 WORK VEHICLES**

Work vehicles shall be as safe stable efficient and roadworthy as private vehicles on public roads. Subcontractors shall ensure that drivers are suitably trained and have valid license and experience for the designated class of vehicle. All vehicle e.g. heavy motor vehicle forklift trucks dump trucks mobile cranes shall ensure that the work equipment conforms to the following:

1. A high level of stability.
2. A safe means of access/egress.
3. Suitable and effective service and parking brakes.
4. Windscreens with wipers and external mirrors giving optimum all round visibility.
5. Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
6. Provision of seat belts.
7. Guards on dangerous parts.
8. Driver protection - to prevent injury from overturning and from falling objects/materials.
9. Driver protection from adverse weather.
10. No vehicle shall be parked below HT/LT power lines in conformance to Indian Electricity Act & Rules.
11. Valid Pollution Under Control certification for all vehicles





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### 13.5.4 DAILY CHECKS BY DRIVER

There should also be daily safety checks containing below mentioned points by the driver before the vehicle is used. Subcontractors should ensure that drivers carry out these checks as a minimum.

Brakes	Mirrors	Warning signals
Tires	Windscreen waters	Specific safety system i.e. control interlocks
Steering	Wipers	

### 13.5.5 TRANSPORTATION OF PERSONNEL AND MATERIALS BY VEHICLES

1. 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.
2. 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.
3. All overhangs shall be made clearly visible and restricted to acceptable limits
4. Load shall be checked before moving off and after traveling a suitable distance.
5. 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.
6. Warning signs shall be displayed during transportation of material.
7. All vehicles used by Subcontractor shall be in worthy condition and in conformance to the Land Transport requirement

### 13.5.6 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.

### 13.6 EMERGENCY PREPAREDNESS AND RESPONSE

1. Subcontractor shall develop Emergency preparedness and response capability and Emergency Response Team as per [HSEP06: HSE Procedure for Emergency Preparedness and Response](#)
2. Availability of adequate number of first aiders and fire warden shall be ensured
3. 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 and communicate the same to BHEL.
4. Assembly point shall be earmarked and access to the same from different location shall be shown
5. Fire exit shall be identified and pathway shall be clear for emergency escape.
6. Appropriate type and number of fire extinguisher shall be deployed as per Clause No. 13.2.11 and validity shall be ensured periodically through inspection
7. Adequate number of first aid boxes shall be strategically placed at different work places to cater





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- to all emergency needs. Holder of the first aid box shall be identified on the box itself who will have the responsibility to maintain the same.
8. First aid center shall be developed at site with trained medical personnel and ambulance
  9. Emergency contact numbers of the site shall be displayed at prominent locations.
  10. Tie up with fire brigade shall be done in case customer is not having fire station.
  11. Tie up with hospital shall be ensured in order to ensure the availability of following services to victims quickly without wasting precious time:
    - a. Intensive Care Unit with Ventilator and other necessary life support systems
    - b. Facility of specialized Orthopedic Surgery – in case of fracture / amputation
    - c. Facility of specialized brain / neuro surgery – in case of head trauma
    - d. Facility of specialized burn unit / ward – in case of Fire / burn injury
    - e. and other facilities as per requirement at site location
- In case tie up with multiple hospitals is required to cover all possible accidents, same shall be done. The list of facilities to be regularly checked and updated.
12. A detailed emergency services (Fire / Medical etc.) tie up plan shall be submitted to BHEL in monthly report Format No. HSEP:14-F05
  13. Mock drill shall be conducted on different emergencies periodically to find out gaps in emergency preparedness and taking necessary corrective action

### 14 HSE INSPECTION

Inspection on HSE for different activities being carried out at site shall be done to ensure compliance to HSEMS requirements. The subcontractor shall maintain necessary safety equipment as applicable, to enable inspection personnel/agency perform 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.

The requirements of respective work permits are to be ensured by respective supervisors, safety personnel and area in-charges. In addition, the formats & checklists as per Clause 21 of this document provided by BHEL shall be used for inspection by Safety personnel (as a minimum), and records of inspection to be maintained. BHEL shall reserve the right to modify any Format in this document or introduce additional checklists / formats to ensure regular inspection of all equipment as per requirement.

#### 14.1 DAILY HSE CHECKS

Both the Site Supervisors and HSE Supervisors 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:



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### 1. Height Work:

- Safe, barricaded platform
  - PPEs
  - Proper method
  - Awareness
- Personal Safety wears & gear compliance.
  - Complying with site safety rules and permit-to-work (PTW).
  - Positions and postures of workers.
  - Use of tools and equipment etc. by the workers.
  - The inspection shall 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.

### 14.2 INSPECTION OF HEIGHT WORKING

- Any kind of height work (above 2 meters) shall not be carried out without active physical supervision by concerned supervisor or safety personnel. All non-conformances related to height work shall be handled on priority and closed immediately after halting the work.
- A roster of personnel deployed for inspection of height work and other critical activities shall be prepared and submitted to BHEL in monthly report Format No. HSEP:14-F05, in order to ensure effective supervision at all times
- Inspection on height working shall be conducted **daily** by supervisors before start of work to ensure safe working condition including provision of:

a. Fall arrestor	d. Fencing and barricading	g. Proper scaffolding with valid
b. Lifelines	e. Warning signage	Tags, access and egress.
c. Safety nets	f. Covering of opening	h. Illumination

- Inspection on height working shall be conducted once in a week by HSE officer as per
- Format no. HSEP: 14-F10.
- Medical fitness, including vertigo test of height worker shall be ensured.
- Height working shall not be allowed during adverse weather.

### 14.3 INSPECTION OF PPE

PPEs shall be inspected by HSE officer at random once in a week as per Format no. HSEP: 14-F06 for compliance to standard and provisions and any adverse observation shall be recorded in the PPE register.

### 14.4 INSPECTION OF T&Ps

- All T& Ps being used at site shall be inspected by HSE officer once in a month as per specific Formats in this document, or (if not available) general Format no. HSEP: 14-F07 for its healthiness and maintenance.
- A master list of T&Ps and validity of their inspection certificates shall be maintained by each agency and details shall be submitted to BHEL in monthly format no. HSEP:14-F05.
- The T&Ps which require third party inspection shall be checked for its validity during inspection.



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The third party test certificate should be accompanied with a copy of the concerned competent person's valid qualification record. BHEL shall be given advance intimation of Third Party Inspection. BHEL shall associate with Inspection as per discretion.

### **14.5 INSPECTION OF CRANES AND WINCHES**

1. 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.
2. Cranes and Winches shall be inspected by HSE officer once in a month as per Format no. HSEP: 14-F08 & F09 for healthiness, maintenance and validity of third party inspection.
3. The date of third party inspection and next due date shall be painted on cranes and winches.
4. The operators/drivers shall be authorized by sub-contractor based on their competency and experience and shall carry the I-card.
5. 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.

### **14.6 INSPECTION ON WELDING AND GAS CUTTING OPERATION**

1. Supervisor shall ensure that no flammable items are available in near vicinity during welding and gas cutting activity.
2. Gas cylinders shall be kept upright.
3. Use of Flash back arrestor shall be ensured at both ends.
4. Inspection during welding and gas cutting operations shall be carried out by HSE officer once a month as per Format no. HSEP: 14-F11.
5. Use of fire blanket to be ensured to avoid falling of splatters during welding or gas cutting operation at height.
6. Availability of fire extinguisher in vicinity shall be ensured.

### **14.7 INSPECTION ON ELECTRICAL INSTALLATION / APPLIANCES**

1. Ensure proper earthing in electrical installation
2. Use of ELCB at electrical booth
3. Electrical installation shall be properly covered at top where required
4. Use appropriate PPEs while working
5. Use portable electrical light < 24 V in confined space and potentially wet area.
6. Monthly inspection shall be carried out as per Format no. HSEP: 14-F12.

### **14.8 INSPECTION OF ELEVATOR**

1. Elevators shall be inspected by concerned supervisors once in a week as per Format no. HSEP: 14-F13.
2. All elevators shall be inspected by competent person and validity shall be ensured.
3. The date of third party inspection and next due date shall be painted on elevator.



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### 14.9 MONTHLY SITE INSPECTION

Subcontractor shall carry out monthly HSE inspection of all work areas as per Format No. HSEP:14-F20 and submit to BHEL

### 14.10 NON-CONFORMITY HANDLING:

Any serious non-conformances identified during inspection observed shall be addressed immediately.

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 serious non-conformances, work to be allowed to resume.

All non-conformances & safety violations to be recorded and closed in a time bound manner.

## 15 HSE PERFORMANCE

HSE performance of subcontractor shall be monitored as per BHEL criteria, based on which, marks will be awarded. Marks can be used to evaluate and rate the contractor as per BHEL internal systems

HSE performance of the subcontractor shall be monitored as per the following parameters: (For each contract-wise package). **Periodicity:** RA Bill period

Sl. No.	Parameters of measurement	Ref Clauses	Weightage	Actual
1	Availability of safety officers at site – absence up to 15% permissible. Score proportionately gets reduced with higher rate of absence. Availability to be reckoned from start date of manpower mobilization	7.1	10	
2	Attendance by the safety officer and site CM (as applicable) in the meeting convened by BHEL	20	5	
3	Level of compliance w.r.t decisions taken in previous meetings/audit/inspection/as reported.	-do-	5	
4	Timely submission of monthly report on safety in the prescribed format	11	3	
5	Timely reporting any incident including near-miss to BHEL /Customer/statutory authority (if required) and submission of investigation report of all LTIs/	12	10	



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	Major Property Loss incident and HSE events			
6	Degree of PPE compliance, Fall protection arrangements and safety net coverage	8.3, 14	15	
7	Level of compliance w.r.t safety rules	13,14	25	
8	Availability of proper first-aid facility , ambulance, hygienic labor colony and other adequate labor welfare initiatives, conducting of health check-up as per BOCW requirements	8	6	
9	Conducting induction training, skill training, tool box meeting, mock-drills, HSE Promotion, Emergency Preparedness and Response. Participation in BHEL training also counted	9.0	6	
10	Level of House-keeping, Environmental Control	13.3, 13.5	10	
11	Level of general illumination	8.4.11	5	
<b>A</b>	<b>TOTAL Obtained</b>		100	

Penalty score:

- i. For each fatality: -10
- ii. For each Major Incident: -07

NET TOTAL score will be arrived after deducting penalty score from Total score.

Subcontractor shall make available all data required for evaluation to BHEL as and when demanded.

- 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.
- 1.5% of running bill shall be cleared subject to certification of desired safety performance by BHEL

### **16 HSE PENALTIES FOR NON-COMPLIANCE**

- 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.
- The applicable penalties for HSE violations are given in Format No. HSEP14-F14 of this document



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3. The list of non-compliances given in above format is not exhaustive. The BHEL site in-charge has liberty to impose a penalty for any other non-compliance and incidents of any nature.
4. If principal customer or statutory and regulatory bodies impose penalty on ground of statutory non-compliance or non-compliance of HSE rules by the subcontractor or any incident of any nature including fatality or permanent disability, the same shall be passed on to the subcontractor with appropriate overhead
5. The penalty amount shall be recovered from subcontractors from the RA Bill, otherwise Final bill.

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### 17 COMPENSATION TO ACCIDENT VICTIMS

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1. BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life / permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below.
  - b. **Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.
  - c. **Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing/ operation and works incidental thereto at BHEL factories/ offices and precincts thereof, project execution, erection and commissioning, services, repairs and maintenance, trouble shooting, serving, overhaul, renovation and retrofitting, trial operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises! Project Sites.
  - d. **Compensation in respect of each of the victims:**
    - i. In the event of death or permanent disability resulting from Loss of both limbs: Rs. 10,00,000/- (Rs. Ten Lakh)
    - ii. (ii) In the event of other permanent disability: Rs. 7,00,000/- (Rs. Seven Lakh)
  - e. **Permanent Disability:** A disablement that is classified as a permanent total disablement under the proviso to Section 2 (I) of the Employee's Compensation Act, 1923. "
2. In addition to above, contractor shall provide appropriate compensation to victims of major and fatal incidents as per Employee Compensation Act, 1923, ESIC Act, 1948 or as per any existing Acts and guidelines



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### 18 INTERNAL & EXTERNAL HSE AUDITS

1. Subcontractor shall extend full co-operation and maintain necessary documents & records as required by Internal & External HSE Audit carried out by BHEL. / Third Party
2. All non-conformities and observations on HSE shall be disposed of-by subcontractor in a time bound manner as detailed in Audit Report.
3. All required corrective actions shall be taken by the subcontractor in order to avoid recurrence

### 19 OTHER REQUIREMENTS

1. In case of any delay in completion of a job due to mishaps attributable to lapses by the subcontractor, BHEL shall have the right to recover cost of such delay from the payments due to the subcontractor, after holding an appropriate enquiry and notifying the subcontractor suitably.

#### 2. RISK & COST:

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 as per contractual requirements, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.

3. 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, favourably consider to reward the subcontractor suitably for the performance.
4. The subcontractor shall take all measures at all the sites of work to protect all persons from incidents and shall be bound to bear the expenses of every suit, action or other proceeding of law that may be brought by any persons for injury sustained, death or damage to environment





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owing to neglect of the HSE precautions by the subcontractor; and shall be liable to pay any such persons such compensation, should such claim proceeding be filed against BHEL.

The subcontractor hereby agrees to indemnify BHEL against the same.

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## 20 HSE REVIEW

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BHEL shall hold HSE review meeting every month or as per requirement in order to discuss and resolve HSE issues of site and improve HSE performance. It will also discuss the incidents occurred since previous meeting, its root cause and Corrective action. The indicative agenda is given below:

1. Implementation of earlier MOM
2. HSE performance review
3. HSE inspection review w.r.t non-conformances observed and their status
4. HSE audit and CAPA
5. HSE training conducted and requirement
6. Health check-up camp
7. HSE planning for the erection and commissioning and installation activities in the coming month
8. HSE reward and promotional activities
9. HSE data analysis and improvement – Data analyzed will include non-conformances closed and pending, incident data, training data etc.

Subcontractor shall ensure presence of site in-charge, all package in-charges and safety officers, as communicated by BHEL in the meeting.

Subcontractor shall take requisite actions as per record notes and as decided in the meeting, in a time bound manner and submit compliance report to BHEL.



**POWER  
SECTOR**

## HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATIONS (SECTION-A)

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### 21 FORMATS USED

This is minimum list of Formats to be used for reporting by the subcontractor. Other Formats are indicated in respective HSE Procedures, Work Permits, OCPs or as specified by BHEL. The medium of reporting can be hard / soft as indicated by BHEL.

BHEL can modify these Formats or introduce new Formats to the extent necessary to get the desired performance data of all HSE activities.

SN	Format Name	Format No.	Frequency of check	Rev
1	Work at Height Permit	HSEP:14-FP01	Before start of work and regularly thereafter as per Permit conditions	00
2	Hot Work Permit	HSEP:14-FP02		00
3	Confined Space Work Permit	HSEP:14-FP03		00
4	Excavation Work Permit	HSEP:14-FP04		00
5	Radiation Work Permit	HSEP:14-FP05		00
6	Lifting Activity Work Permit	HSEP:14-FP06		00
7	Lockout-Tagout Work Permit	HSEP:14-FP07		00
8	Inspection of First Aid Box	HSEP:14-F01	Weekly	00
9	Health Check Up	HSEP:14-F02	With new Induction & as per requirement thereafter	00
10	HSE Induction / Regular / On-the-Job Training	HSEP:14-F03	With new Induction & as per requirement thereafter	00
11	Tool Box Talk	HSEP:14-F04	Daily before job start	00
12	Site HSE Report	HSEP:14-F05	Monthly	00
13	PPE Inspection	HSEP:14-F06	Weekly	00
14	PPE Issue and Receipt	HSEP:14-F06A	With new Induction	
15	Inspection of T&Ps (General)	HSEP:14-F07	Monthly / As per requirement	00
16	Inspection of Cranes	HSEP:14-F08	Monthly / As per requirement	00
17	Inspection of Winches	HSEP:14-F09	Monthly / As per requirement	00
18	Inspection of Height Working	HSEP:14-F10	Daily / As per requirement	00
19	Inspection on Welding & Gas Cutting	HSEP:14-F11	Weekly / As per requirement	00
20	Inspection on Electrical Installation	HSEP:14-F12	Weekly / As per requirement	00
21	Inspection on Elevator	HSEP:14-F13	Weekly / As per requirement	00
22	HSE Penalty	HSEP:14-F14	-	00
23	Initial Verification of PPE's & Lifting Tools & Tackles	HSEP:14-F15	As and when new PPEs and T&Ps are received	00
24	Inspection of Labor Colony	HSEP:14-F16	Monthly / as per requirement	00
25	Recording of First Aid Injuries	HSEP:14-F17	As and when such injuries occur	00
26	E-waste Handled / Generated	HSEP:14-F18	Half Yearly	00
27	Hazardous Waste at the Facility	HSEP:14-F19	Half Yearly	00
28	HSE Checklist-cum-Compliance Report	HSEP:14-F20	As per Audit Calendar	00
29	Illumination Levels	HSEP:14-F21	Weekly / As per requirement	00
30	Incident Reporting	HSEP:14-F22	-	00
31	Incident Recording	HSEP:14-F23	-	00



HSEP:14-FP01

<b>WORK AT HEIGHT PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1	All workers on job are competent and medically fit (No Height Phobia) for working at height		
2	Hazards in the vicinity are identified, controlled and communicated to the worker.		
3	Scaffolding soundness inspected is available for use with valid tag		
4	Work platform is not made of bamboo or weak material. Barricading is available with Top, Mid Rails and Toe Guard.		
5	Working platform is clean without any unwanted material. Floor openings are covered.		
6	Access and exit to workplace are safe, marked and without obstruction.		
7	Adequate lighting provided (for dark hours) as per applicable lux standards (Refer HSEP:13)		
8	Safety nets are provided below working area.		
9	Area below the working platform has been cleared of all activity		
10	Ladders have been secured, inspected and provided as per BHEL standard/contract.		
11	Horizontal life lines are provided to cater to design specification of 2300 kg per person.		
12	Safety harness with life line support/ fall arrester are checked and available in working condition		
13	Safety shoes (non-slip), Helmet with chin strip available with employees		
14	Visible Signboards provided on working platforms in workers' understandable language		
15	All lifting / tightening tools, hand tools/equipment checked and in good condition		
16	ELCB provided for Electrical connections individually. Electrical cable, welding Hose/Compressed air hose properly secured and laid down without obstruction. Earth resistance is OK.		
17	Crane / Winch / Hydra operator is qualified and experienced		
18	Emergency response team & Medical Facilities available. Work area is cordoned off.		
19	Job Safety Analysis Submitted		
20	Additional Permits to be taken (Please specify & attach):		

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (Sub-Contractor):</b>	
Signature:	
Name:	Designation:

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Package-in-charge (BHEL):</b>	
Signature:	
Name:	Designation:

Verified by Customer Representative (if applicable), Name: _____	Sign: _____	Date: _____	Time: _____
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(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Work at Height Permit No. & Date: \_\_\_\_\_

### Daily Work Area Condition Endorsement

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

### Permit Extension Beyond Initially Requested Hours

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6							

### TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL	Site HSE Engineer, BHEL
Signature:	Signature:
Name:	Name:

### General Instructions:

1	This Permit is required for working at height of 2 mtr. and above or above excavation of 2 mtr or deeper.
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work must be clearly indicated by the permittee.
4	Terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day only after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work at height, height phobia needs to be ascertained and proper fitness certificate to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b>
	Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.,



HSEP:14-FP02

**HOT WORK PERMIT**

Permit No. &amp; Date

Project &amp; Unit:

Emergency Contact Nos:

BHEL Sub-contractor:

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1.	Welder is trained and qualified with good attendance in on-the-job training		
2.	Area ensured safe and free from all hazards (explosives etc.) with barricading and safe inlet / exit		
3.	Proper ventilation and lighting provided (in case of dark hours).		
4.	Gas hoses are in good condition and not cut / leaking		
5.	Pressure gauges/Flash back arrestor (at both ends) provided and in working condition.		
6.	Gas pressure in cylinder is within limits and hydraulic test certificate is available		
7.	Gas cylinders are stacked vertically and not below the welding / cutting area. Regulator key is available with cylinder. Gas cylinders covered with shields to prevent falling splinters.		
8.	Power supply to welding machine is through ELCB of 30 mA rating, which is tested and found ok; Earthing is tested and found OK		
9.	Welding machine input/output cables, welding holder and weld return clamp (Holder) are insulated and in good condition.		
10.	In case of welding in enclosed / confined spaces, the integrity of the structure and supports are ensured, Gas Testing done and evacuation system ensured in place		
11.	Emergency STOP buttons are in working condition. Welder /Helper knows how to operate it.		
12.	Welder & Fitter trained to connect ground/work return clamps (Holder) to work place prior to energization of welding machine.		
13.	Personal Protective equipment Minimum applicable: safety helmet, safety goggles, welding helmet, safety (rubber) shoes, leather gloves, long sleeve and nose mask -provided		
14.	In case of pits, water removed from the pit and wood/rubber insulation provided.		
15.	Safety signboards / cautions are in place.		
16.	Adequate and Suitable nos. of applicable firefighting extinguisher provided.		
17.	Nearby combustible material removed. Housekeeping done.		
18.	All workers explained about the hazards		
19.	First aid in attendance.		
20.	Any other Precautions or Permits required (Height Work, Confined Space etc.), give details and attach		

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>
Signature:
Name: _____ Designation: _____

<b>Site Safety Officer (Sub-Contractor):</b>
Signature:
Name: _____ Designation: _____

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>
Signature:
Name: _____ Designation: _____

<b>Site Safety Officer (BHEL):</b>
Signature:
Name: _____ Designation: _____

<b>Package-in-charge (BHEL):</b>
Signature:
Name: _____ Designation: _____

Verified by Customer Representative (if applicable), Name: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Hot Work Permit No. & Date: \_\_\_\_\_

### Daily Work Area Condition Endorsement

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

### Permit Extension Beyond Initially Requested Hours

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6.							

### TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL	Site HSE Engineer, BHEL
Signature:	Signature:
Name:	Name:

### General Instructions:

1	This Permit is required for all kinds of Hot Work eg. Welding, cutting etc..
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work must be clearly indicated by the permittee.
4	Terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day only after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work, competency and fitness to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b>
	Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.,



HSEP:14-FP03

<b>CONFINED SPACE WORK PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1.	Has the equipment been Isolated from Power/Steam/Air?		
2.	Has the equipment been Isolated from liquid or gases?		
3.	Has the equipment been de-pressurized &/or drained?		
4.	Has the equipment been Blanked/blinded or disconnected?		
5.	Has the equipment been water flushed &/or steamed?		
6.	Whether man ways open and ventilated?		
7.	Whether constant Inert gas flow arranged?		
8.	Whether mechanically ventilated and adequately cooled?		
9.	Whether 24 V lighting provided inside the confined space?		
10.	Whether Radiation sources removed?		
11.	Whether training on confined space provided to the individual / group?		
12.	Whether required PPEs (hand gloves, goggles, face shield, ear plug/muff, protective clothing etc.) used?		
13.	Whether Safety harness and Lifeline used?		
14.	Whether Dust/Gas/Air Line mask used?		
15.	Whether attendant with SCBA/Air mask available?		
16.	Whether grounded air Exhaust/Blower/ AC provided?		
17.	Whether Personal Gas alarm provided?		
18.	Whether communication Equipment Provided?		
19.	Whether rescue equipment/team available?		
20.	Whether firefighting arrangement done		
21.	Any other Precautions or Permits required (Height Work, Confined Space etc.), give details and attach		

**Declaration:** *All the points mentioned in the above checklist have been checked and found OK***Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	<b>Site Safety Officer (Sub-Contractor):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	<b>Site Safety Officer (BHEL):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____
<b>Package-in-charge (BHEL):</b>	
Signature:	
Name: _____ Designation: _____	

Verified by Customer Representative (if applicable), Name: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)



Confined Space Work Permit No. & Date: \_\_\_\_\_

**Daily Work Area Condition Endorsement**

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

**Permit Extension Beyond Initially Requested Hours**

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6.							

**TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER**

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL		Site HSE Engineer, BHEL	
Signature:		Signature:	
Name:		Name:	

**General Instructions:**

1	This Permit is required for all confined space tasks, where injury can happen due to lack of oxygen, or chances of fire are there due to gas accumulation.
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work must be clearly indicated by the permittee.
4	Terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work, competency and fitness to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b>
	Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.,



HSEP:14-FP04

<b>EXCAVATION WORK PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1	Precautions taken for Underground Electrical Cable		
2	Precautions taken for Under / Above ground sewer/Drinking Water Line		
3	Precautions taken for Underground Telecommunication Line		
4	Precautions taken for Underground Product/Utility Line		
5	Precautions taken for Underground Fire Water Line		
6	Shoring / Shuttering / Sheet piling done to prevent collapse of excavation walls. Strength of Excavation wall ensured at all times		
7	Hard Barricading & Edge Protection provided		
8	Separate Safe Access for Man and Vehicle		
9	Lighting arrangement		
10	Banks Man Provided		
11	Required basic PPEs provided		
12	Slope Cutting/Benching Maintained		
13	Excavated soil / Construction Material / equipment kept away from the edge.		
14	First aid in attendance.		
15	Any other Precautions or Permits required (Height Work, Confined Space etc.), give details and attach		

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (Sub-Contractor):</b>	
Signature:	
Name:	Designation:

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Package-in-charge (BHEL):</b>	
Signature:	
Name:	Designation:

Verified by Customer Representative (if applicable), Name: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Excavation Work Permit No. & Date:

**Daily Work Area Condition Endorsement**

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

**Permit Extension Beyond Initially Requested Hours**

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6							

**TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER**

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL		Site HSE Engineer, BHEL	
Signature:		Signature:	
Name:		Name:	

**General Instructions:**

1	This Permit is required for all excavation tasks 1.22 mtr or deeper
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work must be clearly indicated by the permittee.
4	Terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work, competency and fitness to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b>
	Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.,



HSEP:14-FP05

<b>RADIATION WORK PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1.	All the persons at the site informed/removed from the area.		
2.	Area around the source of radiation cordoned off with the rope/chord.		
3.	Radiation warning symbol/boards displayed around radiography work on rope/chord.		
4.	Radiographer worn radiation badges during testing and is within safe limits.		
5.	Radiography camera and carrying case box having radiation symbol.		
6.	Radiation Survey Meter is in working condition, calibrated & within validity period.		
7.	Radiographer has valid certificate from BARC.		
8.	Blinking light provided on road during radiography (in dark hours).		
9.	Proper required Illumination provided		
10.	Safe access and working platform provided to conduct RT work		
11.	All the persons involved in Radiography work are aware of the hazard of radiation		
12.	Any other Precautions or Permits required (Height Work, Confined Space etc.), give details and attach		

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (Sub-Contractor):</b>	
Signature:	
Name:	Designation:

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Site Safety Officer (BHEL):</b>	
Signature:	
Name:	Designation:

<b>Package-in-charge (BHEL):</b>	
Signature:	
Name:	Designation:

Verified by Customer Representative (if applicable), Name:	Sign:	Date:	Time:
--	-------	-------	-------

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Radiation Work Permit No. & Date: \_\_\_\_\_

### Daily Work Area Condition Endorsement

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

### Permit Extension Beyond Initially Requested Hours

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6.							

### TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL		Site HSE Engineer, BHEL	
Signature:		Signature:	
Name:		Name:	

### General Instructions:

1	This Permit is required for all activities in which there is danger of exposure to harmful radiation
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work must be clearly indicated by the permittee.
4	Terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work, competency and fitness to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b>
	Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.,



HSEP:14-FP06

<b>LIFTING ACTIVITY WORK PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

No.	Item	Yes	Not required / Remarks
1.	Crane used for lifting activity TPI tested, certified and approved for rated lifting		
2.	All lifting tackles, gears/appliances are tested and certified for lifting works.		
3.	Crane operator is trained and competent for lifting operation.		
4.	Lifting sling/ belt is protected against sharp edge of the jobs to be lifted.		
5.	Lifting hook is properly latched to prevent material falling over		
6.	Access and exit marked and without obstruction.		
7.	In case of lifting multiple materials at once, same are tied up with strong rope / material		
8.	Area below lifting activity barricaded to prevent movement		
9.	Minimum 2 guidelines have been provided for balancing and guiding jobs to be lifted.		
10.	Periphery area of crane booms as well as lifting job is barricaded and unauthorized/no-entry sign board posted.		
11.	Rigger and signal man is trained and competent for lifting work. Signal is clearly visible to the operator and understood		
12.	No lifting activity to be carried out during lightening, heavy wind/rain. No forecast of these conditions during work period		
13.	If scaffolding to be used during lift, scaffolding with valid tag available for use.		
14.	Add drawing /procedure etc. relevant for the lifting.		
15.	Any other Precautions or Permits required (Height Work, Confined Space etc.), give details and attach		

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	<b>Site Safety Officer (Sub-Contractor):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	<b>Site Safety Officer (BHEL):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____
<b>Package-in-charge (BHEL):</b>	
Signature:	
Name: _____ Designation: _____	

Verified by Customer Representative (if applicable), Name: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Lifting Activity Work Permit No. & Date: \_\_\_\_\_

**Daily Work Area Condition Endorsement**

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

**Permit Extension Beyond Initially Requested Hours**

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6							

**TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER**

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL		Site HSE Engineer, BHEL	
Signature:		Signature:	
Name:		Name:	

**General Instructions:**

1	This Permit is required for all Heavy Lifting Activities that are either / all of the following: 1. Above 50 Tons; 2. Tandem Lifting; 3. Total Load exceeding 75% of capacity of crane; 4. Lift of unusual difficulty or geometry or rigging; 5. Lift over operating Units; 6. Any other Lift as decided by Site HSE / Erection
2	Job Safety Analysis ( <b>JSA</b> ) to be created for every Lift above 5 Tons.
3	This permit must be available at the work site all the times of the work.
4	Location and description of the work, and terms applicable must be clearly indicated by the permittee.
5	This permit shall be endorsed each day after checking all the compliance jointly by the contractor and BHEL safety.
6	Permit shall be issued for not more than <b>7 days</b> including the issue date.
7	Permit shall be returned to the HSE Department of BHEL after completion of the job.
8	Before engaging anybody to work, competency and fitness to be ensured.
9	All safety precautions to be taken as per work site HSE plan.
10	<b>Distribution of copy:</b> Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.





HSEP:14-FP07

<b>LOCKOUT/TAGOUT (LIVE ELECTRICAL MAINTENANCE) WORK PERMIT</b>		Permit No. & Date
Project & Unit:		Emergency Contact Nos:
BHEL Sub-contractor:		

Exact Location of Work: \_\_\_\_\_

Nature / Description of Work: \_\_\_\_\_

Duration of Work Execution \*: From Date: \_\_\_\_\_ to Date: \_\_\_\_\_ Daily from \_\_\_\_\_ hrs. to \_\_\_\_\_ hrs.

Name of Sub-Contractor Performing the Work: \_\_\_\_\_

Name of Sub-Contractor's Site Engineer (Permit Requesting Authority): \_\_\_\_\_ Sign: \_\_\_\_\_

Name of Sub-Contractor's Package In-charge: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_

*The above described work will be done under all the safety precautions mentioned as under during the currency of the Permit.*

Tag No.	Device to be Tagged / Locked I.D. No.	Device Location	Device Position OPEN / CLOSED - ON/OFF	Lock No.	Tag Lock Placed by Name/Sign - Date/Time	Tag / Lock Removed by Name/Sign - Date/Time

**Declaration: All the points mentioned in the above checklist have been checked and found OK****Permit Receiver:**

<b>Site Engineer (Sub- Contractor):</b>	<b>Site Safety Officer (Sub-Contractor):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____

**Permit Issuer:**

<b>Engineer of Concerned Execution Department (BHEL):</b>	<b>Site Safety Officer (BHEL):</b>
Signature:	Signature:
Name: _____ Designation: _____	Name: _____ Designation: _____
<b>Package-in-charge (BHEL):</b>	
Signature:	
Name: _____ Designation: _____	

Verified by Customer Representative (if applicable), Name: \_\_\_\_\_ Sign: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

(\* Permit valid for 7 days, subject to daily renewal, and extension as per overleaf instructions / record formats)

Lockout/Tagout Work Permit No. & Date:

**Daily Work Area Condition Endorsement**

Sl. No.	Date	Signature with Date & Time		Remarks
		Agency Safety	BHEL Safety	
Day 2				
Day 3				
Day 4				
Day 5				
Day 6				
Day 7				

**Permit Extension Beyond Initially Requested Hours**

Sl. No.	Extension Period		Remarks	Signature with Date & Time			
	From..... (Date & Time)	To..... (Date & Time)		Agency Site Engineer	Agency Safety Officer	BHEL Site Engineer (PIA)	BHEL Safety Officer
1.							
2.							
3.							
4.							
5.							
6							

**TO BE SIGNED BY THE BHEL HSE & EXECUTION AFTER THE WORK IS OVER**

Permit is here by returned after completing the job & ensuring safe removal of men and material.

Site Engineer, BHEL		Site HSE Engineer, BHEL	
Signature:		Signature:	
Name:		Name:	

**General Instructions:**

1	This Permit is required for all maintenance and erection activities with danger of electrocution from Live Electric Power
2	This permit must be available at the work site all the times of the work.
3	Location and description of the work, and terms applicable must be clearly indicated by the permittee.
4	This permit shall be endorsed each day after checking all the compliance jointly by the contractor and BHEL safety.
5	Permit shall be issued for not more than <b>7 days</b> including the issue date.
6	Permit shall be returned to the HSE Department of BHEL after completion of the job.
7	Before engaging anybody to work, competency and fitness to be ensured.
8	All safety precautions to be taken as per work site HSE plan.
9	<b>Distribution of copy:</b> Original- Permittee, Duplicate –Department HOS, Contractor, Triplicate - Site HSE Dept.

**POWER SECTOR****Inspection of First Aid Box**

FORMAT NO: HSEP:14-F01

REV NO.: 00

PAGE NO. 01 OF 02

Name of Site :	
Name of Sub-Contractor:	
Inspected by :	
Date of Inspection:	

Number of employees in the site: - \_\_\_\_\_

Sl. No.	Item	No. Available	Remarks
1	No. of small sterilized dressings		
2	No of medium sized sterilized dressings		
3	No of large sized sterilized dressings.		
4	No of large sized sterilized burn dressings		
5	No of (15 grams) packets sterilized cotton wool		
6	No of pieces of sterilized eye pads in separate sealed packets.		
7	No of roller bandages 10 cm wide.		
8	No of roller bandages 5 cm wide.		
9	Whether tourniquet available		
10	Whether supply of suitable splints available.		
11	No of packets of safety pins.		
12	Whether kidney tray available		
13	Whether sufficient number of eye wash bottles, filled with distilled water or suitable liquid, clearly indicated by a distinctive sign which shall be visible at all times, available.		
14	Whether 4%-xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops available.		
15	Whether (60ml) bottle containing a two percent alcoholic solution of iodine available		
16	Whether (two hundred ml) bottle of mercurochrome (2 per cent) solution in water available.		
17	Whether 120ml bottle containing Sal volatile having the dose and mode of administration indicated on the label,		
18	Whether roll of adhesive plaster (6 cm X 1 meter) available		

**POWER SECTOR****Inspection of First Aid Box**

FORMAT NO: HSEP:14-F01

REV NO.: 00

PAGE NO. 01 OF 02

Sl. No.	Item	No. Available	Remarks
19	No of rolls of adhesive plaster (2 cm X 1 meter)		
20	Whether snake bite lancet available.		
21	Whether (30 grams) bottle of potassium permanganate crystals available.		
22	Whether a pair scissors available		
23	Whether copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labor Institutes, Government of India available.		
24	Whether bottle containing 100 tablets (each of 5 grains) of aspirin available		
25	Whether Ointment for burns available		
26	Whether bottle of a suitable surgical anti-septic solution available		
27	Whether List of Contents pasted on First Aid Box along with respective expiry dates		

Signature of Subcontractor's Site I/C

Date:

**POWER SECTOR****Health Check-Up**

FORMAT NO: HSEP:14-F02

REV NO.: 00

PAGE NO. 01 OF 02

Name of Site :	
Name of Sub-Contractor:	
Name of Employee :	
Age:	

History Of Past Illness	H/O Epilepsy:
	H/O Drug Allergy:
	H/O Diabetics/ Hypertension:
	H/O Unconsciousness:
Personal History	

**EXAMINATION****OBSERVATION****General Physical Examination**

Height		
Weight		
BMI		
Built And nourishment		
Pallor		
Temperature		
Chest Expansion	Inspiration	Expansion
Lymph Node Enlargement		
Upper Limbs Strength & Function		
Lower Limbs Strength & function		
Spine Adequately flexible for the job concerned (Yes/No)		
Mental alertness and stability with good eye, hand and foot co-ordination.		

**Ear, Nose, Throat**

Ear / Hearing	
Nose	
Throat	
<b><u>Vision</u></b>	
Left Eye	Right Eye

**POWER SECTOR****Health Check-Up**

FORMAT NO: HSEP:14-F02

REV NO.: 00

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EXAMINATION		OBSERVATION	
<b><u>Cardiovascular System Examination</u></b>			
Inspection			
Palpation	Pulse	BP	
Auscultation (Heart Sounds)			
<b><u>Respiratory System</u></b>			
Inspection	Respiratory Rate		
Palpation:			
Percussion			
Auscultation (Breath Sounds)			
<b><u>Examination of Abdomen</u></b>			
Inspection			
Palpation			
Auscultation (Bowel Sounds)			
<b>Any Other</b>			
<b>Clinical Impression</b>			

Signature of the examining doctor

Date:

**POWER SECTOR****HSE Induction / Regular / On-the-Job  
Training Records**

FORMAT NO: HSEP:14-F03

REV NO.: 02

PAGE NO. 01 OF 01

Name of Site :				
Name of Sub-Contractor :				
Date of Training (dd/mm/yyyy) :		Duration (Hrs)		
		From	To	
Name & Details of Trainer:				
Subject of Training	Induction		On-The-Job Training (Give details)	
Name of Training Co-ordinator:				

Sl. No.	Name	Designation	Organization	Signature

I certify that Training has been carried out as per HSEP04: HSE Procedure for Training &amp; Awareness

Signature of Training Coordinator

Date:



**POWER SECTOR****Toolbox Talk**

FORMAT NO: HSEP:14-F04

REV NO.: 00

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Name of Site :	
Sub-Contractors Name :	
Date :	

Topic	Name of person delivered Tool Box Talk	No. of Participants attended	Remarks

Signature of Site I/C of Subcontractor

Date:

**POWER SECTOR****Monthly Site HSE Report**FORMAT NO: HSEP:14-F05  
REV NO.: 00  
Page 01 of 6

Name of subcontractor:	Report Month:

**A) Accidents/Incidents Details: -**

a	Lost time in Accidents	No. of incidents	Man Hours Lost	No. of People Involved	No. of person reported to Govt.		
	For the Month						
	Cumulative						
b	Minor Injuries						
	For the Month						
	Cumulative						
c	Fires	No. of Near-Misses	No. of First- Aid cases	No. of persons injured	No. of equipment damaged	No. of Fire reported Outside	
	For the Month						
	Cumulative						
d	Other mishaps not covered in a, b, c.	No. of Near-Misses	No. of First- Aid cases	No. of persons injured	No. of equipment damaged	Total near misses and First-Aid	
	For the Month						
	Cumulative						

**B) Data for Man-hours worked:**

Details	Value	Remarks if any
No. of people		
Man Hours worked		
O.T. Hours		
Total Man Hours		
Grand Total of man hours worked during the month(A+B)		
Cumulative man-hours (from _____ to _____): ( Since commencing of operations)		

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer

**POWER SECTOR****Monthly Site HSE Report**

FORMAT NO: HSEP:14-F05

REV NO.: 00

Page 02 of 6

**C) Status of Deployment of Work force, Safety Officers/Supervisors & Construction Medical Officer(s) & Electricians:**

Description	Name	Qualification & Experience
Safety Officers		
Safety Supervisors		
Construction Medical Officer		
Nursing Staff.		
Electricians		
Scaffolding Inspectors		
T&P Inspectors		

**D) Status of deployment of manpower for critical HSE activities:**

(All height work and other hazardous activities to be actively supervised by trained personnel. Area to be divided in manageable sections to ensure effective supervision at all times. For example, multiple elevations in a structure can be divided among multiple supervisors)

Activity	Location	Shift Timings	Personnel deployed	Remarks
Height Work	Boiler Unit- (Level 1-3)			
	Boiler Unit- (Level 4-6)			
	ESP			
Housekeeping	Boiler Unit-			
	ESP Unit			
Others				

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer

**POWER SECTOR****Monthly Site HSE Report**

FORMAT NO: HSEP:14-F05

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**E) Lifting Tools, Tackles, Equipment and Pressure Vessels:**

Item	Nos. Deployed	Nos. Tested by competent person	Identification Nos. (Comma separated) (A)	Validities of Test Certificates (Comma separated – corresponding to column A)	Whether internal testing using Color Coding or similar system done
Winches					
Chain Blocks					
Wire Rope Slings					
Man Cages					
D-Shackles					
Air Compressors					
Crawler Cranes					
Mobile Cranes					
Hydra Cranes					
Hydraulic Jack					
Others					

**F) Reverse Horns in Construction Vehicles:**

Item	Nos. Deployed with serial numbers (Comma separated) (A)	Nos. Having Functional reverse horns	Inspection Dates (Comma separated corresponding to column A)
Transit Mixers			
Hydra Cranes			
Dumpers/Trippers			
Backhoes			
Other Vehicles			

**G) ELCBs:**

No. Of ELCBs provided with Serial Nos. (Comma separated) (A)	Nos. Functional	When They were last Tested (Comma separated corresponding to column A)

**H) Electrical Earthing:**

No. Of Earth resources with serial numbers and locations (Comma separated) (A)	Whether Double Earthing provided to all equipment	When they were last tested (Comma separated corresponding to column A)

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer

**POWER SECTOR****Monthly Site HSE Report**

FORMAT NO: HSEP:14-F05

REV NO.: 00

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**I) Fire Extinguishers**

Name & designation of person responsible for maintenance of Extinguishers at different locations : ( Individual subcontractor's Safety Officers).

**A. FIRE EXTINGUISHERS AT ERECTION SITE:**

Type (Add more rows if required)	Sizes	Qty + Serial numbers (Comma separated) (A)	Healthiness – Last checked dates (Comma separated corresponding to column A)	Locations (Comma separated corresponding to column A)
FOAM TYPE				
SODA TYPE				
DRY TYPE (DCP)				
C02 TYPE				

**B. FIRE EXTINGUISHERS AT SITE OFFICES & STORES:**

Type	Size (Add more rows if required)	Qty + Serial numbers (Comma separated) (A)	Healthiness – Last checked dates (Comma separated corresponding to column A)	Locations (Comma separated corresponding to column A)
FOAM TYPE				
SODA TYPE				
DRY TYPE (DCP)				
C02 TYPE				

**J) Tie-Ups with Emergency Services**

Service (Add more rows if required)	Name, location & distance from site	Emergency contact details	Remarks
Hospital with ICU and facilities for orthopedic, neurological etc. trauma			
Fire services			
Others:			

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer

**POWER SECTOR****Monthly Site HSE Report**FORMAT NO: HSEP:14-F05  
REV NO.: 00  
Page 05 of 6**K) Implementation of Checklist, Work Permits:**

Item	Numbers During the Month	Major Deviations

**Note:-** Please attach photocopies of all filled Checklists & Work permits for that month.

**L) Personal Protective Equipment Issued (Extend table for each subcontractor):**

Item	Issued this Month	Nos. Issued up to the Month	Percentage of usage at Site (as per physical verification)
<b>Name of subcontractor:</b>			
Safety Helmet			
Safety Shoes			
Full Body Harness			
Fall Arrestor			
Safety Nets			
Hand Gloves			
Face shield			
Welder shield			
Nose Mask			
Reflective Jacket			
Other PPEs.			

**M) Safety Observations by Subcontractor Executives- Observations package wise:**

Topic	Date Of Programme	No. Of Participants	Level Of Participants

**• Tool-Box talks on Safety:**

Date	Tool Box Talk - No of Participants	Topic	Remarks

**• Safety Induction Trainings:**

Date	Safety Induction No. of Participants	Topic	Remarks

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer

**POWER SECTOR****Monthly Site HSE Report**FORMAT NO: HSEP:14-F05  
REV NO.: 00  
Page 06 of 6**N) Progress of Management Programmes at Site**

SL	Description Of MPs	Annual Plan	Achievement In This Month	Cumulative Achievement
<b>A. Environment Improvement Programme</b>				
1	Plantation of Trees			
2	Installation of Scrap Bins			
3	Chemical Storage & Handling system			
<b>B. Improvement of Working Environment</b>				
4	Increasing LTI free days			
5	Air Quality Monitoring			
6	Water Quality Monitoring			
7	Illumination level Monitoring			

**O) HR Information:**

Designation	Total No. Inducted	Total no. of Induction Balance	Total no. of Gate Pass Issued	Total no. of Gate Pass Balance	Total no. of Gate Pass Cancelled	Medical Checkup Completed	Medical Checkup Balance

**P) Rewards on Account of Good Safety Performance**

Serial Number	Reward Issued to	Details of Reward Issued (Amount etc.)	Brief Reason

**Note:** Photos of Reward Functions to be attached**Q) Other Safety initiatives / Safety Activities conducted (with photos, if any):**

Signature of Subcontractor Site In-charge

Signature of Subcontractor HSE Officer



**POWER SECTOR****Personal Protective Equipment Inspection**

FORMAT NO: HSEP:14-F06

REV NO.: 00

PAGE NO. 01 OF 01

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection:	

Item	Total Checked	Numbers Found in Order	Remarks
Safety Helmet			
Safety Shoes			
Full Body Harness			
Fall Arrestor			
Safety Nets			
Hand Gloves			
Face shield			
Welder shield			
Nose Mask			
Reflective Jacket			
Other PPEs (Specify)			

Signature of Site I/C of Subcontractor:

Date:



## POWER SECTOR

## Format for Register of Issue and Receipt of PPEs

**Site:**

**Subcontractor:**[illegible]

**POWER SECTOR****Inspection Of T&Ps**FORMAT NO: **HSEP:14-F07**

REV NO.: 00

PAGE NO. 01 OF 01

<b>Name of Site :</b>	
<b>Name of Sub-Contractor :</b>	
<b>Date of Inspection :</b>	

Sl.No.	Description	Remarks
1.0	Name of equipment	
2.0	Basic Information of equipment	
2.1	Specification	
2.2	Sr. No. of equipment	
2.3	Make	
2.4	Year of manufacture	
3.0	Major repairs / overhauls(Furnish details of work carried out)	Date(s) of major repair/overhaul
3.1		
3.2		
3.3	Repairs carried out at site	
4.0	Any performance test conducted	Yes/No
5.0	Document Submitted	Yes/No
6.0	Manufacturer's test / guarantee certificate	Available/ Not available
7.0	Performance test	Done/ Not Done
8.0	Acceptance Norms	
9.0	Committee Observations	
10.0	Date of next review (if accepted)	
Signature-Subcontractor HSE Officer		Signature-Subcontractor Site In-charge

**POWER SECTOR****Inspection Of Cranes**

FORMAT NO: HSEP:14-F08

REV NO.: 00

PAGE NO. 01 OF 01

**Name of Site :****Name of Sub-Contractor :****Inspected by :****Date of Inspection:****Crane Reg. No (Make/Model)****Name of Driver/Operator**

Sl.no.	Description	Observation	Measures
1	Valid Driving license		
2	Hook & Hook Latch		
3	Over Hoist limit switch		
4	Boom limit switch		
5	Boom Angle Indicator		
6	Boom limit cutoff switch		
7	Condition of Boom		
8	Condition of ropes		
9	Number of load lines		
10	Size and condition of the slings		
11	Stability of the cranes		
12	Soil Condition		
13	Swing Break And Lock		
14	Proper Break And Lock		
15	Hoist Break And Lock		
16	Boom Break And Lock		
17	Main Clutch		
18	Leakage in Hydraulic Cylinders		
19	Out riggers fully extendable		
20	Tyre pressure		
21	Condition of Battery And Lamps		
22	Guards of moving and rotating parts		
23	Load chart provided		
24	Number and position of pedant ropes		
25	Reverse Horn		
26	Load Test Details		
27	Operator's fitness		
28	Pollution under control certificate		
29	Fire extinguisher of appropriate type.		
30	Training of the operator		

**Signature of Site I/C of Subcontractor:****Date:**

**POWER SECTOR****Inspection Of Winches**FORMAT NO: HSEP:14-F09  
REV NO.: 00  
PAGE NO. 01 OF 01

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection:	

Winch Reg. No (Make/Model) \_\_\_\_\_

Name of Operator \_\_\_\_\_

Sl. No.	Description	YES	NO	NA	Remarks
1	Has the copy of Third Party Inspection certificate been provided in winch machine shed?				
2	Is safe operating instructions displayed near winch?				
3	Is winch machine operator experienced enough to operate the winch machine?				
4	Is the winch machine operated by someone other than the winch machine operator?				
5	Is there guard provided in all moving parts like wheel and motor's shaft?				
6	Will it protect against unforeseen operational contingencies?				
7	Are brakes, clutch and locking arrangement working properly?				
8	Has it been ensured that the guard does not constitute a hazard by itself?				
9	Are the cranks and the connecting rods protected by guardrails?				
10	Is there provision for fully covered shed with wooden plank roof?				
11	Is wire rope free from any kind of damage or wear and tear?				
12	Is split pin provided for the protection of clutch and brake locking arrangement?				
13	Is pulley inspected by competent person and certified before use?				
14	Is pulley free from any wear and tear visually?				
15	Is winch rope barricaded with clipsheet for the protection of rope and person?				
16	Is the wire rope lubricated by cardium oil?				
17	Is there any friction in wire rope which may damage the wire rope rather than the rolling parts?				
18	Is there any oil leakage in the hydraulic system of the winch machine?				
19	Has it been ensured that the guard will not cause discomfort or inconvenience to operator?				
Total NO		Total NA		% Compliance	

Signature of Site I/C of Subcontractor:

Date:

**POWER SECTOR****Inspection of Height Working**

FORMAT NO: HSEP:14-F10

REV NO.: 00

PAGE NO. 01 OF 2

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection:	

Sl. No.	Descriptions	Observation (Yes/No)	Remarks
A. General			
1	All the workers have been explained safe work method?		
2	Adequate illumination has been ensured.		
3	Work area inspected prior to the start of the work.		
4	Is the work area barricaded to prevent fall and platforms are of adequate strength (bamboo, jute / plastic ropes not to be used).		
5	The temporary work platforms & structures for height work including those used in Boiler structures, water walls, ESP, Powerhouse are fully barricaded with railings (as per IS 3696)		
6	Fabricated makeshift arrangements are checked for quality and type of material welding, anchoring etc.		
7	Are floor gaps, permanently covered and barricaded		
8	Area below the work place barricaded, particularly below hot work.		
9	Workers provided with bags /box to carry bolts, nuts and hand tools		
10	Arrangement for fastening hand tools made.		
11	All work platforms ensured to be of adequate strength and ergonomically suitable.		
12	Work at more than one elevation at the same segment is restricted.		
13	An established communication system has been established and explained to the workers.		
B. Access/Egress			
1	Walkways provided with handrail, mid-rail and toe guard?		
2	All checkered plates, gratings properly welded/ bolted?		
3	Are ladders inspected and they are in good condition?		
4	Are ladders spliced?		
5	Are ladders properly secured to prevent slipping, sliding or falling?		
6	Stairs erected above and below 1 tier column for safe access?		
7	Do side rails extend 36" above top landing?		

**POWER SECTOR****Inspection of Height Working**

FORMAT NO: HSEP:14-F10

REV NO.: 00

PAGE NO. 02 OF 2

Sl. No.	Descriptions	Observation (Yes/No)	Remarks
8	Are built up ladders constructed of sound materials?		
9	Are rugs and cleats not over 12" on center?		
10	Metal ladders not used around electrical hazards.		
11	Proper maintenance and storage.		
12	Ladders placed at right slope.		
13	Ladders / staircases welded/ bolted properly.		
14	Any obstruction in the stairs.		
15	Are landing provided with handrails, knee rails, toe boards etc.?		
16	Whether ramp is provided with proper slope.		
17	Proper hand rails / guards provided in ramps.		
<b>C. Housekeeping</b>			
1	Walkways, aisles & all overhead workplaces cleared of loose material.		
2	Is any nut bolt/scrap left on beam/column?		
3	Flammable materials, if any, are cleared.		
4	All the de shuttering materials are removed after de shuttering is done.		
5	Platforms and walkways free from oil/grease or other slippery material.		
6	Collected scrap are brought down or lowered down and not dropped from height.		
<b>D. PPE And Safety Devices</b>			
1	Use of safety helmet, safety belts ensured for all workers		
2	Anchoring points provided at all places of work.		
3	Common lifeline provided wherever linear movement at height is required.		
4	Safety nets are use wherever required.		
5	Proper fall arrest system is deployed at critical workplaces.		
6	Crawler boards/Safety system or works on fragile roof are used.		
7	Is man-lift being used for personnel lifting?		
8	Does man basket / personnel lift system has an independent lifeline and all occupants safety harnesses connected to it with rope grab?		

Signature of Site I/C of Subcontractor:

Date:



**POWER SECTOR****Inspection of Welding and Gas Cutting**

FORMAT NO: HSEP:14-F11

REV NO.: 00

PAGE NO. 01 OF 02

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Welding				
Sl.no.	Description	Y e s	N o	Remarks
1	Is electric connection given through 30 mA ELCB/RCCB to welding m/c?			
2	Is welding machine more than 10 years old?			
3	Is there provision of fuse and is it bypassed?			
4	Is electric cable fitted properly in junction box on m/c?			
5	Is electrical cable free from joints?			
6	Are the joints attached firmly & insulated with tape?			
7	Is double earthing given to body of m/c?			
8	Is the physical condition of the m/c good?			
9	Is ON/OFF switch connected to the m/c is working and in good condition?			
10	Are indication lamps on m/c working?			
11	Is the electrode holder in good condition?			
12	Are the cables of the welding m/c lugged & tight properly?			
13	Is cable to welding machine terminal joint loose / burnt / glowing?			
14	Are return lead connected properly (Rod, Angle, Channels shall not be used)			
	Total No of NO			
	Total No of YES			

Signature of Site I/C of Subcontractor:

Date:

**POWER SECTOR****Inspection of Welding and Gas Cutting**

FORMAT NO: HSEP:14-F11  
REV NO.: 00  
PAGE NO. 02 OF 02

Gas Cutting				
Sl.no	Description	Yes	No	Remarks
1	Are Cylinders kept on trolleys?			
2	Physical condition of Gas cylinders Good?			
3	Is there Oil/Grease on valve of the cylinder?			
4	Are pressure regulators in good condition?			
5	Condition of hose pipe OK?			
6	Are hose pipe clamped with hose clip?			
7	Is flash back arrestor & NRV fitted on torch both for O2 and LPG cylinder?			
8	Is nozzle of the torch cleaned?			
	Total Number of NO			
	Total No of YES			
	% Compliance			

Signature of Site I/C of Subcontractor:

Date:

**POWER SECTOR****Inspection Of Electrical Installation**

FORMAT NO: HSEP:14-F12

REV NO.: 00

PAGE NO. 01 OF 02

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Sr. No.	Contents	Yes/No	Remarks
<b>A</b>	<b>Cable</b>		
1.	Whether the condition of cable is checked?		
2.	Are cables received from other sites checked for insulation resistance before putting them into use?		
3.	Are all main cables taken either underground / overhead?		
4.	Are welding cables routed properly above the ground?		
5.	Are welding and electrical cables overlapping?		
6.	Is any improper joining of cables/wires prevailing at site?		
<b>B</b>	<b>DBs/SDBs</b>		
1.	Is earth conductor continued up to DB / SDB?		
2.	Whether DBs and extension boards are protected from rain / water?		
3.	Whether DB and extension board have separate MCB/ELCB		
4.	Is there any overloading of DBs / SDBs?		
5.	Are correct / proper fuses & CBs provided at main boards and sub-boards?		
6.	Is energized wiring in junction boxes, CB panels & similar places covered all times?		
<b>C</b>	<b>ELCB</b>		
1.	Whether the connections to all equipment are routed through individual ELCBs?		
2.	Is sensitivity of each ELCB maintained at 30 mA?		

**POWER SECTOR****INSPECTION OF ELECTRICAL INSTALLATION**

FORMAT NO: HSEP:14-F12

REV NO.: 00

PAGE NO. 02 OF 02

Sr. No.	Contents	Yes/No	Remarks
3.	Are the ELCB numbered and tested periodically & test results recorded in a logbook countersigned by a competent person?		
<b>D</b>	<b>Grounding</b>		
1.	Is natural earthing ensured at the source of power (main DB at Generator or Transformer)?		
2.	Whether the continuity and tightness of the earth conductor are checked?		
3.	Mention the gauge of the earth conductor used at the site.		
4.	Mention the value of Earth Resistance.		
<b>E</b>	<b>Electrically operated Machines or Accessories.</b>		
1.	Whether the plug top is provided everywhere.		
2.	Are all metal parts of electrical equipment and light fittings / accessories grounded / double earthed?		
3.	Is there any shed or cover for welding machines?		
4.	Are halogen lamps fixed at proper places?		
5.	Are portable power tools maintained as per norms?		
6.	Any other information:		

Signature of Site I/C of Subcontractor:

Date:

**POWER SECTOR****Inspection of Elevator**

FORMAT NO: HSEP:14-F13

REV NO.: 00

PAGE NO. 01 OF 01

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

Sr. No.	Description	Remarks
1.0	Name of equipment	
2.0	Basic Information of equipment	
2.1	Specification	
2.2	Sr. No. of equipment	
2.3	Make	
2.4	Year of manufacture	
3.0	Major repairs/overhauls(Furnish details of work carried out)	Date(s) of major repair/overhaul
3.1		
3.2		
3.3	Repairs carried out at site	
4.0	Any performance test conducted	Yes/No
5.0	Document Submitted	Yes/No
6.0	Manufacturer's test / guarantee certificate	Available/ Not available
7.0	Performance test	Done/ Not Done
8.0	Acceptance Norms	
9.0	Committee Observations	
10.0	Date of next review (if accepted)	

Signature-Subcontractor/ Subcontractor's Safety Officer

Signature-Site Safety Officer ( BHEL)



## POWER SECTOR

### HSE Penalty Format

FORMAT NO: HSEP:14-F14


REV NO.: 00

PAGE NO. 01 OF 2

#### Sub: MEMO for Penalty for non-compliances in Safety and Fabrication Quality requirement

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

S. No	Nature of Non - Compliance	Penalty (in Rs.)	Remarks
<b>A. PPEs</b>			
1.	Not wearing safety helmet / wearing without chin straps	500	Per Person/ day
2.	Not Wearing safety shoes	500	Per Person/ day
3.	Not wearing gloves, nose masks where required	350	Per Person/ day
4.	Not using grinding goggles while doing grinding operations	500	Per Person/ day
<b>B. Height Work</b>			
1.	Not providing Lifelines for height work	1000	Per location per day
2.	Not ensuring barricading of working platforms	1000	Per location per day
3.	Not using temporary platform during work at height	1000	Per case per day
4.	Not wearing safety belt while working at height (> 2 meters) or not anchoring to lifeline	2000	Per Person/ day
5.	Not providing proper barricades (caution tape at 2 elevations)	500	Per location per day
	Use of mobile phones by Height worker / Crane / Hydra Operator	1000	Per case per day
<b>C. Electrical</b>			
1.	Not using 24 V supply for lighting in confined spaces	500	Per case per day
2.	Lack of Electrical Earthing	2000	Per case per day
3.	Improper earthing of welding & Other electrical Machines. Earth resistance not OK	500	Per Machine per incidence
4.	Electrical plug not used for connection/ hand machines	500	Per connection per incidence
5.	Unsafe electrical practice like not installing ELCB/ RCCB	500	Per case per day
6.	Using frayed/ broken welding cables	500	Per machine per week
<b>D. Lifting</b>			
1.	Use of lifting equipment without having valid Third Party Test certificate	5000	Per equipment per seven days
2.	Lifting hooks without latches	500	Per hook per day
3.	Using damaged slings or not slinging properly	2000	Per event Per T&P
4.	Lifting cylinders without cage or rolling of cylinders	500	Per Event per incidence
5.	Non removal of scrap from platforms	1000	Per Event Per location per 7 days
<b>E. Hot Work / Cylinder Handling</b>			
20.	Gas cutting without flash back arrestor	2000	Per machine per incidence
21.	Gas cutting at height without sheet below	500	Per event
22.	Not keeping gas cylinders vertically / in trolley on ground	500	Per event
23.	Gas cutting with damaged hose pipes	500	Per event
	Not covering welding cylinder with top cover	500	Per event
<b>F. Construction Vehicles</b>			
24.	Not having valid driving license for the type of vehicle/ T&P	2000	Per driver per event
25.	Two wheeler entry in construction area	500	Per vehicle
26.	Using Hydra for material movement at site in unsafe manner	1000	Per case
27.	Using Two Hydra in Tandem for material movement	2000	Per case
28.	Vehicles, Hydras, Cranes, Dumpers and Earth Movers not having automatic back horns linked to gear	1000	Per Equipment per day
29.	Not using guide rope while moving material using Hydra or Crane	1000	Per event
30.	Violating speed limit during vehicle movement	1000	Per event

	<b>POWER SECTOR</b>	FORMAT NO: HSEP:14-F14 REV NO.: 00 PAGE NO. 02 OF 2
	<b>HSE Penalty Format</b>	

	Nature of Non - Compliance	Penalty in Rs.)	Remarks
<b>Engineering / Administrative Controls / General</b>			
31.	Major Accident – Victim not reporting for work within 48 hours – resulting in partial loss in earning capacity & termination / demotion in employment	200000	
32.	Fatal Accident/Accidents Resulting in total Loss in Earning Capacity #	500000	Per victim#
33.	Unsafe Act in violation of standards / clauses of this document	500-5000	Per case
34.	Activity carried out without safety work permit where applicable	2000	Per person per event
35.	Using untrained / unqualified personnel for hazardous work	2000	Per event
36.	Not maintaining proper hygiene in canteen as per BOCW	1000	Per event

# or as deducted by customer, whichever is higher.

For repeated **major and** fatal incidents under the same subcontractor for the same package in the same Unit, the subcontractor will pay 2 times the penalty compared to previously paid

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

Penalty imposed:

1, Rate as per above chart\_\_\_\_\_

2. No. of Persons/ machine/ event/ labor\_\_\_\_\_

3. Total Penalty= 1. X 2. =\_\_\_\_\_

BHEL Personnel:

Signatures:

Name\_\_\_\_\_

Attachments: Photographs & Documentary proof (if available) for violation

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





**POWER SECTOR****Format for Inspection of Labor Colony**

FORMAT NO: HSEP:14-F16

REV NO.: 00

PAGE NO. 01 OF 1

Name of Site :	
Name of Sub-Contractor :	
Inspected by :	
Date of Inspection :	

S. No	Particulars	No	Yes	Comments
1	Sufficient living space ensured for each occupant with Kitchen area			
2	Area cleanliness ensured through regular cleaning			
3	Toilet facility sufficient for all occupants available, in order with adequate lighting, cleaned regularly and in hygienic condition			
4	Washing facilities available with adequate water supply			
5	Availability of sufficient drinking water in protected tanks with weekly tank cleaning and source tested annually as per IS10500 ensured			
6	Adequate drainage to remove waste and rain water, no flooding			
7	"Unsafe for Drinking" posted near accessible non-potable water and sources; posted in language of occupants or universal symbol			
8	Prevention of mosquitoes, flies, and rodents in immediate housing area through insecticide sprays if required			
9	Electricity provided & electrical connections safety ensured			
10	Fans, Coolers / Quilts, Heaters provided as required to cater to weather conditions along with adequate electricity supply			
11	Houses Walls and roof tight and solid; floors rigid and durable, with smooth, cleanable finish in good repair			
12	Availability of nominal rate ration / common use items shop within / nearby the colony			
13	Emergency medical plan developed: (A) Potential injuries determined (B) Local EMS response determined (C) Qualified first-aid person on site, if required			
14	Emergency plans posted where employees gather			
15	Transportation to nearest suitable facility			

**Any other checks:**

Remarks:	Name & Sign. Of Subcontractor HSE Officer			



## POWER SECTOR

## Format for Recording of First Aid Injuries

FORMAT NO: HSEP-14-F17  
REV NO.: 00  
PAGE NO. 01 OF 1

<p><b>Name of Site:</b></p>	<p><b>Name of Subcontractor:</b></p>
-----------------------------	--------------------------------------

[illegible]

**POWER SECTOR****Format for Maintaining Records of E-waste  
Handled / Generated**

FORMAT NO: HSEP:14-F18

REV NO.: 00

PAGE NO. 01 OF 1

**(Generated Quantity in Metric Tons (MT) per year)**

<b>Site</b>		
<b>Subcontractor</b>		
<b>Date</b>		
Types & Quantity of e-waste handled/generated**	Category	Quantity
	Item Description	
Types & Quantity of e-waste stored	Category	Quantity
	Item Description	
Types & Quantity of e-waste sent to collection center authorized by producer/dismantler/recycler/refurbisher or authorized dismantler/ recycler or refurbisher **	Category	Quantity
	Item Description	
Types & Quantity of e-waste transported*	Category	Quantity
	Item Description	
Name, address and contact details of the destination		
Types & Quantity of e-waste refurbished*	Category	Quantity
	Item Description	
Name, address and contact details of the destination of refurbished materials		
Types & Quantity of e-waste dismantled*	Category	Quantity
	Item Description	
Types & Quantity of e-waste recycled*	Category	Quantity
	Item Description	
Types & Quantity of materials recovered	Quantity	
Name, address and contact details of the destination		
Types & Quantity of e-waste sent to recyclers by dismantlers	Category	Quantity
	Item Description	
Name, address and contact details of the destination		
Types and Quantity of other waste sent to respective recyclers by dismantlers / recyclers of e-waste	Category	Quantity
	Item Description	
Name, address and contact details of the destination		
Types and Quantity of e-waste treated & disposed	Category	Quantity
	Item Description	
Name, address and contact details of the destination		

**Signature of Subcontractor Site In-charge:****Date**

**POWER SECTOR****Format for Maintaining Records of Hazardous Waste at the Facility**

FORMAT NO: HSEP:14-F19

REV NO.: 00

PAGE NO. 01 OF 1

1. Name of Site:
2. Name of the Subcontractor:
3. Date:
4. Description of hazardous waste:

Physical form with description	Chemical form	Total volume and weight (in kg.)

**5. Description of storage and treatment of hazardous waste:**

Date	Method of storage of hazardous wastes	Date	Method of treatment of hazardous wastes

**6. Details of transportation of hazardous waste:**

Name & address of consignee of package	Mode of packing/of the waste for transportation	Mode of transportation to site of disposal	Date of transportation

**7. Details of disposal of hazardous waste:**

Date of disposal	Concentration of hazardous material in the final waste form	Site of disposal (identify the location on the relevant layout drawing for reference)	Method of disposal	Persons involved in disposal

**8. Data of environmental surveillance:**

Date of measurement	Analysis of ground water			Analysis of soil samples			Analysis of air sampling			Analysis of any other samples (give details)
	Location of sampling	Depth of sampling	Data	Location of sampling	Depth of sampling	Data	Location of sampling	Data		

**9. Details of the hazardous wastes reused and recycled:**

Date	Total quantity of hazardous waste generated	Details of hazardous waste minimization activity	Material received	Final quantity of waste generated	Net reduction in waste generation quantity and percentage

**Signature of Subcontractor Site In-charge:****Date:**



## POWER SECTOR

### HSE Audit / Inspection Checklist-cum-Compliance Report

FORMAT NO: HSEP:14-F20

REV NO.: 00

PAGE NO. 01 OF 3

PROJECT: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

DATE: \_\_\_\_\_

OWNER : \_\_\_\_\_

INSPECTION BY: \_\_\_\_\_

Note : write 'NA' wherever the items is not applicable

Item	Y e s	N o	Remarks	Action
<b>HOUSEKEEPING</b>				
Waste containers provided and used				
Passageways and walkways clear				
General neatness of working area				
Other				
<b>PERSONNEL PROTECTIVE EQUIPMENT</b>				
Goggles; shields				
Face protection				
Hearing protection				
Respiratory masks etc.				
Safety belts				
Other				
<b>EXCAVATIONS / OPENINGS</b>				
Openings properly covered or barricaded				
Excavations shored				
Excavations barricaded				
Overnight lighting provided				
Other				
<b>WELDING, CUTTING</b>				
Gas cylinders chained upright				
Cable and hoses not obstructing				
Fire extinguisher (s) accessible				
Others				
<b>SCAFFOLDING</b>				
Fully decked platforms				
Guard and intermediate rails in place				
Toe boards in place				
Adequate shoring				
Adequate access				
Others				
<b>LADDER</b>				
Extension side rails 1 m above				
Top of landing				
Properly secured				
Angle + 70° from horizontal				
Other				



## POWER SECTOR

### HSE Checklist-cum-Compliance Report

FORMAT NO: HSEP:14-F20

REV NO.: 00

PAGE NO. 02 OF 3

<b>HOISTS, CRANES AND DERRICKS</b>				
Condition of cables and sheaf OK				
Condition of slings, chains, hooks OK				
Inspection & maintenance log maintained				
Outriggers used				
Signals observed and understood				
Qualified operators				
Others				
<b>MACHINERY, TOOLS &amp; EQUIPMENT</b>				
Proper instruction				
Safety devices				
Proper cords				
Inspection and maintenance				
Other				
<b>VEHICLE AND TRAFFIC</b>				
Rules and regulations observed				
Inspection and maintenance				
Licensed drivers				
Other				
<b>TEMPORARY FACILITIES</b>				
Emergency instructions posted				
Fire extinguishers provided				
Fire-aid equipment available				
General neatness				
Others				
<b>FIRE PREVENTION</b>				
Personnel instructed				
Fire extinguishers checked				
No smoking in prohibited areas.				
Hydrants				
Clearance				
Others				
<b>ELECTRICAL</b>				
Proper wiring				
ELCB's provided				
Ground fault circuit interrupters				
Protection against damage				
Prevention of tripping hazards				
Other				
<b>HANDLING &amp; STORAGE OF MATERIALS</b>				
Properly stored or stacked				
Passageways clear				
Other				
<b>FLAMMABLE GASES AND LIQUIDS</b>				
Containers clearly identified				
Proper storage				
Fire extinguisher nearby				
Other				

**POWER SECTOR****HSE Checklist-cum-Compliance Report**

FORMAT NO: HSEP:14-F20

REV NO.: 00

PAGE NO. 03 OF 3

<b>WORKING AT HEIGHT</b>				
Safety nets				
Safety belts				
Safety helmets				
Anchoring of safety belt to the life line rope				
<b>ENVIRONMENT</b>				
Lubricant waste/engine oils properly dispose.				
Waste from Canteen, offices, sanitation etc. disposed properly.				
Disposal of surplus earth, stripping materials, expired batteries, oily rags and combustible materials done properly.				
<b>HEALTH CHECKS</b>				
Hygienic conditions at labor camps O.K.				
Availability of first-aid facilities				
Proper sanitation at site, office & labor camps.				
Arrangement of medical facilities.				
Measures for dealing with illness.				
Availability of potable drinking water for workmen & staff.				
Provision of crèches for children.				

Signature of Subcontractor Site In-charge:

Date:



**POWER SECTOR****Format for Inspection of Illumination / Lux Levels**

FORMAT NO: HSEP:14-F21

REV NO.: 00

PAGE NO. 01 OF 1

Name of Site :

Name of Sub-Contractor :

Inspected by :

Date of Inspection :

**Details of Lux Meter Used for Illumination Checking**

Serial Number

Last inspection Date

Inspection Due Date

S. No	Location	Applicable Lux Value	Measured Lux Value	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

**Any other checks:**

Remarks:

Name &amp; Sign. Of Subcontractor HSE Officer

**POWER SECTOR****Format for Incident Reporting**

FORMAT NO: HSEP:14-F22

REV NO.: 00

PAGE NO. 01 OF 2

**Type of incident: Fatal/Major//Fire/Property damage (Tick what is applicable)**

1	Name Of Site		3	Activity Area	
2	Scope Of Work		4	Name Of Contractor	
			5	NAME & DESIGNATION OF BHEL ACTIVITY I/C	
6	Date & Time Of Accident		7	Date Resumed	
8	No. Of Work-Days Lost by Victim (If Duty Not Resumed, Give Estimated Figure)				
9	No. Of Man-hours Lost By Others				
10	Personal Details Of Injured and/or Details Of Materials/Equipment/ Property Damaged				
Name			Name Of Material / Equipment / Property		
Period Of Employment					
Age	Yrs.	Sex	Male/Female	Estimated Cost	Actual Cost
Marital Status		Single/ Married			
Occupation		Nature Of Damage			
Part Of Body Injured					
Nature Of Injury					
Agency (Object / Equipment / Substance) Most Responsible For Causing Accident / Injury / Damage					
12	Person (Name & Designation) With Most Control Over Agency (Object / Equipment / Substance) Causing Accident Injury / Damage				
13	Describe Clearly How the Accident Occurred (Use Additional Sheet, If Required)				

**POWER SECTOR****Format for Incident Reporting**

FORMAT NO: HSEP:14-F22

REV NO.: 00

PAGE NO. 02 OF 2

**Analysis**

14	What Acts and/or Conditions Contributed Most Directly to This Accident	
15	What Are the Basic Reason for The Existence of These Acts and/or Condition?	
16	What Corrective Actions Have Been Taken to Prevent Accident Recurrence?	
	Date:	Signature Of Site HSE Coordinator
17	Comments of Head/Sox	
	Date:	Signature Of Head/SOX



## POWER SECTOR

## Format for Incident Recording

FORMAT NO: HSEP:14-F23  
REV NO.: 00  
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[illegible]

## SECTION-B

### Special Requirements

(Applicable to this Contract Only)



POWER  
SECTOR

HEALTH, SAFETY AND ENVIRONMENT PLAN  
FOR  
SITE OPERATIONS  
(SECTION-B)

Doc. No.: HSEP:14-ER  
Rev.: 00

Date: 25.04.19

Page 1 of 162

**1. Establishment of Common Facilities for whole Project – cost to be borne in full by subcontractor.**

**Table 1.1**

S. No.	Item	Details as per Clause No. of this Section	Applicable / Not Applicable with Remarks	Package
1	Construction of Medical Centre	a	Applicable	Civil
2	Construction of Worker Training Centre (A part of safety park)	b	Applicable	Civil
3	Construction of Vertigo Test Structure (A part of safety park)	c	Applicable	Civil
4	Deployment of Specialists	d	Applicable	By concerned agencies
5	HSE Equipment	e	Applicable	By concerned agencies
6	HSE measurement devices	f	Applicable	By concerned agencies
7	Urinals in under-construction structures	g	Applicable	By concerned agencies
8	Safety Park	h	Applicable	Civil

**a. MEDICAL CENTRE**

- i. A medical center shall be setup at site with basic facilities for handling medical emergencies
- ii. Deployment of Medical Professional:
  1. **A qualified medical professional shall be deployed at site at all times.**
  2. **When total employee & worker strength at site crosses 500, medical professional with MBBS Degree from recognized institute shall necessarily be deployed**
- iii. Ambulance shall be deployed along with a trained driver and accessories as per Schedule V of BOCW Central Rules, 1998. Ambulance shall be utilized exclusively for transporting the accident victim. Ambulance drivers shall be regularly trained in First Aid.
- iv. Non deployment of Ambulance and First Aider as above shall invite a penalty of Rs. 30000 pm and Rs10000 PM respectively
- v. Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste – Management and Handling Rules, 1998).
- vi. Above are bare minimum requirements. Any legal requirements over and above these specifications shall supersede the above requirements



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**b. WORKER TRAINING CENTRE**

- i. Indoor Worker Training Center to be developed at site with seating capacity of at least 50 trainees
- ii. Projector with following minimum specifications:

Native Resolution	XGA, 1024x768
Brightness (ANSI lumens)	3300
Contrast Ratio	13000:1
Display Color	30 Bits
Aspect Ratio	4:3

- iii. A Laptop or Desktop PC with following minimum specifications:

Processor	Intel Celeron Dual Core
Memory (RAM)	2 GB
Graphics Card	2GB Video Memory
Hard Disk Capacity	60 GB
Monitor Size	14 inches
Keyboard	
Mouse	

- iv. Stereo speakers with minimum 50W RMS sound output
- v. PA system for Addressing Workers
- vi. Seating arrangement

**c. Development of Vertigo Test Structure:**

Vertigo test Structure to be developed as per **Annexure 04**

**d. Specialists:**

Following specialists shall be deployed by the subcontractor, who shall cater to whole project as per BHEL requirements / instructions

- I. **Qualified T&P Inspector: subcontractor** shall engage one qualified T&P inspector having undergone a certification course in the discipline.
- II. **Qualified Scaffolding Erector and Inspector:** Subcontractor shall deploy one qualified Scaffolding Supervisor and Inspector having undergone a certification course in the discipline



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- e. **Tools & Equipment:** Following equipment conforming to relevant IS Codes for the job shall be ensured by subcontractor:

S. No.	Item
1	Lifelines
2	Retractable Fall Arrestors
3	Safety Nets (10m X 5m)
4	Sky Climbers
5	Fire Blanket
6	Honey Bee Removal Suit & Kit
7	Flashback Arrestors
8	Barricading Tape
9	Binoculars
10	Walkie-Talkies
11	LOTO kit
12	24-Volt light
13	Sand Buckets
14	Hard barricading planks
15	Standby Fire kits

S. No.	Item	Type of Job / Purpose	Remarks
1	Lifelines (Steel Rope) and posts	Height work	
2	Retractable Fall Arrestors	Height Work	
3	Safety Nets (for fall protection; railings also to be covered)	Height Work	
4	Sky Climbers	Height Work	
5	Fire Blanket, Spark/ slag collector	Hot Work	
6	Honey Bee Removal Suit & Kit	General	
7	Flashback Arrestors	Hot work	
8	Barricading –Hard ( Scaffolding Pipes & Clamps or fabricated using structural/round	Height Work, Excavation, General Barricading	
9	Binoculars	HSE Inspection	
10	Walkie-Talkies	Lifting	
11	LOTO kit	Working on charged line	
12	24-Volt light	Confined Space/ temp work	
13	Sand and Water Buckets	Hot work/Electrical work	
15	Standby Fire kits Fire extinguisher stands	Hot work/Electrical work	





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Above equipment are bare minimum to be essentially maintained at all times. Additional numbers to be deployed as and when required in order to ensure fulfillment of all Safety requirements

**f. HSE Measurement Equipment & Tools**

S. No	Device
1	ELCB Tester
2	Multi meter (Light cables)
3	Earth Resistance Meter
4	Lux Meter
5	Decibel Meter
6	Anemometer
7	Breath Analyzer (Alcohol)
8	Multi-gas analyzer
9	Gas leakage detector / alarm
10	Gas monitor (confined space)
11	Radiation meter & Badges
12	Blood pressure monitor
13	Fire detectors
14	Dust Particle Detector

**g. Urinals in Under-construction structures:**

Urinals for in under-construction structures for easy access eg. In case of Boiler elevations etc.

**2. Shared Facilities –** where part of operating cost is borne by subcontractor in proportion to contract value

The subcontractor shall bear running expenses of above facilities on a 'proportional to contract value sharing basis as finalized by BHEL.

S. No.	Facility
1.	Operation of Ambulance, Nurses, Medical Consumables
2.	Construction, Maintenance & Upkeep of Latrines and Urinals in Common spaces
3.	Drinking Water Provision in Common Spaces
4.	Dust Control / Water Sprinkling, Pest Control, Fumigation at Site



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**LIST OF REFERENCES**

S. No	Code Name	Title
1	IS: 818-1888 (Reaffirmed 2003)	Code of Practice for Safety and Health requirements in Electric and Gas Welding and Cutting operations.
2	IS: 1179-1967 (Reaffirmed 2003)	Specification for Equipment for Eye & Face protection during welding.
3	IS: 1989 (Part 2):1986 (Reaffirmed 1997)	Specification for Leather Safety Boots & Shoes
4	IS:2925 – 1984 (Reaffirmed 2010)	Specification for Industrial Safety Helmets
5	IS:3521: 1999 (Reaffirmed 2002)	Industrial Safety Belts & Harnesses-Specification
6	IS:3646(Part II) – 1966(Reaffirmed 2003)	Code of Practice for Interior Illumination
7	IS:3696 (Part I) – 1987 (Reaffirmed 2002)	Safety Code for Scaffolds and Ladders
8	IS: 3696(Part 2) : 1991 (Reaffirmed 2002 )	Scaffolds and Ladders-Code of Safety
9	IS: 3764:1992	Excavation Work – Code of Safety
10	IS:3786 – 1983 (Reaffirmed 2002)	Method for Computation of Frequency and Severity Rates for Industrial Injuries and Classification of Industrial Accidents
11	IS.4014.2.1967	Steel tubular Scaffolding
12	IS:4770: 1991 (Reaffirmed 2006)	Rubber Gloves Specification (Electricals Purposes)
13	IS:4912: 1978 (Reaffirmed 2002)	Safety Requirements for Floor and Wall Openings, Railings and Toe Boards
14	IS: 5557 – 1969	Industrial and Safety rubber knee boots.
15	IS: 5983 – 1980 (Reaffirmed 2002)	Specification for Eye-Protectors
16	IS:6519 – 1971 (Reaffirmed 1997)	Code of Practice for Selection, Care and Repair of Safety Footwear
17	IS.6549.1972	Glossary of terms used for Lifting tackles
18	IS:6994(Part I)-1973 (Re affirmed 1996)	Specification for Industrial Safety Gloves Leather and Cotton Gloves
19	IS.7215.1974	Steel Structure Fabrication
20	IS.7969.1975	Handling and storage of building material



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21	IS:8519 – 1977 (Reaffirmed 1983)	Guide for Selection of Industrial Safety Equipment for Body Protection.
22	IS:8520 – 1977 (Reaffirmed 2002)	Guide for Selection of Industrial Safety Equipment for Eye, Face and Ear Protection.
23	IS:9167:1979	Specification for Ear-Protectors
24	IS:9473:2002	Respiratory Protective Devices-Filtering Half Masks to protect against Particles-Specification.
25	IS: 9944:1992 (Reaffirmed 2003)	Natural and Man-made Fiber Rope Slings- Recommendations on Safe working loads.
26	IS 11006 : 2011	Flash Back(Flame) Arrestor Specification
27	IS: 11226 – 1985	Leather Safety footwear having direct molding sole.
28	IS:11057 – 1884 (Reaffirmed 2001)	Specification for Industrial Safety Nets
29	IS: 12254:1993 (Reaffirmed 2002)	Polyvinyl Chloride (PVC) Industrial Boots Specification
30	IS:13367(Part 1):1992 (Reaffirmed 20030)	Safe Use of Cranes-Code of Practice
31	IS: 14166:1994 (Reaffirmed 2002)	Respiratory Protective Devices-Full Face Masks Specification
32	IS:14746: 1999 (Reaffirmed 2003)	Respiratory Protective Devices-Half Masks and Quarter Masks - Specification
33	IS: 15397 :2003 (Reaffirmed 2008)	Portable Extinguisher Mechanical Foam Type(Stored Pressure)-Specification
34	IS: 19011:2002	Guidelines for Quality and/or Environmental Management Systems Auditing

 POWER SECTOR	HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATIONS (SECTION-B)	Doc. No.: HSEP:14 Rev.: 01 Date: Page 1 of 162

**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 laborers 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



### **HSEP:14 - ANNEXURE 03**

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#### Details and Contents of First Aid Box

**(b) For establishment in which the number of contract laborers 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.



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# HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATIONS (SECTION-B)

Doc. No.: HSEP:14

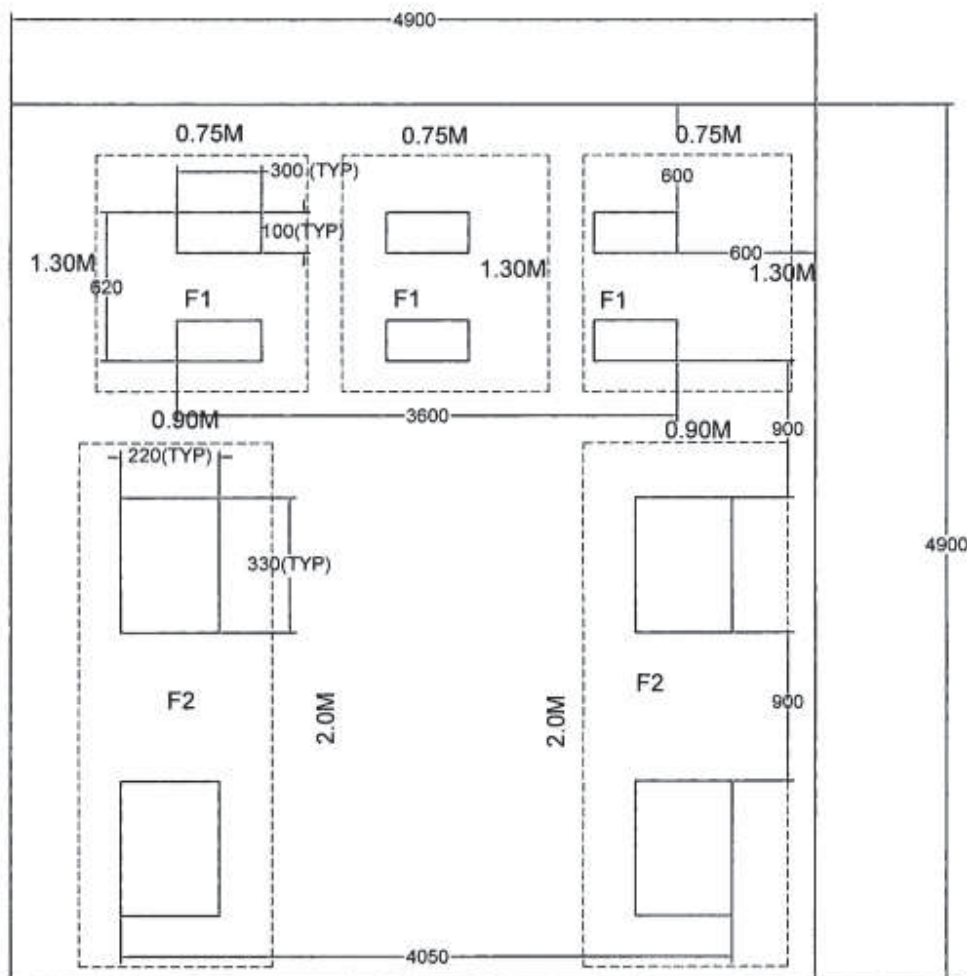
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Table 1

S. No.	Topic
1	Vertigo / Height working Test Structure Layout
2, 3	Structure Layout Sketch
3	Actual Photo of a typical structure
4	Bill of Materials
5	Guidelines for Conducting the Test



## Note:

- All dimensions are in mm
- Drawing is not to scale
- Inside boundary area to be filled with sand to level with road (external)
- Details of F1 and F2 are shown below

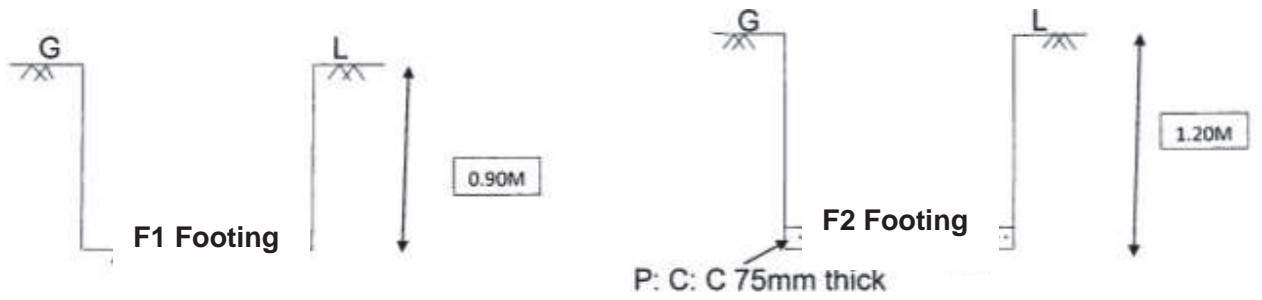
Figure 1: Vertigo / Height Work Test Structure Layout



## HSEP:14 - ANNEXURE 04

### Vertigo Test Structure Specifications

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#### Note:

- Concrete Grade is M15
- Drawing is not to scale
- TOC is at Road Level
- G L refers to Ground Level

**Figure 2**

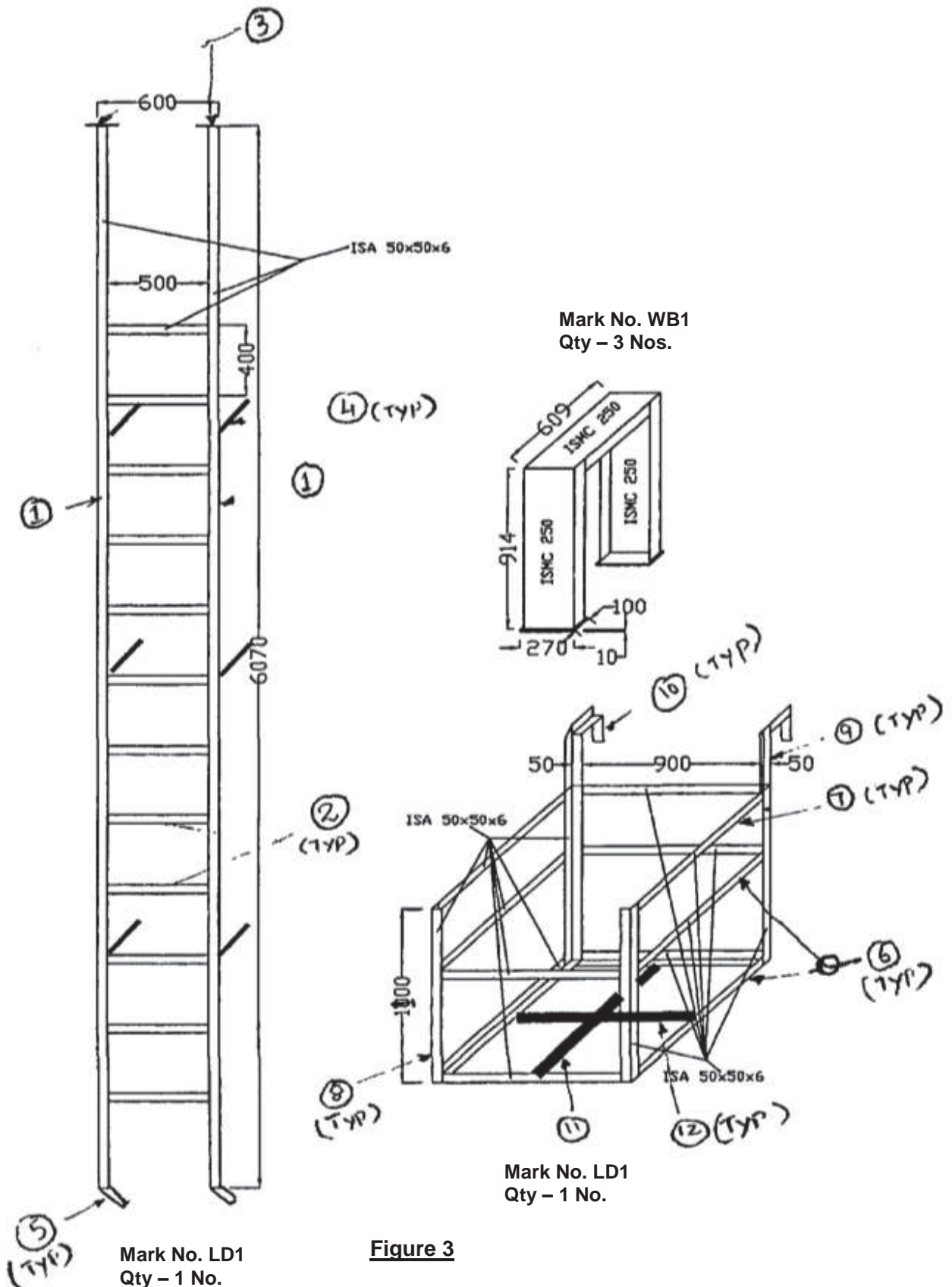
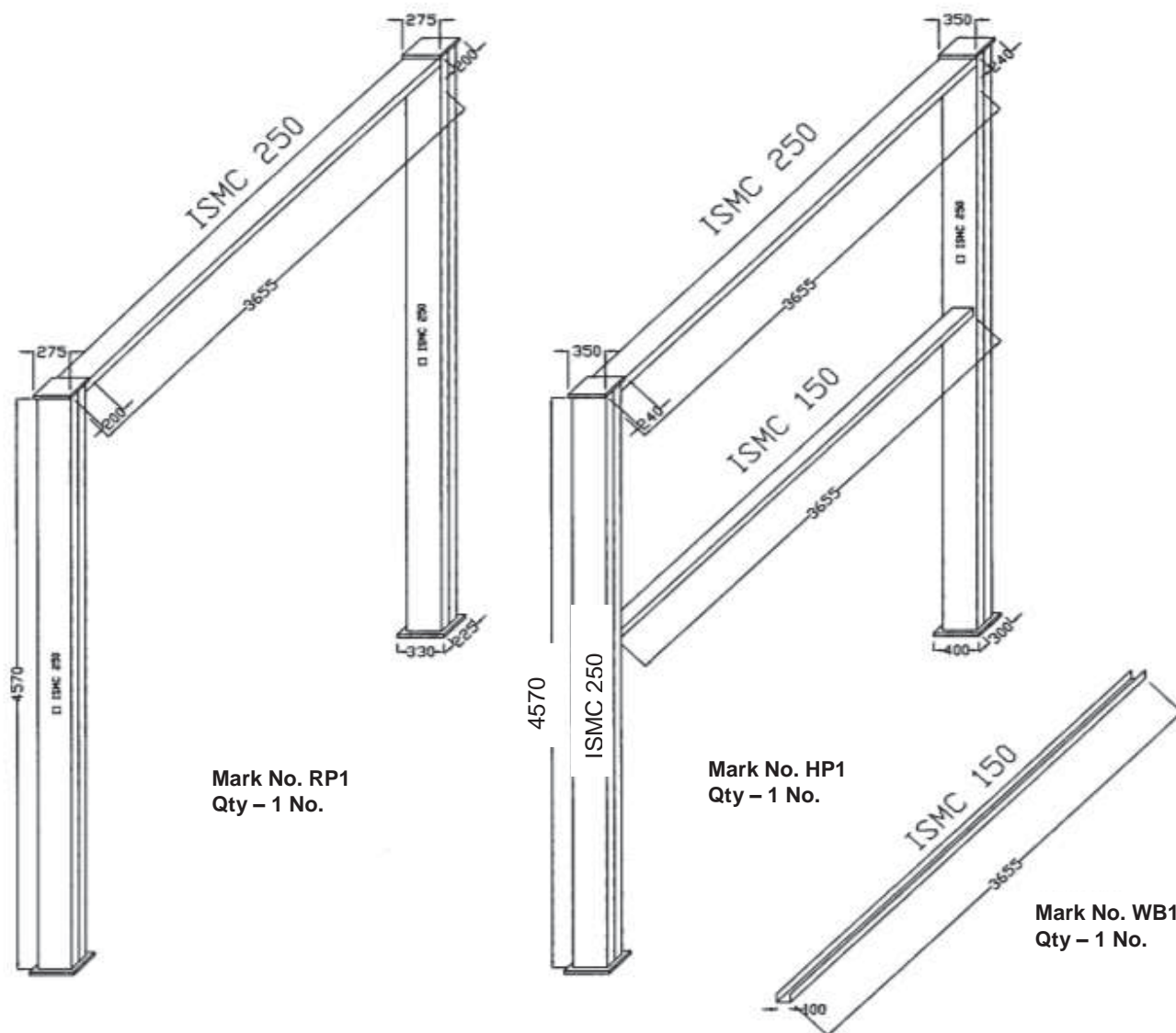


Figure 3



**Figure 4**




**Table 2: BOM FOR HEIGHT WORK INDUCTION TRAINING MODULE**

Sl. No.	Description	Width (mm)	Length (mm)	Qty (No's)	Unit Wt (Kgs)	Total Wt. (Kgs)
MKD NO. WB1						
1	ISMC250		609	3	34.20	62.483
2	ISMC250		914	6	34.20	187.553
3	ISMC100		3655	1	9.56	34.942
4	PL10	100	270	6	78.50	12.717
			Total Weight (Kgs)			297.695
MKD NO. RP1						
1	ISMC250		4570	4	34.20	625.176
2	ISMC250		3655	1	34.20	125.001
3	PL25	225	330	2	196.25	29.143
4	PL25	200	275	2	196.25	21.588
			Total Weight (Kgs)			800.908
MKD NO. HP1						
1	ISMC250		4570	4	34.20	625.176
2	ISMC250		3655	1	34.20	125.001
3	ISMC150		3655	1	16.80	61.404
4	PL25	300	400	2	196.25	47.100
5	PL25	240	350	2	196.25	32.970
			Total Weight (Kgs)			891.651
MKD NO. LD1						
1	ISA50X50X6		6070	2	4.50	54.630
2	ISA50X50X6		500	12	4.50	27.000
3	PL12	75	75	2	94.20	1.060
4	ISA50X50X6		300	6	4.50	8.100
5	ISA50X50X6		255	2	4.50	2.295
6	ISA50X50X6		1000	8	4.50	36.000
7	ISA50X50X6		910	3	4.50	12.285
8	ISA50X50X6		1100	4	4.50	19.800
9	ISA50X50X6		650	2	4.50	5.850
10	ISA50X50X6		350	2	4.50	3.150
11	PL8	75	900	1	62.80	4.239
12	PL8	75	410	2	62.80	3.862
			Weight (Kgs)			178.271
			Total Weight (Kgs)			2168.525



**A. Test Procedure / Guidelines**

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 generally carried 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 fit for height work.

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<b><u>Safety Park Requirements</u></b>		
S.No	Training room(capacity 40 persons)	Qty.
1	Class room chair	25
2	Office Table	3
3	Rolling chair	3
4	Almirah	1
5	Visitor chair	10
6	Drawer	2
7	Single bed	1
8	Mattress	1
9	Projector	1
10	Projector screen	1
11	Sound speakers	1
12	Desktop Computer	3
13	Printer	1
14	White Board	1
15	Marker	5
16	Duster	1
17	Door Mat	9
18	Dustbin(Smaal + BIG)	7+1
19	Mannequin	1
20	Helmet	1
21	Face Shield	1
22	Safety Goggle	1
23	Welding sheild	1
24	Ear Muff	1
25	Ear Plug	1
26	Nose Mask	1
27	Breathing Apparatus	1
28	Hand Gloves(Cotton)	1
29	Hand Gloves for Electrician (Rubber)	1
30	Hand gloves Rubber	1
31	Hand Gloves Lather	1
32	Construction Safety Uniform(Boiler Suit)	1
33	Welding Apron	1
34	Safety Shoes	1
35	Leg Guard For Welder	1
36	Poster for Occupational Disease like Pneumoconosis,silicosis etc.	1
37	Gum Boot	1

38	Full Body Harness	1
39	8 MM Wire rope for life line. Length 20 Feet(FT).	1
40	Sfety Net for man & materials.Size 15 FT X 15FT.	1
41	MonkEy ladder 15 FT.	1
45	Fire Extingusher All types(DCP,CO2 & Foam)	1
46	Bed Sheet	1
47	Pillow	1
48	Curtain	12
49	curtain fittings	12
50	AC (1.5 TON)	3
51	AC (2 TON)	2
52	Rope pully.	1
53	PP Rope for pully 20 MTR.	
54	Ladder Clamps	6
55	Allumuniam ladder 6 MTR.	1
56	Carry Bag	
57	Scaffolding all Materilas for 5 Mtr. Height like.Sacffolding tubes,Sole plate,base plate,Right angle clamps,Swielclamps,beam clamps,Joint box/joint pin,toe guard/board,	



**Health, Safety & Environment, Power Sector Headquarters**

**Bharat Heavy Electricals Limited**

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Website: [www.bhel.com](http://www.bhel.com)

<p style="text-align: center;"><b>VOLUME-III</b> <b>PRICE SCHEDULE. REV-0</b></p>	
<p><b>JOB: PROVIDING ONE (1) NUMBER TOWER CRANE , AS PER TECHNICAL SPECIFICATION, FOR 3X660 MW BHEL NORTH KARANPURA SITE, TANDWA, JHARKHAND ON MONTHLY RENTAL BASIS</b></p>	
<p style="text-align: center;"><b>TENDER NO - PSER:SCT:NKP-F2002-:19.</b></p>	
<p style="text-align: center;"><b>PREAMBLE</b></p>	
<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 rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned any where in this document.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for guidance/tender purposes giving some idea of the work involved. The work is to be executed as per terms & conditions of the tender and actual drawings/documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within fifteen percent ( $\pm 15\%$ ) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based service contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order. The rates of unit rate/optional items shall remain valid till execution of the order, if the job/work is awarded to the bidder.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing , clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates 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.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tenderer 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 before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work.

VOLUME-III PRICE SCHEDULE. REV-0	
JOB: PROVIDING ONE (1) NUMBER TOWER CRANE , AS PER TECHNICAL SPECIFICATION, FOR 3X660 MW BHEL NORTH KARANPURA SITE, TANDWA, JHARKHAND ON MONTHLY RENTAL BASIS	
TENDER NO - PSER:SCT:NKP-F2002-:19.	
PREAMBLE	
13	No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. Decision of BHEL in this regard shall be final and binding to the bidders.
14	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/alteted 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.
15	Bidders to note that for Civil &Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No.(i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate ,if the bidder becomes L-1. The same modality shall be applicable for other item rate service contracts where item with same decription is repeated in different schedules.
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be ) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lump-sum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	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.
18	In case of tender for Civil and/or Structural works,if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule. PVC/escalation is not payable for these Non-scheduled items.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor. No idling charge whatsoever (either for labour or any other resources ) is payable by BHEL for any reason whatsoever.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule/TCC/ drawing for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight charges against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.



VOLUME-III PRICE SCHEDULE, REV-0		
JOB: PROVIDING ONE (1) NUMBER TOWER CRANE , AS PER TECHNICAL SPECIFICATION, FOR 3X660 MW BHEL NORTH KARANPURA SITE, TANDWA, JHARKHAND ON MONTHLY RENTAL BASIS		
TENDER NO - PSER:SCT:NKP-F2002:19.		
SCH-1 - TOTAL PRICE		
SL. NO.	DESCRIPTION OF EQUIPMENT/ ITEM	TOTAL QUOTED PRICE (INR)
1.0	Providing one (1) number Tower Crane ,as per technical specification, along with Operator, Helper, Maintenance & service staff, Consumables etc on monthly rental basis, with separate mobilization- demobilization, installation supervision, dismantling supervision charges for 3x660 MW BHEL North Karanpura Site.	
<b>NOTE</b>		
1.0	Bidder to note that total price at sl no 1.0 above shall be considered for evaluation & awarding. As such total price at sl no 1.0 should be complete in all respect for the full scope defined and considering all terms and conditions.	
2.0	Bidder to note that percentage break-up of above total price is frozen and indicated in SCH-2.	
3.0	Bidder shall note that while the allocated price of SCH-2 correspond to their respective prices, rates of various components will be worked out by apportioning the amounts wrt respective indicated quantities.	
4.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 7 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.	
5.0	Other optional items, if included, shall not be considered for evaluation.	
6.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.	
7.0	Price format shall not be changed by bidder in any case, since it may lead to cancellation of bidder's offer.	

VOLUME-III PRICE SCHEDULE, REV-0				
JOB: PROVIDING ONE (1) NUMBER TOWER CRANE AS PER TECHNICAL SPECIFICATION FOR 3X660 MW BHEL NORTH KARANPURA SITE, TANDWA, JHARKHAND ON MONTHLY RENTAL BASIS				
TENDER NO - PSER:SCT:NKP-F2002:19.				
SCH-2 - TOTAL PRICE BREAK-UP				
SL NO	DESCRIPTION	UOM	QUANTITY	Weightage
<b>1</b>	Providing one (1) number Tower Crane ,as per technical specification, along with Operator, Helper, Maintenance & service staff, Consumables etc on monthly rental basis, with separate mobilization- demobilization, installation supervision, dismantling supervision charges for 3x660 MW BHEL North Karanpura Site.			
1.1	Monthly lumpsum hire charges for providing 1 no Tower crane along with accessories, complete as per tender.	MONTH	24	<b>0.90250696</b>
1.2	Mobilisation and de-mobilisation charges lumpsum for the Tower crane.	LOT	1	<b>0.07186630</b>
1.3	Supervision Charges for Installation , Commissioning and Load Test ( including arranging TPI ) lumpsum for the Tower crane	LOT	2	<b>0.01448468</b>
1.4	Supervision Charges for Dismantling of the Tower crane	LOT	2	<b>0.01114206</b>
<b>A</b>	<b>Total</b>			<b>1.00000000</b>