

TENDER SPECIFICATION
BHEL/PSSR/SAS/SCT/DK23119-029/T-15/19-20

FOR
Hiring of One number 500MT or higher capacity Tyre
mounted Hydraulic Telescopic Boom Crane
for
Erection and De-erection of 180MT Capacity Additional
Erection Trolley
at
NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2

VOLUME –I BOOK – I

TECHNOCOMMERCIAL BID - Consists of Book-I & Book-II

Book- I Consists of

- Notice Inviting Tender
- Volume-IA: Technical Conditions of Contract

Book-II consists of

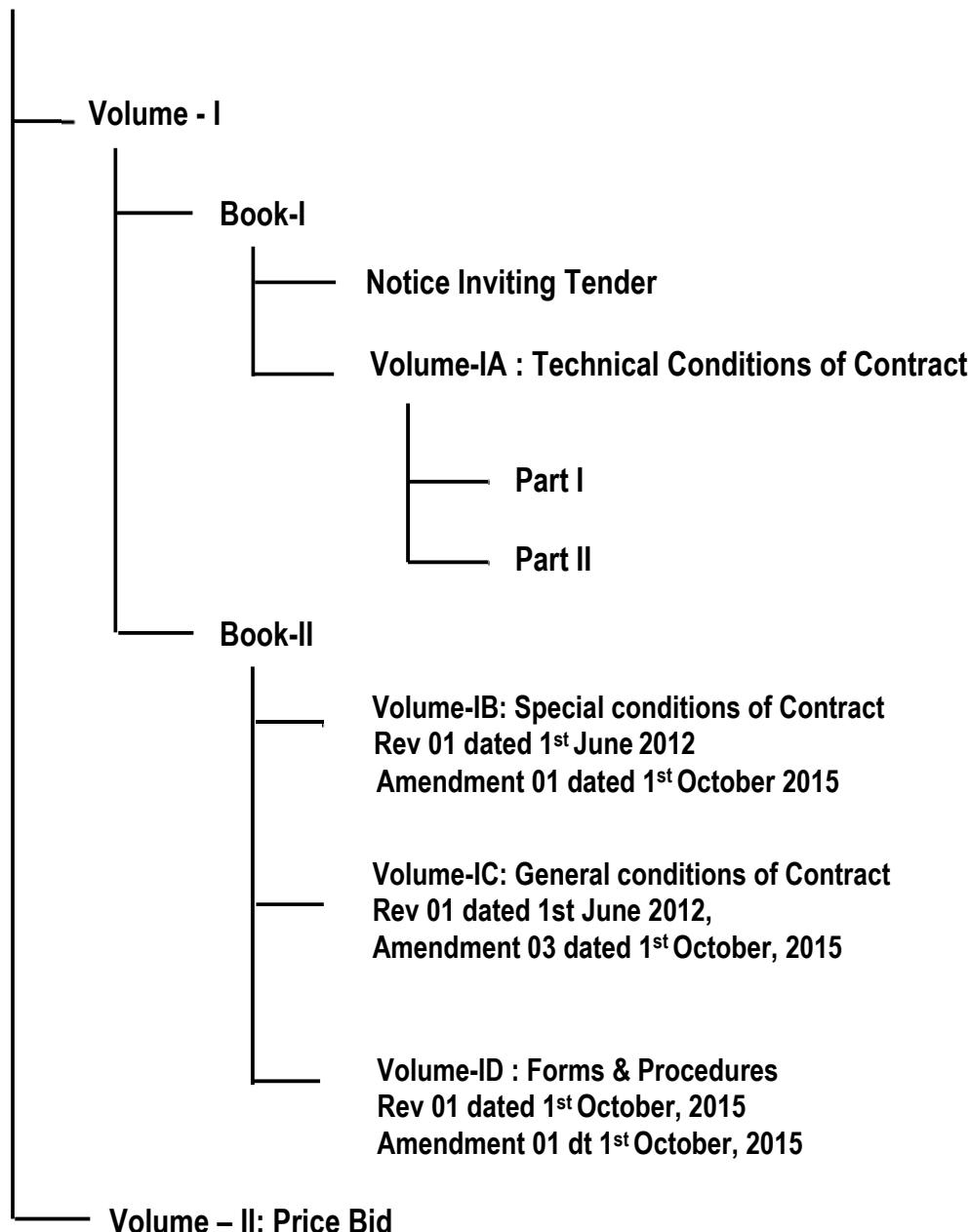
- Volume-IB: Special conditions of Contract,
Rev 01 dated 1st June 2012
Amendment 01 dated 1st October, 2015
- Volume-IC: General conditions of Contract
Rev 01 dated 1st June 2012,
Amendment 03 dated 1st October, 2015
- Volume-ID: Forms & Procedures
Rev 01 dated 1st June 2012
Amendment 01 dt 1st October, 2015



BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
Power Sector – Southern Region
Services After Sales-Secunderabad
39, SD Road, Secunderabad – 500 003.

TENDER SPECIFICATION CONSISTS OF

Tender Specification



NOTICE INVITING TENDER

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



NOTICE INVITING TENDER

Ref: BHEL/PSSR/SAS/SCT/DK23119-029/T-15/19-20

Date: 19.11.2019

NOTICE INVITING TENDER (NIT)

Submission only through E-Procurement Portal

<https://bhel.abcprocure.com>

Note: Bidder may download Tender Document from web sites

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To

Dear Sir/Madam

Sub: NOTICE INVITING TENDER

Online Sealed offers in two part bid system are invited from reputed & experienced bidders (meeting PRE QUALIFICATION CRITERIA as mentioned in Annexure-I) through E-Procurement Portal <https://bhel.abcprocure.com> only, for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

1.0 Salient Features of NIT

Sl. No	ISSUE	DESCRIPTION	
i)	TENDER NUMBER	BHEL/PSSR/SAS/SCT/DK23119-029/T-15/19-20	
ii)	Broad Scope of job	Hiring of One number 500MT or higher capacity Tyre mounted Hydraulic Telescopic Boom Crane for Erection and De-Erection of 180MT Capacity Additional Erection trolley at NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2	
iii)	DETAILS OF TENDER DOCUMENT		
A	Volume-IA	Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	Applicable
B	Volume-IB	Special conditions of Contract, Rev 01 dated 1st June 2012, Amendment 01 dated October 01, 2015	Applicable
C	Volume-IC	General conditions of Contract Rev 01 dated 1st June 2012, Amendment 03 dated October 01, 2015	Applicable
D	Volume-ID	Forms & Procedures Rev 01 dated 1st June 2012 Amendment 01 dated October 01, 2015	Applicable
E	Volume-II	Price Schedule (Absolute value).	Applicable

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iv)	Issue of Tender Documents	<p>1. This is an E-tender floated online through our E-Procurement Portal https://bhel.abcprocure.com</p> <p>2. Sale Start: 19.11.2019 Close: Tender documents for bidder's reference can be downloaded from this website till due date of submission</p> <p>3. From: BHEL website (www.bhel.com -> Tender Notifications).</p>	Applicable
v)	Due Date & Time of Offer Submission	<p>Date: 25.11.2019, Time :16.00 Hrs The bidder should submit their offer online in e-Procurement portal at https://bhel.abcprocure.com</p> <p><u>Bidders are requested to upload their offer well in advance in order to avoid last minute congestion at this website.</u></p> <p>Hard copy bid or bids through E-mail / fax shall not be accepted.</p>	Applicable
vi)	Opening of Tender	<p>Date: 25.11.2019, Time :16.30 Hrs Notes:</p> <p>(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.</p> <p>(2) Bidder may record their presence online, during tender opening. However, this being an e-tender it shall be opened online.</p>	Applicable
vii)	EMD Amount	<p>Rs. 4,00,000/- (Rupees Four Lakhs only).</p> <ul style="list-style-type: none"> - It is to be noted EMD shall be remitted, prior to tender opening. - EMD Exemption for MSEs is not applicable for this tender. - Refer Vol-1A Part-II Chapter-1 for mode of payment of EMD 	Applicable
viii)	Last Date For Seeking Clarification	<p>Bidders may submit their queries in https://bhel.abcprocure.com at least 3 days before the due date of offer submission along with soft version also, addressing to undersigned & to others as per contact address as follows.</p> <p>1. Shri.MVN Rambabu</p>	Applicable

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		<p>Phone: 040 27700565 Mobile: 09533099966 E-mail: mvnrambabu@bhel.in</p> <p>2. Shri. Virendra Kumar Phone: 040 27700565 Mobile: 08874200818 E-mail: vir@bhel.in</p>	
ix)	Schedule of Pre Bid Discussion (PBD)		Not Applicable
x)	Integrity Pact & Details of Independent External Monitor (IEM)		Not Applicable
	Latest updates	<p>Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com Tender Notifications) & portal https://bhel.abcprocure.com. These will not be published in the newspapers. Bidders to keep themselves updated with all such information. This also form part of tender hence the same shall be enclosed with their offer.</p>	

2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, **duly signed & stamped on each page, 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 Void.

4.0 Unless specifically stated otherwise, bidder shall deposit **Earnest Money Deposit (EMD) as mentioned in Volume IA, Part-II, Chapter-1** of Technical Conditions of Contract (Volume-I Book-I) under the heading 'Modes of Deposit of EMD'. Please note that 'One Time EMD' shall not be considered. **It is to be noted that proof of remittance for EMD shall be made available at BHEL PSSR SAS Secunderabad Office prior to tender opening.**

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5.0 Procedure for Submission of Tenders: This is an E-tender floated online through our E-Procurement portal <https://bhel.abcprocure.com>. The bidder should respond by submitting their offer online only in our e-Procurement portal at <https://bhel.abcprocure.com>. Hard copy bid or bids through email/ fax shall not be accepted.

I. Pre-requisite for Offer Submission: -

Digital Certificate: To access an e-Tender, you need to have a Class-II/III Digital Signature Certificate (DSC) for Signing & Encryption (Required both digital signature certificate: Signing & Encryption) of bids issued by any of the valid Certifying Authorities (approved by Controller of Certifying Authorities) in India. Valid Digital Signature Certificate (DSC) must be installed in a computer system from where you want to access the website.

MINIMUM REQUIREMENT: (Mandatory)

- Computer with good Internet Connection.
- Operating System should be Windows Vista / Windows 7 and above.
- Web Browsers: Internet Explorer 9.0 (32-bit Browser only) & above

At first time login, to verify and approve your login profile & DSC, you are requested to contact e-Procurement Service Provider.

Also please Refer “Bidder Manual for BHEL Bidders” and “Minimum System Requirements and Settings Document for BHEL user & Bidders” available at <https://bhel.abcprocure.com> .

II. Digital Signing of e-Tender

Tenders shall be uploaded with all relevant documents in PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class-II/III Digital Signature Certificate (DSC) for Signing & Encryption.

i) The Requirement:

- a. A PC with Internet connectivity &
- b. DSC (Digital Signature Certificate) Class-II/III Digital Signature Certificate (DSC) for Signing & Encryption)

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

III. E-procurement service Provider:-

Address:

e-Procurement Technologies Limited (abcProcure),

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Head Office:B-704/705, Wall Street - II, Opp. Orient Club,
Nr. Gujarat College, Ellis Bridge, Ahmedabad - 380 006, Gujarat (India)

Timing:

Indian Standard Time (+5:30 GMT): 10:00 AM - 07:00 PM (Monday to Friday)

Indian Standard Time (+5:30 GMT): 10:00 AM - 04:00 PM (Saturday)

The contact details of the service provider are given below:

Contact: +91-79-40270549/560/590

E-Mail: BHEL.Support@abcProcure.com

Further contact details can be obtained by visiting the following webpage:

<https://bhel.abcprocure.com/EPROC/contactus>

IV. Documents Comprising the e-Tender

The tender shall be submitted online – only except EMD (in physical form) as mentioned below:

i) Technical Tender (UN priced Tender)

Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- i). Earnest Money Deposit (EMD) furnished in accordance with **NIT Clause 4.0**.
- ii). All Technical details (eg. Eligibility Criteria requested, Technical Conditions of Contract) should be attached in e-tendering module (**As detailed in Clause 6.0 below**), failing which the tender stands invalid & may be REJECTED.

ii) Price Bid:

- a. Prices are to be quoted as per the Price Bid format attached online on e-tender portal.
- b. The price should be quoted for the accounting unit indicated in the e-tender document.
- c. The item description, Quantity and Unit of measurement, as mentioned in Price bid uploaded by BHEL and subsequent revisions issued by BHEL, shall be binding on the bidder.

Note:

- i). It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- ii). A person signing (manually or digitally) the tender form or any documents

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forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.

- iii). A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.
- iv). In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, same shall not be considered.

V. DO NOT"S

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered.

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

6.0 DOCUMENTS TO BE UPLOADED & MODALITY OF UPLOADING in E-PROCUREMENT PORTAL <https://bhel.abcprocure.com> SHALL BE AS DETAILED BELOW

SI No	Description	Remarks
	Techno-Commercial Bid CONTAINING THE FOLLOWING:-	
i.	Covering letter / Offer forwarding letter of Tenderer.	Refer "Bidder Manual for BHEL Bidders" available at https://bhel.abcprocure.com
ii.	Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above. Format as per F-3 (Rev 00) Volume-ID : Forms & Procedures Rev 01 dated 1st June 2012 Amendment 01 dated October 01,2015	Refer "Bidder Manual for BHEL Bidders" available at https://bhel.abcprocure.com
iii	EMD Remittance proof	

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iv.	<p>Supporting documents / annexure / schedules / drawing etc as required in line with Pre-Qualification criteria. (Technical & Financial)</p> <p>As detailed in Clause No. 25 of NIT, It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact phone no, FAX no, E-mail ID,etc.</p>	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
v.	All Amendments / Correspondences / Corrigenda / Clarifications / Changes / Errata etc pertinent to this NIT.	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
vi.	Duly filled-in annexures, formats etc as required under this Tender Specification / NIT	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
vii.	Notice inviting Tender (NIT)	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
viii.	Volume – I A : Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	
ix.	Volume – I B : Special Conditions of Contract (SCC)	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
x.	Volume – I C : General Conditions of Contract (GCC)	
xi.	Volume – I D : Forms & Procedures	
xii.	Volume – II (UNPRICED – without disclosing rates/price, but mentioning only ‘QUOTED’ or ‘UNQUOTED’ against each item	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com

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xiii.	Any other details preferred by bidder with proper indexing.	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
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i	<p>PRICE BID consisting of the following shall be attached as mentioned below</p> <p>Volume II – PRICE BID (Duly Filled in Schedule of Rates – rate / price to be entered in words as well as figures)</p> <p>Caution to Bidders: -</p> <p>Bidders to note that while uploading/entering price bid document, the “Type of Format” in e-tendering module is selected as “Price” and not “Technical & Commercial”</p> <p>Any other document uploaded in the price bid, apart from above tender format, shall not be taken into cognizance for evaluation of offer.</p>	Refer “Bidder Manual for BHEL Bidders” available at https://bhel.abcprocure.com
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SPECIAL NOTE:

- i. All documents / annexures submitted with the **offer shall be properly attached / entered / uploaded in the respective sections**. BHEL shall not be responsible for any missing documents.
- ii. **Your offer & documents submitted along with offer shall be signed & stamped in each page by your authorized representative.**

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

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

9.0 Assessment of Capacity of Bidders: Not Applicable

10.0 Void

11.0 Since the job shall be executed at site, bidders are advised to visit site/ work area and study the job content, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc., before quoting for this tender.

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12.0 For any clarification on the tender document, the bidder may seek the same in clarification provision available in procurement portal <https://bhel.abcprocure.com> or writing or through e-mail, 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.

13.0 Void.

14.0 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.

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

16.0 Void.

17.0 The Bidder has to satisfy the Pre-Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the pre-qualification criteria specified in this NIT as per Annexure-1(as applicable) past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right NOT to consider offers of parties under HOLD.

18.0 Void.

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

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

Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the

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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).

The bidders have to necessarily submit online sealed bid less than or equal to their price bid already submitted to BHEL along with the offer in e-procurement portal. **The price bid in e-procurement portal of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates.**

If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).

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

22.0 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.

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

24.0 Void

25.0 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.

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

27.0 The offers of the bidders who are under suspension 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 web site "www.bhel.com → tender notification".

28.0 It may be noted that guidelines / rules in respect of 'Suspension of Business dealings' available on BHEL web site "www.bhel.com → Supplier

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Registration", "Vendor evaluation format", Quality, Safety & HSE guidelines', etc may undergo change from time to time and the latest one shall be followed.

29.0 Void

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

31.0 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.

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

32.1 Commitment by BHEL:

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

32.2 Commitment by Bidder / Supplier / Contractor:

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

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

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

If any bidder / supplier / contractor during pre-tendering / tendering / post tendering / award / execution / post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or

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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 and / or under applicable legal provisions.

33.0 Order of Precedence:

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

- a. Amendments / Clarifications / Corrigenda / Errata etc. issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC) —Volume-1B
Rev. 01 Dt. 01 Jun 2012; Amendment: 01 Dt. 1st October 2015
- f. General Conditions of Contract (GCC) —Volume-1C
Rev. 01 Dt. 01 Jun 2012; Amendment: 03 Dt. 1st October 2015
- g. Forms and Procedures —Volume-1D
Rev. 01 Dt. 01 Jun 2012; Amendment: 01 Dt. 1st October 2015

For and on behalf of BHARAT HEAVY ELECTRICALS LTD

SD/-

Sr. DGM / SCT

Enclosure

1. Annexure-1: Pre Qualifying criteria
2. Annexure-2: Check List
3. Annexure-3 Technical Pre qualifying criteria
4. Annexure-4 Annexure to Pre-Qualifying Criteria
5. Annexure-5 Additional Requirements
6. Annexure-6 Void
7. Annexure-7 Declaration for Reverse auction
8. Annexure-8 Void
9. Annexure-A Crane Technical Requirements
10. Other documents as per this NIT

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ANNEXURE - 1

PRE QUALIFYING CRITERIA

JOB		Hiring of One number 500MT or higher capacity Tyre mounted hydraulic telescopic boom crane for Erection and De-erection of 180MT capacity additional erection trolley at NPCIL, KKNPP, Kudankulam, 1000MWe- U#2.		
Tender No.		BHEL/PSSR/SAS/SCT/DK23119-029/T-15/19-20		
SI. No.		PRE QUALIFICATION CRITERIA		
		Bidders claim in respect of fulfilling the PQR Criteria		
		Name and Description of qualifying criteria	Page no of supporting document. Bidder must fill up this column as per applicability	
A Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)		Not Applicable		
B Technical				
<p>The bidder should have provided at least one crane of 500 MT or above capacity Tyre mounted hydraulic telescopic boom on Hire for similar nature of work in last 7 years as on the date of Technical bid opening.</p> <p>Vendor should submit the Work Order and Proof of Deployment.</p> <p>AND</p> <p>The crane offered by the bidder must meet the technical requirements of BHEL as mentioned in Annexure-A</p>		Applicable	To be filled in Annexure-4	
C FINANCIAL Turnover Bidders must have achieved an average annual financial turnover (Audited) of Rs.60,00,000/- (Rupees Sixty Lakhs only) or more over last three Financial Years (FY) i.e., 2016-17, 2017-18 and 2018-19.		Applicable	To be filled in Annexure-4	
C-2 Net worth (only in case of Companies)		Applicable	To be filled in Annexure-4	

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	Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive		
C-3	<p>Profit Bidder must have earned profit in any one of the three Financial Years as applicable in the last three Financial Years as furnished for 'C-1' above.</p>	Applicable	To be filled in Annexure-4
D	Assessment of Capacity of Bidder to execute the work as per Sl. No 9 of NIT (if applicable)	Not Applicable	By BHEL
E	<p>Approval of Customer (if applicable) <u>Note:</u> Names of bidders who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval.</p>	Not Applicable	BY BHEL
F	Submission of all documents as prescribed in the tender including "No Deviation certificate".	Applicable	
G	<p>Price Bid Opening <u>Note:</u> Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to F</p>	Applicable	BY BHEL
H	Consortium criteria (if applicable)	Not Applicable	To be filled in Annexure-4
	<p><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></p> <ol style="list-style-type: none"> 1. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above along with all annexures. 2. In case audited financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e. total divided by three. 3. 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. 4. C-2:-NETWORTH: Shall be calculated based on the latest Audited Accounts as furnished for C-1 above. Net worth =Paid up share capital* + reserves 		

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	<p>(* Share capital OR Partnership Capital OR Proprietor Capital as the case may be) (Net worth is required to be evaluated in case of companies).</p> <p>5. C-3:- PROFIT : shall be PBT earned during any one year of the three financial years as in C-1 above</p> <p>6. For Evaluation of PQR, the credential of the Bidder alone, and not that of the Group Company shall be considered.</p>
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Note:

- (i) BIDDER SHALL SUBMIT PRE-QUALIFICATION CRITERIA FORMAT (Refer Annexure-4), DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND PROOF OF DEPLOYMENT ETC. IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.
- (ii) **Authenticity of Credentials submitted by the Bidder against 'Pre-Qualifying Criteria' shall be verified from the Issuing Authority, by BHEL. In case, any credential(s) is/are found to be unauthentic, offer of the bidder is liable to be rejected. BHEL reserves the Right to initiate any further action as per the "Guidelines for Suspension of Business Dealings with Suppliers/Contractors" (Published in http://www.bhel.com/vender_registration/vender.php) and "Fraud Prevention Policy" (Published in <http://www.bhel.com/home.php>) as applicable.**

NOTICE INVITING TENDER

ANNEXURE - 2

CHECK LIST

NOTE: - Tenderers are required to either fill in or submit separately the following details. No column should be left blank.

1	Name and Address of the Tenderer		
2	Details about type of the Firm / Company		
3a	Details of Contact person for this Tender: Name: Mr. / Ms. Designation: Telephone No: Mobile No: Fax No: E-mail ID:		
3b	Details of alternate Contact person for this Tender: Name: Mr. / Ms. Designation: Telephone No: Mobile No: Fax No: E-mail ID:		
4	EMD DETAILS <i>(Remittance of EMD should be in line with Mode of Deposit as detailed in Vol 1A, Part-2, Chapter-1)</i>	Mode of Remittance: Ref No: Date : Amount:	
5	Validity of Offer	To be valid for six months from due date	
		Applicability (By BHEL)	Bidder Reply
6	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE-I & ANNEXURE-IV) is understood and filled with proper supporting documents referenced in the specified format	Applicable	Yes/ No
7	Submission of Copy of Balance sheet and Profit and Loss Account for the last three years (Refer "Explanatory Note for the PQR" in Annexure 1 of NIT)	Applicable	Yes/ No
8	Submission of Copy of PAN Card	Applicable	Yes/ No
9	Submission of Copy of GST registration certificate	Applicable	Yes/ No
10	Whether all pages of the Offer Documents are signed by the person authorized to sign this offer	Applicable	Yes/ No

NOTICE INVITING TENDER

11	Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed	Applicable	Yes/ No
12	Submission of Integrity Pact	Not Applicable	Yes/ No
13	Submission of Declaration by Authorized Signatory	Applicable	Yes/ No
14	Submission of No Deviation Certificate	Applicable	Yes/ No
15	Bidders are advised to make a site visit to get familiar with the work and site conditions. In case of site visit done, a Declaration confirming knowledge about Site Conditions.	Applicable	Yes/ No
16	Submission of Declaration for relation in BHEL	Applicable	Yes/ No
17	Submission of Non-Disclosure Certificate	Applicable	Yes/ No
18	Submission of Copy Bank Account Details for E-Payment	Applicable	Yes/ No
19	Submission of Capacity Evaluation of Bidder for current Tender	Not Applicable	Yes/ No
20	Submission of Tie Ups / Consortium Agreement are submitted as per format Form F22 of Book-II Vol-1D	Not Applicable	Yes/ No
21	Submission of Power of Attorney for Submission of Tender / Signing Contract Agreement	Applicable	Yes/ No
22	Submission of Analysis of Unit rates	Not Applicable	Yes/ No
23	Submission of Unquoted Price Bid	Applicable	Yes/ No
24	Tabular column showing Category- wise, month wise, man power deployment sub package wise planned for the execution of the scope of works.	Not Applicable	Yes/ No
25	Declaration by bidder for price opening through Reverse Auction (Refer Annexure-7 of Notice Inviting Tender)	Applicable	Yes/ No
26	Copy of Organization Chart	Applicable	Yes/ No
27	Copy of Registration / Incorporation certificate, Partnership Deed (Certified by Notary Public) as applicable for firm.	Applicable	Yes/ No
28	Submission of self-declaration in Company Letter head regarding working condition of the crane	Applicable	Yes/No

NOTE:

1. STRIKE OFF 'YES' OR 'NO', AS APPLICABLE.
2. TENDER NOT ACCCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.
3. For Sl. No.11 to 21 above, the formats are available in "Volume ID of Volume I Book-II – Forms and Procedures" of this tender specification.

DATE:

AUTHORISED SIGNATORY
(With Name, Designation and Company seal)

NOTICE INVITING TENDER

Annexure-3

B Technical PQR

B.1) The bidder should have provided at least one crane of 500 MT or above capacity Tyre Mounted Hydraulic Telescopic Boom on Hire for similar nature of work in last 7 years as on the date of Technical bid opening. Vendor should submit the Work Order and Proof of Deployment.

AND

B.2) The crane offered by the bidder must meet the technical requirements of BHEL as mentioned in Annexure-A.

NOTICE INVITING TENDER

ANNEXURE - 4

Additional Format to be submitted by Bidders in an additional separate cover superscribed "Annexure to Pre-Qualifying Criteria".

Name of the Bidder: M/s.....

Sl. No.	PQR Ref	PQR (Reproduced from Annexure – 1)	Qualifying Experience	Work order Ref with page no in Offer for supporting documents	Completion certificate ref for the referred Work with page no in Offer for supporting documents	Details of work with Project, Unit, Quantity / rating & Period	Remarks
1	<u>Technical B:</u>	B.1) The bidder should have provided at least one crane of 500 MT or above capacity Tyre mounted hydraulic telescopic boom on Hire for similar nature of work in last 7 years as on the date of Technical bid opening. Vendor should submit the Work Order and Proof of Deployment. AND B.2) The crane offered by the bidder must meet the technical requirements of BHEL as mentioned in Annexure-A					

NOTICE INVITING TENDER

2	<u>Financial C1</u>	TURNOVER Bidders must have achieved an average annual financial turnover (Audited) of Rs.60,00,000/- (Rupees Sixty Lakhs only) or more over last three Financial Years (FY) i.e., 2016-17, 2017-18 and 2018-19					
3	<u>Financial C2</u>	NETWORTH (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive					
4	<u>Financial C3</u>	PROFIT Bidder must have earned profit in any one of the three Financial Years as applicable in the last three Financial Years as furnished for 'C-1' above.					

Non submission of this additional format will make the bid liable for rejection.

Note: Indicate the page nos in the respective columns for the enclosed PQR supporting documents in the offer

NOTICE INVITING TENDER

ANNEXURE-5

Additional Requirements

- a. Bidder has to furnish details of the crane i.e. Complete specifications, make, model along with load chart and range diagram of the proposed crane to be deployed for the tendered job (Relevant documents in support of all the above shall be submitted by the bidder).
- b. The age of the offered cranes should not be more than 12 years on the latest due date of tender opening, with respect to year of manufacturing. Necessary documents in support of year of manufacturing of cranes shall be enclosed in the technical bid. Bidder must also furnish Insurance coverage details of the crane.
- c. The bid shall be evaluated based on the above conditions also and the bid is liable to be rejected on account of non-submission of documents satisfying above conditions.

NOTICE INVITING TENDER

ANNEXURE-6

Void

NOTICE INVITING TENDER

Annexure 7

DECLARATION BY BIDDER FOR PRICE OPENING THROUGH REVERSE AUCTION

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

To,

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

Dear Sir,

Sub : Declaration by Bidder for Price opening through Reverse Auction

Ref : 1) NIT / Tender Specification No:
2) Participation in the Reverse Auction

We have studied and understood the clauses of Reverse auction published in the tender specification.

Strike out either (1) or (2) of the following whichever is not applicable.

1. I / We, hereby declare that I / we **shall be** participating in the Reverse Auction in case BHEL opts for opening the price bid through Reverse auction.
2. I / We, hereby declare that I / we **shall not be** participating in the Reverse Auction in case BHEL opts for opening the price bid through Reverse auction.

Yours faithfully,

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

NOTICE INVITING TENDER

Annexure 8

Void

Crane Technical Requirements

Tender Ref: BHEL/PSSR/SAS/SCT/DK23119-029/T-15/19-20

Date: 19.11.2019

Hiring of One number 500MT or higher capacity Tyre mounted hydraulic telescopic boom crane for Erection and De-erection of 180MT capacity additional erection trolley at NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2.

SN	Description of Parameter/Feature	Details/Requirement
1	Number of TYRE MOUNTED TELESCOPIC CRANE	1 Nos.
2	Crane Version	Tyre mounted hydraulic telescopic boom Crane. (The bidder is advised to visit and examine the site of works and its surroundings.)
Details of Lifts (Heavy Object, High Elevations)		
3	Crane capacity	500 MT or above capacity
4	Min. Length of Main Boom	50 Meter.
5	Jib/Extension	Suitable extension/jib should be provided to lift the load at required height as per site requirement. Suitable counter weights to be provided as per lifting requirement.
6	Load criteria	Minimum 25MT Lifting capacity required at a radius of 40 m at a boom length of 70-75 m
7	Crane type	Tyre mounted hydraulic telescopic boom Crane.
8	Mechanism	Hoisting, Slewing, trolleying etc
9	Safety Devices Required	The crane shall be provided with all kinds of safety devices including load limiter, height limiter, slewing limiter, trolley brake etc. which are all mechanical & Electrical integration products, sensitive and reliable with the capability of working in construction site environment
10	Protective facilities with the crane	Protective facilities for operator's personal safety when moving up & down. Bidder shall specifically indicate the climbing facility provided with the crane.
11	Electrical power requirement to operate the crane	NA
12	Minimum free standing height of the crane and external Anchoring details	Free Standing height –without any lateral support
13	Wind speed limitation	Wind speed limitation considering storm conditions as per standard to be indicated by bidder.
14	THE AGE OF THE CRANE	The age of crane shall not be more than 12 (Twelve) years old. Relevant documents should be attached in support of the same.

VOLUME – IA
Part I & II

TECHNICAL
CONDITIONS OF
CONTRACT
(TCC)

BHARAT HEAVY ELECTRICALS LIMITED

TECHNICAL CONDITIONS OF CONTRACT (TCC)

CONTENTS

Sl no	DESCRIPTION	Chapter	No. of Pages
Vol IA	Part-I: Contract specific details		
1	Project Information	Chapter-I	2
2	Scope of works	Chapter-II	3
3	Facilities in Scope of Contractor / BHEL (Scope Matrix)	Chapter-III	4
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV	1
5	T&Ps and MMEs to be deployed by BHEL on sharing basis	Chapter-V	1
6	Contract Period	Chapter-VI	1
7	Normal Working Hours	Chapter-VII	1
8	Instructions to Rate Schedule	Chapter-VIII	1
9	Terms of Payment	Chapter-IX	1
10	Taxes and Duties	Chapter-X	3
11	Specific Terms and Conditions	Chapter-XI	3
12	General	Chapter-XII	4
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Vol IA	Part-II		
1	Corrections/Revisions in GCC Forms and Procedures	Chapter-I	9
2	HSE plan for site operations by subcontractor	Chapter-II	72

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME - IA PART – I CHAPTER – I

1.1. PROJECT INFORMATION

1.1	Project Title	:	NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2
1.2	Plant capacity	:	1000 MWe
1.3	Owner	:	Nuclear Power Corporation of India Limited
1.4	Plant site location	:	Kudankulam P.O, Radhapuram Taluk, Tirunelveli District, Tamil Nadu. Pin code : 627106
1.5	Nearest Village	:	Kudankulam
1.6	Nearest Town & City	:	Nagercoil @ 40 KM
1.7	Nearest Railway Station	:	Kanyakumari @27 KM
1.8	Nearest Airport	:	Tuticorin Domestic AirPort @ 111 KM Thiruvananthapuram AirPort @ 126 KM
1.9	Nearest Approach	:	Available

VOLUME-IA PART-I CHAPTER – II

SCOPE OF WORKS

The scope of the work will comprise of but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

1.2. SCOPE OF WORK IN GENERAL:

- 1.2.1. Hiring of One number 500MT or higher capacity Tyre mounted hydraulic telescopic boom crane for Erection and De-erection of 180MT capacity additional erection trolley at NPCIL, KKNPP, Kudankulam, 1000MWe-Unit.No.2. This 180MT capacity additional erection trolley is to be mounted on existing crane girder. Existing crane girder elevation is 31 meter from ground level. The crane hook is to be inserted through an opening in turbine roof (roof height 40 meters from ground level). Please refer to Schematic load lifting arrangement as per Figure-A. The roof opening shall be provided for Crane hook entry as per Figure-B. Roof opening is not in crane supplier's scope. Crane offered should be with suitable fixed/luffing Jib configuration to meet following requirements.

- 1.2.2. Crane Main boom should not be less than 50 meters. Crane Main boom mounted with Jib Combination shall be capable of lifting a minimum Load of 25 MT below hook (excluding weight of hook block, slings, wire ropes and other lifting tackles) at a load radius of approx. 40 meters. The particulars of approximate loads to be lifted are mentioned below.

The total weight of Trolley - 46 T (Consists of the following components to be lifted individually, assembly (not in crane supplier scope) shall be carried out by BHEL after placing the components on existing Crane Girder)

i. Weight of Drum assembly without ropes	- 10 T
ii. weight of wire rope	- 03 T
iii. Weight of Reducer (Gear Box)	- 07 T
iv. Weight of upper sheaves	- 01 T
v. Weight of trolley frame will be	- 25 T

- 1.2.3. Crane supplier has to arrange suitable hook blocks, counter weights and slings required for lifting of the above mentioned loads. Any special lifting

TECHNICAL CONDITIONS OF CONTRACT (TCC)

tackles (if required) shall be arranged by BHEL.

- 1.2.4. The bidder shall provide the crane with all accessories, operator cum mechanic, helper, service and maintenance staff, fuel and all other auxiliaries as per the requirement at site from time to time.
- 1.2.5. The crane deployed should have valid load test certificates by the Competent Person of certified third party agency before the Crane is put into operation.
- 1.2.6. The Bidder should submit valid test certificate for the crane to be deployed at site. Trial Load test has to be conducted at site before lifting of the Trolley for which necessary load materials shall be provided by BHEL.

NOTICE INVITING TENDER

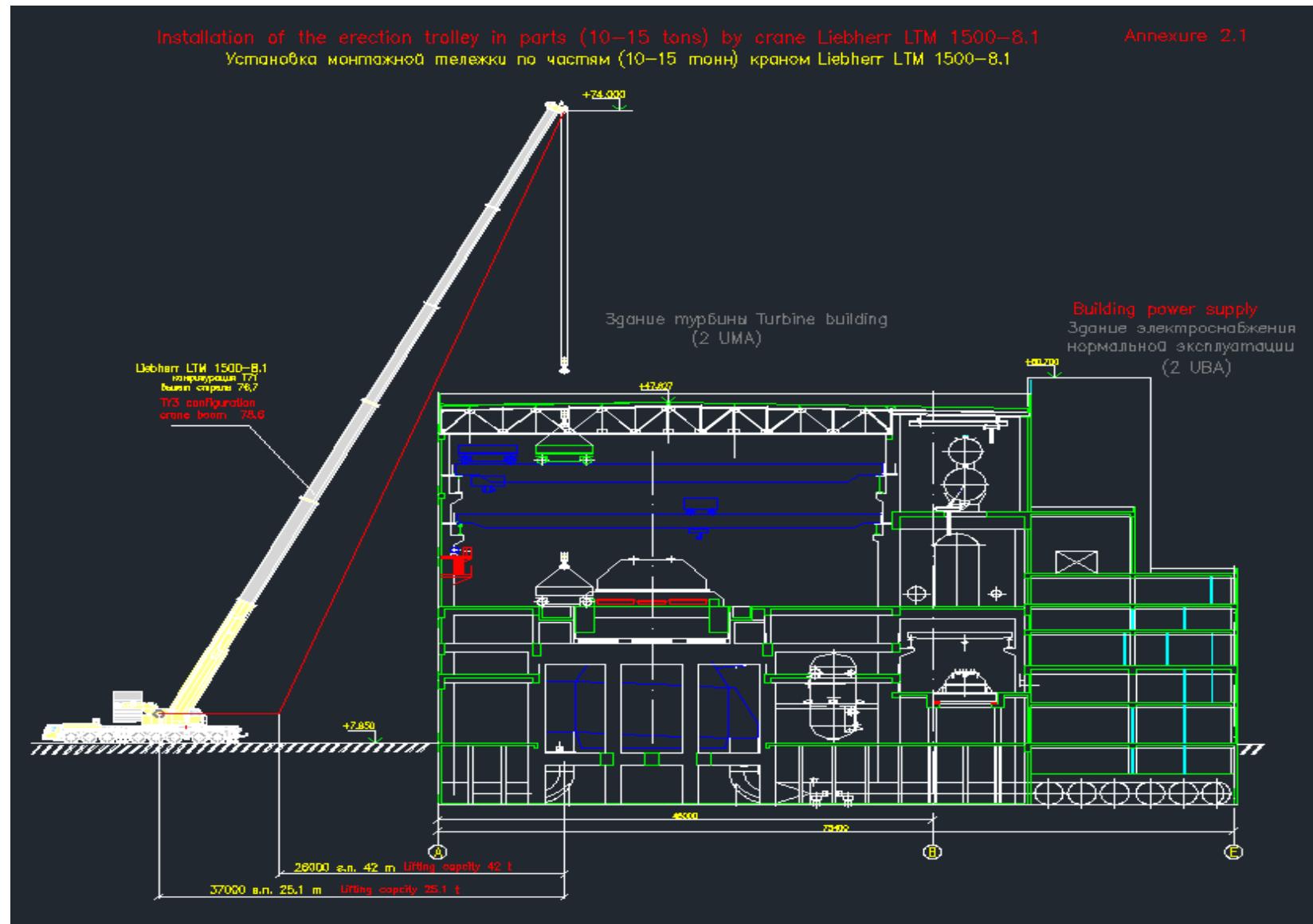


Figure-A. Schematic load lifting arrangement

NOTICE INVITING TENDER

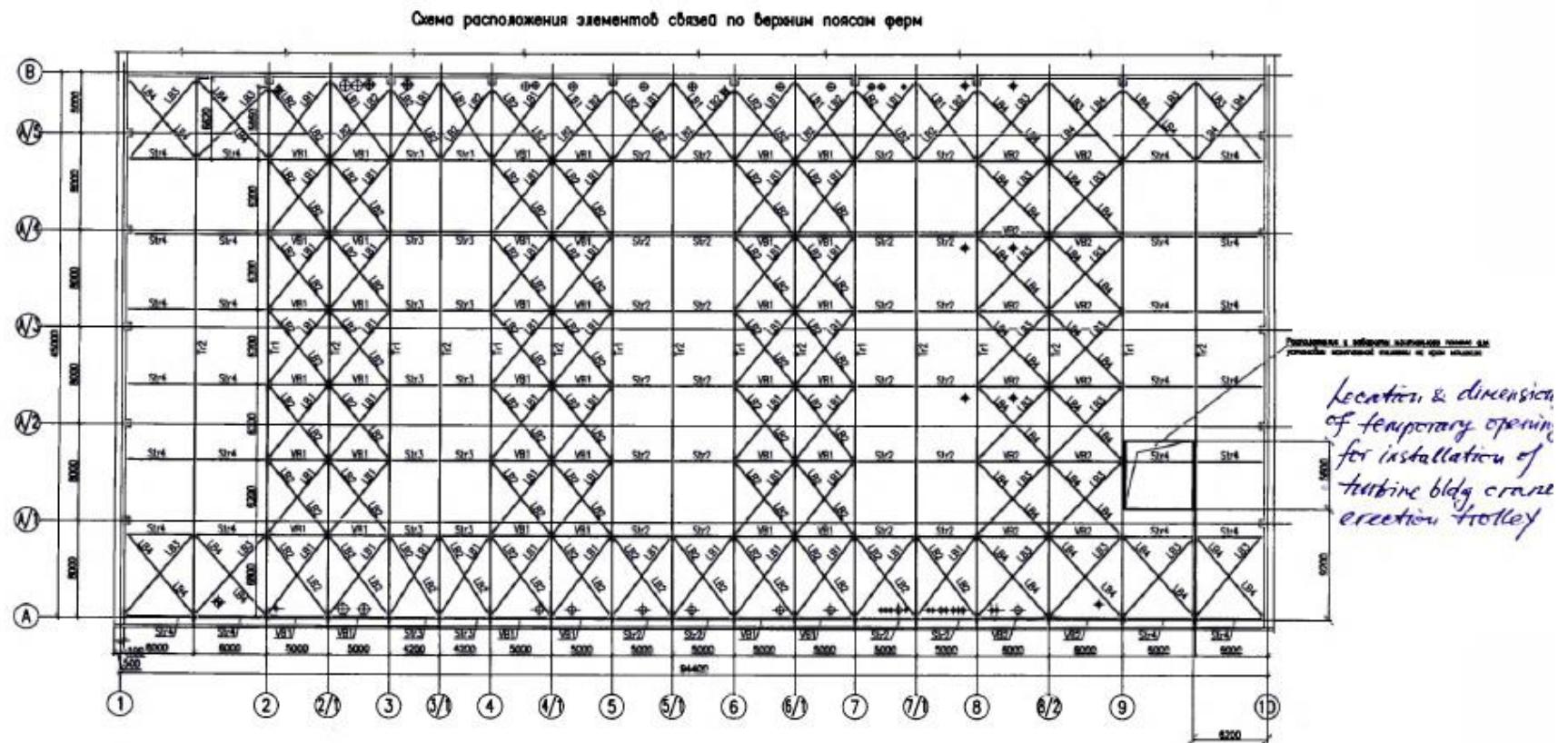


Figure-B. Roof opening for hook entry

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME IA PART – I CHAPTER – III

1.3. FACILITIES IN THE SCOPE OF CONTRACTOR / BHEL (SCOPE MATRIX)

1.3.1. PART 1

Sl.No.	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
1.3.1	PART I			
1.3.1.1	ESTABLISHMENT			
1.3.1.1.1	FOR CONSTRUCTION PURPOSE:			
1.3.1.1.1.1	Open space for office	Yes		
1.3.1.1.1.2	Open space for storage	Yes		
1.3.1.1.1.3	Construction of bidder's office, canteen and storage building including supply of materials and other services		Yes	
1.3.1.1.1.4	Bidder's all office equipments, office / store / canteen consumables		Yes	
1.3.1.1.1.5	Canteen facilities for the bidder's staff, supervisors and engineers etc		Yes	
1.3.1.1.1.6	Firefighting equipments like buckets, extinguishers etc		Yes	
1.3.1.1.1.7	Fencing of storage area, office, canteen etc of the bidder		Yes	
1.3.1.1.2	FOR LIVING PURPOSES OF THE BIDDER			
1.3.1.1.2.1	Open space		Yes	
1.3.1.1.2.2	Living accommodation		Yes	
1.3.1.2	ELECTRICITY			
1.3.1.2.1	Electricity of Voltage 415 / 440 V For construction purposes			
1.3.1.2.1.1	Single point source		Yes	.
1.3.1.2.1.2	Further distribution for the work to be done which include supply of materials and execution		Yes	
1.3.1.2.2	Electricity for the office, stores, canteen, labour colony etc of the bidder which include:		Yes	
1.3.1.2.2.1	Distribution from single point including supply of materials and service		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Sl.No.	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
1.3.1	PART I			
1.3.1.2.2.2	Supply, installation and connection of material of energy meter including operation and maintenance		Yes	
1.3.1.2.2.3	Duties and deposits including statutory clearances for the above		Yes	
1.3.1.2.2.4	Demobilization of the facilities after completion of works		Yes	
1.3.1.2.3	Electricity for living accommodation of the bidder's staff, engineers, supervisors etc on the above lines		Yes	
1.3.1.3	WATER SUPPLY			
1.3.1.3.1	For construction purposes:			
1.3.1.3.1.1	Making the water available at single point		Yes	
1.3.1.3.1.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
1.3.1.3.2	Water supply for bidder's office, stores, canteen etc		Yes	
1.3.1.3.2.1	Making the water available at single point		Yes	
1.3.1.3.2.2	Further distribution as per the requirement of work including supply of materials and execution		Yes	
1.3.1.4	LIGHTING			
1.3.1.4.1	For construction work (supply of all the necessary materials) At office storage area At the preassembly area At the construction site /area		Yes	
1.3.1.4.2	For construction work (Execution of the lighting work / arrangements) At office storage area At the preassembly area At the construction site /area		Yes	

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Sl.No.	Description	Scope to be taken care by		Remarks
		BHEL	Bidder	
1.3.1	PART I			
1.3.1.5	COMMUNICATION FACILITIES for site operations of the bidder	-		
1.3.1.5.1	Telephone, Fax, internet, intranet, email etc		Yes	
1.3.1.6	COMPRESSED AIR SUPPLY			
1.3.1.6.1	Supply of Compressor and all other equipments required for compressor & compressed air system including pipes, valves, storage systems etc	-	Yes	
1.3.1.6.2	Installation of above system and operation & maintenance of the same	-	Yes	
1.3.1.6.3	Supply of the all the consumables for the above system during the contract period		Yes	

1.3.2. Open Space

- 1.3.2.1. Minimum Open space as made available by customer will be provided at free of charges to the contractor, for construction of temporary office shed, contractor's stores shed(s) and crane assembly / fabrication (space provided by BHEL for assembly/fabrication shall be free of vegetation (trees and bushes)). Consolidated levelled ground facilitating crane movement shall be provided by BHEL.
- 1.3.2.2. BHEL shall not provide to the contractor any residential accommodation to any of his staff and the contractor has to make his own arrangements. Contractor has to make his own arrangements for labour colony.
- 1.3.2.3. Location and area requirement for office / storage sheds / fabrication yard shall be discussed and mutually agreed to.

1.3.3. ELECTRICITY:

- 1.3.3.1. Contractor shall make his own arrangement for Electricity requirement. Further distribution shall be arranged by the contractor at his cost.
- 1.3.3.2. BHEL is not responsible for any loss or damage to the contractor's equipment as a result of variations in voltage / frequency or interruptions in power supply.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.3.3.3. Any duty, deposit involved in getting the Electricity shall be borne by the bidder. As regards to contractor's office shed also, all such expenditure shall be borne by the contractor.
- 1.3.3.4. Contractor has to make his own arrangements for his electricity requirement for his labour colony at his cost.

1.3.4. **CONSTRUCTION WATER**

Water shall not be provided by BHEL and contractor has to make his own arrangement for construction water, if required and further distribution, if any.

1.3.5. **DRINKING WATER**

Bidder shall provide drinking water at the work spot at their cost.

1.3.6. **CONTRACTOR'S OBLIGATION ON COMPLETION**

On completion of the work, all temporary buildings, structures, cables etc. shall be dismantled and leveled and debris shall be removed by the contractor at his cost. In the event of failure to do so, the expenditure towards clearance of the same will be recovered from the contractor. The decision of BHEL Engineer in this regard is final.

VOLUME-IA PART-I CHAPTER – IV

T&PS and MMEs TO BE DEPLOYED BY CONTRACTOR

- 1.4. The following minimum major Tools & Plants and MMEs shall be deployed by the contractor for execution of this contract with in the quoted rate:**
 - 1.4.1. Necessary tools and tackles and crane spares should be made available by the bidder immediately to attend the break downs.**
 - 1.4.2. Necessary structural supports / stands that are required for resting booms etc., for booms extension and reduction and supervision/ guidance for the above job are included in the scope of bidder.**
 - 1.4.3. Fuel and consumables for the operation of crane has to be arranged by the bidder. The rate quoted for monthly hire charges shall be inclusive of fuel and consumables. Incase contractor fails to provide the required fuels, consumable etc., in time, BHEL reserves the right to supply the same and deduct the cost from contractor's (Crane hiring agency) bill with applicable overhead charges. For recording the hours of operation, vendor is required to maintain a separate register at site, which shall be certified by site engineer.**

VOLUME-IA PART-I CHAPTER - V
T&Ps AND MMEs TO BE DEPLOYED BY BHEL ON SHARING BASIS

- 1.5. List of T&Ps to be made available by BHEL to contractor free of hire charges on sharable basis.
 - 1.5.1. Please refer the Chapter -11 -Specific Terms and Conditions for Tools & Plants (T & Ps) that shall be provided by BHEL

VOLUME-IA PART-I CHAPTER - VI

CONTRACT PERIOD

1.6. CONTRACT PERIOD

- 1.6.1. The date of commencement of contract period shall be the date of receipt of clearance from BHEL PSSR SAS Secunderabad.
- 1.6.2. Hiring of the crane shall be for a period of 2 (Two) months commencing from the date of commissioning at site.
- 1.6.3. The crane with all accessories shall have to be transported & physically mobilized including operator, helper, commissioned and handed over to BHEL at BHEL Site office, NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2, within 7 days from the date of issue of LOI and receipt of clearance from BHEL PSSR SAS Secunderabad.
- 1.6.4. Similarly, the crane shall be demobilized from site within 15 days from the date of intimation by BHEL PSSR SAS Secunderabad for demobilization.
- 1.6.5. Deployment month: December 2019 1st week (Tentative)
- 1.6.6. In case of exigency site requirement, BHEL reserve the right to further extend the contract beyond contractual period, at the same terms and conditions of Tender with rate as per Clause 1.8.4 of the 'Instructions to rate Schedule'.
- 1.6.7. If the performance of the crane is not satisfactory, the contract may be terminated at any time during the contract period.
- 1.6.8. Fore closure of Contract: BHEL reserves the right to short close the contract, if the crane deployed at site is no more required, at any stage of the contract with a notice period of 7 days for short closure without any compensation to the contractor. Hiring charges of the crane, in such case shall be paid on pro rata basis of the monthly rate for the no. of days worked at site.

VOLUME-IA PART-I CHAPTER - VII

1.7. NORMAL WORKING HOURS

- 1.7.1. The crane with operator and helpers should be available for service at site on all the working days minimum 12 hours per day including 1-hour break and 26 days per month excluding Sundays or Weekly holidays. Timings shall be fixed by sites as per the operational convenience.
- 1.7.2. Allotment of weekly and other holidays for crane crew is at the discretion of BHEL and will be decided by BHEL NPCIL, KKNPP, Kudankulam, 1000MWe-Unit.No.2 site according to the requirements from time to time. Only holidays as declared by BHEL apart from weekly holidays have to be followed. This may have to be adjusted by crane operator and his crew to suit the requirement of site. If necessary, Operator with his crew shall be available for the operation of their crane round the clock at normal working days and holidays in exigency.
- 1.7.3. Holiday working and extended hour working shall be at the discretion of BHEL site in charge.

VOLUME-IA PART-I CHAPTER - VIII

1.8. INSTRUCTIONS TO RATE SCHEDULE

1.8.1. Rates for Monthly Hire Charges of the Crane for Two (2) months inclusive of Operator cum Mechanic, helper, maintenance staff, all consumables such as fuel, lubricants, grease, filters etc., based on the Normal working hours as mentioned in clause 1.7 above including Mobilization and De-mobilization charges together for the crane to & from site are to be quoted as "A" in the Price Schedule Format as per Price bid. Evaluation of the Price Bid will be done based on this quoted rate "A".

1.8.2. **Monthly Charges:**

Based on the quoted rate, Monthly Charges for Crane Hiring would be fixed as per Formula = $(Ax0.8)/ (2)$, where 2 is the number of Months of Hiring under this contract.

1.8.3. **Mobilization and De-Mobilization Charges:**

1.8.3.1. Mobilization Charges would be fixed as per formula = $(Ax0.1)$ and

1.8.3.2. Demobilization Charges would also be fixed as same, as that of Mobilization charges, i.e., as per formula = $(Ax0.1)$.

1.8.4. In case of extension of Hiring period beyond two months, if any, the Monthly Hire Charges will be paid as 90% of the monthly hire charges agreed for the regular contract/hiring period and no changes will be made in mobilization & Demobilization charges. The charges during extended hiring period (beyond two months) shall be paid on pro-rata basis as per below formula

Monthly hire charges x 0.9 x No. of days deployed

26 days

1.8.5. Contractor shall fully understand equipment description and scope of work before quoting. The scope of work and responsibility of the contractor as mentioned under these specifications shall be covered within the quoted rates.

1.8.6. The tenderer shall quote the rates as per the rate schedule only, in part II price bid (Original). Conditional price bid or price bid with any deviation / clarification etc. are liable to be rejected.

VOLUME-IA PART-I CHAPTER - IX **TERMS OF PAYMENT**

1.9. Terms of payment:

- 1.9.1. PVC, ORC, Secured Advance & Advance for Mobilization are not applicable for this tender.
- 1.9.2. Performance Security Deposit as per SI No: 10 of Volume 1A Part II Chapter 1 is not applicable for this Tender.
- 1.9.3. 100% Payment of monthly agreed hire charges (for the crane utilized hours as certified by BHEL Engineer) will be made once in a month at NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2 site as per the terms and conditions.
- 1.9.4. Mobilization and demobilization charges shall be payable as per point 1.8 above. Payment of mobilization charges shall be made at NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2 site on successful commissioning and load testing of the crane by the Tenderer as certified by the BHEL Engineer In charge.
- 1.9.5. Payment of demobilization charges shall be made at NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2 site on receipt of written confirmation from site In charge of BHEL that crane has been dismantled and removed from site in all respects by the Tenderer.
- 1.9.6. Contractor has to make his own arrangement at his cost for completing the formalities, for bringing all their material, and equipment etc., at site or the execution of the work, including arrangement of Road Permits if and as applicable under the relevant acts, etc.,
- 1.9.7. Note:
 - 1.9.7.1. RA bill payments as per Chapter-X of SCC (Volume IB).
 - 1.9.7.2. Refer Part-II, Chapter-1 of Technical Conditions of Contract (TCC) for Corrections & Revisions in GCC & SCC.

VOLUME-IA PART-I CHAPTER - X **TAXES AND OTHER DUTIES**

1.10. TAXES

1.10.1. **Goods and service Tax (GST) & Cess**

- 1.10.1.1. The successful bidder shall furnish proof of GST registration with GSTN Portal in the State in which the Project is being executed, covering the services under this contract. Registration should also bear endorsement for the premises from where the billing shall be done by the successful bidder on BHEL for this project/ work.
- 1.10.1.2. Contractor's price/rates shall be exclusive of GST & Cess (if applicable) (herein after termed as GST). Contractor shall submit to BHEL the GST compliant tax invoice/debit note/revised tax invoice on the basis of which BHEL will claim the input tax credit in its return. Since this is a works contract, the applicable rate shall be @ 18% GST, as applicable presently.
- 1.10.1.3. Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules wherein the 'Bill To' details will be as below:

BHEL GSTN	- 33AAACB4146P2ZL
ADDRESS	– BHEL site office, Kudankulam PO, Rathapuram Taluk, Tirunelveli Dt. Tamilnadu - 627106”.

- 1.10.1.4. GST charged in the tax invoice/debit note/revised tax invoice by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return.
- 1.10.1.5. In case BHEL has to incur any liability (like interest / penalty etc.) due to denial/reversal / delay of input tax credit in respect of the invoice submitted by the contractor, for the reasons attributable to the contractor, the same shall be recovered from the contractor.
- 1.10.1.6. Further, in case BHEL is deprived of the Input tax credit due to any reason attributable to contractor, the same shall not be paid or Recovered if already paid to the contractor.
- 1.10.1.7. Tax invoice/debit Note/revised tax invoice shall contain all such particulars as prescribed in GST law and comply to the timelines for issue of the same. Invoices shall be submitted on time to the concerned BHEL Engineer In Charge.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.10.1.8. TDS under GST is applicable and the same shall be deducted at prevailing rates on gross invoice value from the running bills.
- 1.10.1.9. E-way bills / Transit passes / Road Permits, if required for materials / T&P etc., bought into the project site is to be arranged by the Contractor only.
- 1.10.1.10. BHEL shall not reimburse any amounts towards any interest / penalty etc., incurred by contractor. Any additional claim at a later date due to issues such as wrong rates / wrong classification by contractor shall not be paid by BHEL.

1.10.2. All taxes and duty other than GST & Cess

- 1.10.2.1. The contractor shall pay all (except the specific exclusion viz GST & Cess) taxes, fees, license charges, deposits, duties, tools, royalty, commissions, Stamp Duties, or other charges / levies, which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract and the same shall not be reimbursed by BHEL. In case BHEL is forced to pay any of such taxes, BHEL shall have the right to recover the same from his bills or otherwise as deemed fit.

1.10.3. Statutory Variations

- 1.10.3.1. Statutory variations are applicable under the GST Acts, against production of proof. The changes implemented by the Central / State Government during the tenure of the contract viz. increase / decrease in the rate of taxes, applicability, etc. and its impact on upward revision / downward revision are to be suitably paid/ adjusted from the date of respective variation. The bidder shall give the benefit of downward revision in favour of BHEL. No other variations shall be allowed during the tenure of the contract.

1.10.4. New Taxes/Levies –

- 1.10.4.1. In case Government imposes any new levy / tax after submission of bid during the tenure of the contract, BHEL shall reimburse the same at actual on submission of documentary proof of payment subject to the satisfaction of BHEL that such new levy / tax is applicable to this contract.

1.10.5. Direct Tax

- 1.10.5.1. BHEL shall not be liable towards Income Tax of whatever nature including variations thereof arising out of this contract as well as tax liability of the bidder and their personnel. Deduction of tax at source at the prevailing rates shall be effected by BHEL before release of payment as a statutory obligation, unless exemption certificate is produced by the bidder. TDS certificate will be issued by BHEL as per the provisions of Income Tax Act.

VOLUME-IA PART-I CHAPTER -XI

1.11. SPECIFIC TERMS AND CONDITIONS

- 1.11.1. Working on holidays and Sundays and extended hour working beyond Normal Working Hours shall be considered as overtime. For Contract period, Overtime (OT) is payable pro rata at 25% of the monthly accepted crane hiring charges and for extended period of hiring, OT shall be worked out pro rata at 25% of accepted monthly hire charges at the time of extension, the calculation is as below.
- 1.11.2. Calculation for hourly rate for Holiday working and extended hour working within Contract Period of hiring =
$$\frac{\text{Monthly hire charges} \times 0.25}{26 \text{ days} \times 12}$$
- 1.11.3. Calculation for Holiday working and extended hour working for extended period of hiring beyond the Contract Period =
$$\frac{\text{Monthly hire charges for extended period (Agreed monthly hire charges} \times 0.9) \times 0.25}{26 \text{ days} \times 12}$$
- 1.11.4. Crane deployed at site should preferably be same as offered in the bid. BHEL Reserves the right to accept or reject any crane, other than offered crane in the bid. In case the bidder decides to deploy any other crane (other than offered in the bid) of the same or better specification, due to reasons attributable to BHEL, its acceptance shall solely be at BHEL's discretion. In such a case, the bidder shall furnish complete details of the crane proposed to be deployed and deployment shall be done only after permission from BHEL.
- 1.11.5. Vendor has to arrange supporting cranes including fuel and operator for unloading from trailer, Assembly, commissioning, dismantling and loading of the hired crane at site.
- 1.11.6. For boom extension and reduction of the hired crane, vendor has to arrange assist crane along with fuel and Operator.
- 1.11.7. Regular/Breakdown Maintenance Period of One day per Month shall be permitted. The same shall be decided in consultation with BHEL Engineer.
- 1.11.8. The Accepted rate shall remain firm throughout the contract period.
- 1.11.9. In case of exigency of site requirements, BHEL reserve the right to further extend the contract beyond contractual period. However monthly hire charges for the extended period shall be 90% of the monthly hire charges agreed for the regular contract/hiring period.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.11.10. The accepted rate shall be inclusive of maintenance and operation of the crane. The bidder should provide one mechanic cum Operator and helpers as required for operation and maintenance of their cranes at site without affecting the work.
- 1.11.11. No Advance payment will be made by BHEL for this contract.
- 1.11.12. The crane to be offered should be in good working condition as on date of opening of Technical bid and Bidders to submit a self-declaration in their letter head for the same.
- 1.11.13. The deployed crane should give trouble free operation without affecting the erection work.
- 1.11.14. The bidder must maintain and operate crane regularly at site with their man power. Breakdown/repair should be immediately attended by the bidder. The bidder shall maintain a log book giving full operation, routine/ preventive maintenance and break down details and obtain signature of Engineer In charge of site on a daily basis or as per the site procedure. Original log sheets shall be submitted to BHEL at the end of every month and before submission of monthly bills at site.
- 1.11.15. The cost of any repair arising during the operation should be borne by the bidder.
- 1.11.16. Necessary tools and tackles and crane spares should be made available by the bidder immediately to attend the break downs.
- 1.11.17. In case of absence of operator, the bidder should make an alternative arrangement for the continuation of work to meet the erection requirement of site.
- 1.11.18. Shifting of crane in the same site from one location to other location and time period required for extending and reducing the booms shall be considered as hiring period.
- 1.11.19. Man power required for boom extension and reduction of the hired crane shall be arranged by the bidder.
- 1.11.20. Bidder shall arrange the entry gate pass for their crew for which necessary documents will be forwarded by BHEL.
- 1.11.21. Crane operators deployed under this contract should possess valid license for crane operation. Necessary documents are to be submitted at site while deploying the operator.
- 1.11.22. Bidder shall be required to take Comprehensive Insurance Policy for the crane with Third Party Liability cover as well as adequate Insurance for Bidder's

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Crew before deployment of the crane at site. If due to negligence and of non-observation of safety and other precautions, any accident/injury occurs to any other persons/public/property, the bidder shall have to pay necessary compensation and other expenses, if so decided by the appropriate authorities/Statutory Authority.

1.11.23. 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.

1.11.24. **Penalty**

1.11.24.1. If the crane could not be utilized due to any failure of the crane, over and above the regular/Breakdown maintenance period of one day, the proportional amount towards Crane Hire charges, for the total hours taken for making the crane operational shall not be paid.

1.11.24.2. If the non-availability of the crane extends beyond one week after regular maintenance period, then additionally Penalty will be charged @ rate of 10% of the Daily Hire Charges, for every day of non-availability (including intervening Sundays and holidays), limited to 10% of the Awarded Contract Value or Executed Contract value, whichever is higher.

1.11.24.3. In case of total failure of the crane at site, the contractor should substitute a similar crane within one week. Failing which, BHEL may engage a suitable crane at the Risk and Cost of the Contractor as per Clause 2.7 of GCC. The decision of BHEL in this regard shall be final and binding on the contractor.

VOLUME-IA PART-I CHAPTER -XII GENERAL

1.12. The scope of the work will comprise of but not limited to the following:

(All the works mentioned hereunder shall be carried out within the accepted rate unless otherwise specified.)

- 1.12.1. Payment Bidders are requested to furnish the following at PSSR SAS Secunderabad immediately after release of Letter of Intent (LOI)
 - I. Security Deposit and Additional Security Deposit.
 - II. Unqualified Acceptance for Detailed LOI/ Work Order.
 - III. Rs.100/- Stamp Paper for preparation of Contract Agreement.
- 1.12.2. Bidders are requested to furnish the proof of documents for the following at BHEL NPCIL, KKNPP, Kudankulam, 1000MWe- Unit.No.2 Site
 - I. PF Regn No.
 - II. Labour License No.
 - III. Workmen Insurance Policy No.
- 1.12.3. In addition to the clause 2.8 of General Conditions of Contract (Volume-1C of Book-II) the contractor shall comply with the following.
 - 1.12.3.1. BOCW Act & BOCW Welfare Cess Act
 - 1.12.3.1.1. The Contractor Should Register their Establishment under BOCW Act 1996 read with rules 1998 by submitting Form I (Application for Registration of Establishment) and Form IV (Notice of Commencement / Completion of Building Other Construction Work) to the respective Labour Authorities i.e.,
 - a) Assistant Labour Commissioner (Central) in respect of the project premises which is under the purview of Central Govt.–NTPC, NTPL etc.
 - b) Appropriate State Authorities in respect of the project premises which is under the purview of State Govt/others
 - 1.12.3.1.2. The Contractor should comply with the provisions of BOCW Welfare Cess Act 1996 in respect of the work awarded to them by BHEL
 - 1.12.3.1.3. The contractor should ensure compliance regarding Registration of Building Workers as Beneficiaries, Hours of work, welfare measures and other conditions of service with particular reference to Safety and Health measures like Safety Officers, safety committee, issue of Personal protective equipments, canteen, rest room, drinking water, Toilets, ambulance, first aid centre etc

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.12.3.1.4. The contractor irrespective of their nature of work and manpower (Civil, Mechanical, Electrical works etc) should register their establishment under BOCW Act 1996 and comply with BOCW Welfare Cess Act 1996.
- 1.12.3.1.5. "Non-compliance to Provisions of the BOCW Act & BOCW Welfare Cess Act is not acceptable. In case of any non-compliance , BHEL reserves the right to withhold any sum as it deems fit. Only upon total compliance to the BOCW Act and also discharge of total payment of Cess under the BOCW Cess Act by the Contractor, BHEL shall consider refund of the Amounts ".

1.12.3.2. PROVIDENT FUND

- 1.12.3.2.1. The contractor is required to extent the benefit of Provident Fund to the labour employed by you in connection with this contract as per the Employees Provident Fund and Miscellaneous Provisions Act 1952. For due implementation of the same, you are hereby required to get yourself registered with the Provident Fund authorities for the purpose of reconciliation of PF dues and furnish to us the code number allotted to you by the Provident Fund authorities within one month from the date of issue of this letter of intent. In case you are exempted from such remittance an attested copy of authority for such exemption is to be furnished. Please note that in the event of your failure to comply with the provisions of said Act, if recoveries therefore are enforced from payments due to us by the customer or paid to statutory authorities by us, such amount will be recovered from payments due to you.
- 1.12.3.2.2. The final bill amount would be released only on production of clearance certificate from PF / ESI and labour authorities as applicable.

1.12.3.3. OTHER STATUTORY REQUIREMENTS

- 1.12.3.3.1. The Contractor shall submit a copy of Labour License obtained from the Licensing Officer (Form VI) u/r25 read with u/s 12 of Contract Labour (R&A) Act 1970 & rules and Valid WC Insurance copy or ESI Code (if applicable) and PF code no along with the first running bill.
- 1.12.3.3.2. The contractor shall submit monthly running bills along with the copies of monthly wages (of the preceding month) u/r78(1)(a)(1) of Contract Labour Rules, copies of monthly return of PF contribution with remittance Challans under Employees Provident Fund Act 1952 and copy of renewed WC Insurance policy or copies of monthly return of ESI contribution with Challans under ESI Act 1948 (if applicable) in respect of the workmen engaged by them.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.12.3.3.3. The Contractor should ensure compliance of Sec 21 of Contract Labour (R&A) Act 1970 regarding responsibility for payment of Wages. In case of "Non-compliance of Sec 21 or non-payment of wages" to the workmen before the expiry of wage period by the contractor, BHEL will reserve its right to pay the workmen under the orders of Appropriate authority at the risk and cost of the Contractor.
- 1.12.3.3.4. The Contractor shall submit copies of Final Settlement statement of disbursal of retrenchment benefits on retrenchment of each workman under I D Act 1948, copies of Form 6-A (Annual Return of PF Contribution) along with Copies of PF Contribution Card of each member under PF Act and copies of monthly return on ESI Contribution – Form 6 under ESI Act1948 (If applicable) to BHEL along with the Final Bill.
- 1.12.3.3.5. In case of any dispute pending before the appropriate authority under I D act 1948, WC Act 1923 or ESI Act 1948 and PF Act 1952, BHEL reserve the right to hold such amounts from the final bills of the Contractor which will be released on submission of proof of settlement of issues from the appropriate authority under the act.
- 1.12.3.3.6. In case of any dispute prolonged/pending before the authority for the reasons not attributable to the contractor, BHEL reserves the right to release the final bill of the contractor on submission of Indemnity bond by the contractor indemnifying BHEL against any claims that may arise at a later date without prejudice to the rights of BHEL.
- 1.12.3.3.7. All the Statutory requirements such as ESI, PF etc as per labour laws have to be met by the bidder and proof of compliance shall be submitted to BHEL.
- 1.12.3.3.8. Necessary insurance (covering WC act) for the work men engaged by the contractor has to be met at their cost and copy of the same shall be submitted before commencement of work. The contractor shall follow and comply with all safety rules of the Employer, relevant provisions of applicable law pertaining to the safety of workmen, employees, plant & equipment as may be prescribed from time to time without any demur, protest or contest or reservation. In case of any non-conformity between statutory requirement and safety rules of the Employer referred above. The later shall be binding on the contractor unless the statutory provisions are more stringent.
- 1.12.3.3.9. If the contractor does not take all safety precautions and /or fails to comply with the safety rules as prescribed by the Employer or under the applicable law for the safety of the equipment and plant and for the safety of the

TECHNICAL CONDITIONS OF CONTRACT (TCC)

personnel and contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other contractors or the Employer's employees or any other person who are at site, the contractor shall be responsible for payment of compensation to concerned agency/BHEL as applicable.

- 1.12.3.3.10. An indemnity bond shall be given as per GCC by the contractor stating that all expenditure caused due to failure of statutory obligations of the part of the tender shall be borne by the contractor.
- 1.12.3.3.11. All the work shall be carried out as per instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the contractor.
- 1.12.3.3.12. All the necessary certificates and licenses required to carry out this work are to be arranged by the contractor expeditiously at his cost.
- 1.12.3.3.13. The contractor at his cost shall arrange necessary security measures for adequate protection of his machinery, equipment, tools, materials etc. BHEL shall not be responsible for any loss or damage to the contractor's construction equipment and materials. The contractor may consult the Engineer-in-Charge on the arrangements made for general site security for protection of his machinery equipment tools etc.
- 1.12.3.3.14. The contractor must obtain the signature and permission of the security personnel of the customer for bringing any of their materials inside the site premises. Without the Entry Gate Pass these materials will not be allowed to be taken outside.
- 1.12.3.3.15. Contractors shall ensure that all their Staff / Employees are exposed to periodical training programme conducted by qualified agencies/ personnel on ISO 9001 – 2000 Standards.

1.12.3.4. Performance of the subcontractor shall be carried out as per relevant Applicable Format.

1.12.3.5. Liquidated Damages

Mobilization period of 7 days from issuing LOI will be given to contractor. In case contractor fails to deploy crane within 7 days delay penalty of 0.5% of the contract value per day delay subject to a maximum of 10% of contract value for delay attributable to contractor. Contract value for this purpose shall be final executed value.

VOLUME-IA PART-I CHAPTER -XIII

Formats

S.N	Description of owned crane (Model)	Make	Capacity	Crane YOM	Current status of deployment	Current Location of crane	%age of work completed (if applicable)	Proposed date of release from current deployment
1								
2								
..								

TECHNICAL CONDITIONS OF CONTRACT (TCC)

VOLUME-IA PART – II CHAPTER 1

CORRECTIONS / REVISIONS IN SPECIAL CONDITIONS OF CONTRACT, GENERAL CONDITIONS OF CONTRACT AND FORMS & PROCEDURES

SI No: 1: Earnest Money Deposit (EMD) clause 1.9 in General Conditions of Contract (GCC) (Volume I Book-II) is revised as under.

1.9 EARNEST MONEY DEPOSIT

- 1.9.1 Every tenderer must furnish the prescribed amount of Earnest Money Deposit (EMD) in the manner described herein.
- 1.9.2 Modes of deposit of EMD
 - i. Electronic Fund Transfer credited in BHEL account (before tender opening)

In case of Electronic Fund Transfer, bank details are as follows:

Account Name: BHARAT HEAVY ELECTICALS LTD,

Account No: 00000030359171259,

IFS CODE: SBIN0008779,

BANK: STATE BANK OF INDIA,

BRANCH: ST. Marys Road branch (Secunderabad)

On transfer of amount through EFT, receipt of the same to be enclosed along with technical bid in a separate sealed envelope.

- ii. Banker's cheque or Pay order or Demand Draft in favour of 'Bharat Heavy Electricals Limited' (along with offer) and payable at Regional HQ issuing the tender.
- iii. Incase total EMD amount is more than Rs.20 Lakh, the amount in excess of Rs. 20 Lakh may be accepted in the form of Bank Guarantee from Scheduled bank. The Bank Guarantee in such cases shall be valid for at least seven months from the scheduled due date of tender submission mentioned in the Notice Inviting Tender.

Note: a. Date of Expiry of claim period shall be minimum 60 days after the validity date of bank guarantee.

- v. No other form of EMD remittance shall be acceptable to BHEL.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.9.3 EMD shall not carry any interest.
- 1.9.4 EMD by the Tenderer will be forfeited as per NIT Conditions, if:
 - i. After opening the tender and within the offer validity period, the Tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.
 - ii. The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/Contract.
- 1.9.5 EMD given by all unsuccessful tenderers will be refunded normally within 15 days of award of work.
- 1.9.6 EMD of successful tenderer will be retained as part of Security Deposit.
- 1.9.7 EMD by the tenderer shall be withheld in case any action on the tenderer is envisaged under the provisions of extant" Guidelines on Suspension of Business dealings with suppliers/contactors" and forfeited / released based on the action determined under these guidelines.

SI No:2

Security Deposit clause 1.10 published in General Conditions of Contract (Volume I Book-II) is revised as under:

- 1.10 Security Deposit:**
 - 1.10.1 Upon acceptance of Tender, the successful Tenderer should deposit the required amount of Security Deposit for satisfactory completion of work, as given below:
 - 1.10.2 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.
 - 1.10.3 The security Deposit should be furnished before start of the work by the contractor.
 - 1.10.4 Modes of deposit:
 - 1.10.4.1 The balance amount to make up the required Security Deposit of 5% of the contract value may be furnished in any one of the following forms
 - i. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.
 - ii. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format for Security Deposit shall be in the prescribed formats.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- iii. Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C BHEL, duly discharged on the back.
- iv. Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL and discharged on the back)

(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)

- 1.10.5 At least 50% of the Security Deposit including the EMD should be deposited in any form as prescribed **before start of the work** and the balance 50% of the Security Deposit will be recovered by deducting 10% of the gross amount progressively from each running bills of the contractor till the total amount of the required Security Deposit is collected.
- 1.10.6 The recoveries made from running bills (cash deduction towards balance SD amount) will be released against submission of equivalent Bank Guarantee in the prescribed formats, but only once, before completion of work.
- 1.10.7 The Security Deposit shall not carry any interest.
- 1.10.8 If the value of work done at any time exceeds the contract value, the amount of Security Deposit shall be correspondingly enhanced and the excess Security Deposit due the enhancement shall be immediately deposited by the Contractor or recovered from payment/s due to the Contractor.
- 1.10.9 The validity of Bank Guarantees towards Security Deposit shall be initially upto the completion period as stipulated in the Letter of Intent/Award + 3 months, and the same shall be kept valid by proper renewal till the acceptance of Final Bills of the Contractor, by BHEL
- 1.10.10 BHEL reserves the right of forfeiture of Security Deposit in addition to other claims and penalties in the event of the Contractor's failure to fulfill any of the contractual obligations or in the event of termination of contract

as per terms and conditions of contract. BHEL reserves the right to set off the Security Deposit against any claims of other contracts with BHEL.

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SI No: 3: Clauses 2.13.1, 2.13.6 & 2.13.7 in GCC on Interest Bearing Recoverable Advances is revised as under:

- 3.1 Clause 2.13.1 is revised as “Normally no advance payment shall be payable to the contractor. Mobilisation advance payment in exceptional circumstances shall be interest bearing and secured through a Bank Guarantee and shall be limited to a maximum of 5% of contract value. This ‘Interest Bearing Recoverable Advance’ shall be payable in not less than two installments with any of the installment not exceeding 60% of the total eligible advance”.
- 3.2 Clause 2.13.6 is revised as “The rate of interest applicable for the above advances shall be the Base rate of State Bank of India prevailing at the time of disbursement of the advance + 6%, and such rate will remain fixed till the total advance amount is recovered”.
- 3.3 Clause 2.13.7 is revised as “Unadjusted amount of advances paid shall not exceed 5% of the total contract value at any point of time. Recovery of advances shall be made progressively from each Running Bill such that the advance amounts paid along with the interest is fully recovered by the time the contractor’s billing reaches 90% of contract value.”

SI No: 4: Clauses 2.21.1 in GCC regarding Arbitration

In Clause 2.21.1 of GCC, “The seat of arbitration shall be Chennai (i.e the place from where the contract is issued)”. All other conditions in Clause No.2.21.1 under ‘Arbitration’, remains unchanged.”

SI No: 5

OCCUPATIONAL HEALTH, SAFETY & ENVIRONMENT MANAGEMENT/ QUALITY ASSURANCE PROGRAMME

The following clauses in Occupational Health, Safety & Environment Management / Quality Assurance Programme published in Chapter-IX of Special Conditions of Contract (Volume I Book-II) is revised as under.

Chapter IX Clause 9.1 is modified as below:

Contractor will comply with HSE (Health, Safety & Environment) requirements of BHEL as per the “HSE Plan for Site Operations by Subcontractor”

TECHNICAL CONDITIONS OF CONTRACT (TCC)

(Document No.HSEP: 14 Rev00) enclosed as Volume-1A Part-II Chapter 2 in this booklet.

Chapter IX Clause 9.1.1 to 9.1.25 stands deleted.

Chapter IX Clause 9.2 to 9.62 stands deleted.

SI No: 6

The chapter Reverse auction procedure published in 'Forms and Procedures' of Volume I Book-II stands deleted. Reverse Auction Guidelines available in the website <http://www.bhel.com> shall be applicable.

SI No:7

The following clauses of GCC/SCC are not applicable for this tender.

GCC

- 2.9 – Progress Monitoring, Monthly review and Performance Evaluation,
- 2.10 – Time of Completion,
- 2.11.2-2.11.4, 2.11.6 – Extension for Time of Completion,
- 2.12 – ORC,
- 2.13 – Interest Bearing Recoverable Advance,
- 2.14- Quantity Variation,
- 2.15 – Extra Works,
- 2.16- Supplementary Items,
- 2.17 – PVC,
- 2.24 – Performance Guarantee for Workmanship.

SCC

- 1.0 – General Intent of the Specifications
- 2.0 – General Services to be rendered by the Bidder
- 3.0 – General technical Requirements
- 4.0 – Obligations of Contractor
- 6.0 -- Material handling, Storage, Preservation, etc.,
- 7.0 – Drawings
- 8.0 – Inspection and Quality
- 11.0 – Performance Monitoring.

Forms and Procedures

- 1.14 – Monthly plan and review with contractors (Form F-14 Rev 00)
- 1.15 – Monthly performance Evaluation of Contractor (Form F-15 Rev 01)

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- 1.17 – Evaluation of Contractor Performance Annual (Form F-17 Rev 01)
- 1.18 – Evaluation of Contractor Performance for the contract (Overall) (Form F-18 Rev01)
- 1.19 – Milestone Completion Certificate (Form F-19 Rev 00)
- 1.22 – Completion Certificate (Form F – 20 Rev 01)
- 1.26 – Analysis of unit rates quoted (Form F-26 Rev 01)

SI No: 8

Clause 2.7.2 and 2.7.3 in GCC regarding Rights of BHEL is revised as under:

2.7.2.

2.7.2.1 To terminate the contract or withdraw portion of work and get it done through other agency, at the risk and cost of the contractor after due notice of a period of 14 days' by BHEL in any of the following cases:

- i. 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 work does not appear to be executable within balance available period considering its performance of execution.
- ii. Withdrawal from or abandonment of the work by contractor before completion of the work as per contract.
- iii. Non-completion of work by the Contractor within scheduled completion period as per Contract or as extended from time to time, for the reasons attributable to the contractor.
- iv. Termination of Contract on account of any other reason (s) attributable to Contractor.
- v. Assignment, transfer, subletting of Contract without BHEL's written permission.
- vi. Non-compliance to any contractual condition or any other default attributable to Contractor.

Risk & Cost Amount against Balance Work:

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

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

Where,

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

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

H = Overhead Factor to be taken as 5

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

Difference of Contract Quantities and Executed Quantities as on the date of issue of Letter for 'Termination of Contract', shall be taken as balance scope of Work for calculating risk & cost amount. Contract quantities are the quantities as per original contract. If, Contract has been amended, quantities as per amended Contract shall be considered as Contract Quantities.

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

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

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

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

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

LD against delay in executed work shall be calculated in line with LD clause no. 2.7.9 of GCC, for the delay attributable to contractor. For limiting the maximum value of LD, contract value shall be taken as Executed Value of work till termination of contract.

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

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

TECHNICAL CONDITIONS OF CONTRACT (TCC)

- v). LD shall be calculated in line with LD clause (clause 2.7.9) of the Contract for the delay attributable to contractor taking "X" as Contract Value and "T2" as period of delay attributable to contractor.

2.7.2.2 In case Contractor fails to deploy the resources as per requirement, BHEL can deploy own/hired/otherwise arranged resources at the risk and cost of the contractor and recover the expenses incurred from the dues payable to contractor. Recoveries shall be actual expenses incurred plus 5% overheads or as defined in TCC.

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

Following sequence shall be applicable for recoveries from contractor:

- a) Dues available in the form of Bills payable to contractor, SD, BGs against the same contract.
- b) 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.
- c) 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:
 - i) Dues payable to contractor against other contracts in the same Region shall be considered for recovery.
 - ii) 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.
 - iii) In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against contractor.

SI. No.: 09

Clause No. 10.5 on RA Bill Payments, in SCC, is revised as under:

The payment for running bills will normally be released within 30 days of submission of running bill complete in all respects with all documents. It is the responsibility of the contractor to make his own arrangements for making timely payments towards labour wages, statutory payments, outstanding dues etc and other dues in the meanwhile.

SI. No.: 10

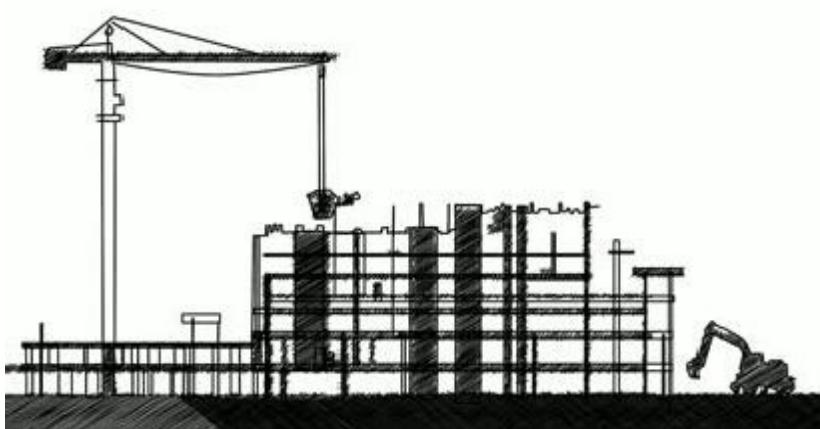
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VOLUME-IA PART - II

CHAPTER 2

In the next 72 pages as below:

CHAPTER	Details	No.of sheets
CHAPTER 2	HSE PLAN FOR SITE OPERATIONS BY SUBCONTRACTOR	72



HEALTH, SAFETY and ENVIRONMENT PLAN

**for
SITE
OPERATIONS
by
SUB-
CONTRACTORS**

POWER SECTOR



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 00

Date: 12.08.2014

DOCUMENT ISSUE SHEET

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Signature			
Date	12/8/14	12/8/14	12/8/14

HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS

AT A GLANCE

BEFORE START	SIGNING OF MOU
Agree to comply to HSE requirement- Statutory and BHEL's	

PLAN	HSE ORGANISATION						
	<table border="1"><thead><tr><th>Manpower</th><th>HSE Roles and responsibilities</th></tr></thead><tbody><tr><td><ul style="list-style-type: none">• 1 (one) safety officer for every 500 workers or part thereof• 1(one) safety-steward/ supervisor for every 100 workers</td><td><ul style="list-style-type: none">• Site In-charge- As per clause 7.2.1• Safety officer- As per clause 7.2.2</td></tr><tr><th>Qualification</th><td>As per Cl. 7.1</td></tr></tbody></table>	Manpower	HSE Roles and responsibilities	<ul style="list-style-type: none">• 1 (one) safety officer for every 500 workers or part thereof• 1(one) safety-steward/ supervisor for every 100 workers	<ul style="list-style-type: none">• Site In-charge- As per clause 7.2.1• Safety officer- As per clause 7.2.2	Qualification	As per Cl. 7.1
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Qualification	As per Cl. 7.1						

HSE Planning for Man , Machinery/Equipment/Tools & Tackles

PROVIDE	HSE INFRASTRUCTURE		
	<table border="1"><tbody><tr><td><ul style="list-style-type: none">• PPEs• Drinking Water• Washing Facilities• Latrines and Urinals• Provision of shelter for rest• Medical facilities</td><td><ul style="list-style-type: none">• Canteen facilities• Labour Colony• Emergency Vehicle• Pest Control• Scrapyard• Illumination</td></tr></tbody></table>	<ul style="list-style-type: none">• PPEs• Drinking Water• Washing Facilities• Latrines and Urinals• Provision of shelter for rest• Medical facilities	<ul style="list-style-type: none">• Canteen facilities• Labour Colony• Emergency Vehicle• Pest Control• Scrapyard• Illumination
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TRAIN	HSE TRAINING , AWARENESS & PROMOTION				
	<table border="1"><tbody><tr><th>Training</th><th>Awareness & Promotion</th></tr><tr><td><ul style="list-style-type: none">• Induction training• Height work and other critical areas• Tool Box talk & Pep Talk</td><td><ul style="list-style-type: none">• Signage• Poster• Banner• Competition• Awards</td></tr></tbody></table>	Training	Awareness & Promotion	<ul style="list-style-type: none">• Induction training• Height work and other critical areas• Tool Box talk & Pep Talk	<ul style="list-style-type: none">• Signage• Poster• Banner• Competition• Awards
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COMMUNICATE	HSE COMMUNICATION				
	<table border="1"><tbody><tr><th>Incident Reporting</th><th>Event Reporting</th></tr><tr><td><ul style="list-style-type: none">• Accident- Fatal & Major• Property damage• Near Miss</td><td><ul style="list-style-type: none">• Celebrations• Training• Medical camp</td></tr></tbody></table>	Incident Reporting	Event Reporting	<ul style="list-style-type: none">• Accident- Fatal & Major• Property damage• Near Miss	<ul style="list-style-type: none">• Celebrations• Training• Medical camp
Incident Reporting	Event Reporting				
<ul style="list-style-type: none">• Accident- Fatal & Major• Property damage• Near Miss	<ul style="list-style-type: none">• Celebrations• Training• Medical camp				

EXECUTE SAFELY

OPERATIONAL CONTROL PROCEDURES

PERMIT TO WORK

Height work (above 2 metres), Hot Work, Heavy Lifting, Confined Space, Radiography, excavation(More than 4 metres)

SAFETY DURING WORK EXECUTION

<ul style="list-style-type: none">• Welding• Rigging• Cylinder- storage & Movement• Demolition work• T&Ps• Chemical Handling• Electrical works	<ul style="list-style-type: none">• Fire• Scaffolding• Height work• Working Platform• Excavation• Ladder• Lifting• Hoisting appliance
--	--

HOUSE KEEPING

WASTE MANGEMENT

TRAFFIC MANAGEMENT

ENVIRONMENTAL CONTROL

EMERGENCY PREPAREDNESS AND RESPONSE PLAN

CHECKS

HSE AUDITS & INSPECTION

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

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



**HEALTH, SAFETY AND ENVIRONMENT
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POWER SECTOR

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1.0 PURPOSE

- 1.1 The purpose of this HSE Plan is to provide for the systematic identification, evaluation, prevention and control of general workplace hazards, specific job hazards, potential hazards and environmental impacts that may arise from foreseeable conditions during installation and servicing of industrial projects and power plants.
- 1.2 This document shall be followed by BHEL's subcontractors at all installation and servicing sites. In case customer specific documents are to be implemented, this document will be followed in conjunction with customer specific documents.
- 1.3 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.
- 1.4 In case the customer has any specific requirement, the same is to be fulfilled.

2.0 SCOPE

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

3.0 OBJECTIVES AND TARGETS

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

- Ensure the Health and Safety of all persons at work site is not adversely affected by the work.
- Ensure protection of environment of the work site.
- Comply at all times with the relevant statutory and contractual HSE requirements.
- Provide trained, experienced and competent personnel. Ensure medically fit personnel only are engaged at work.
- Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.
- Provide all personnel with adequate information, instruction, training and supervision on the safety aspect of their work.
- 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.
- Ensure that all work planning takes into account all persons that may be affected by the work.
- Ensure fitness testing of all T&Ps/Lifting appliances like cranes, chain pulley blocks etc. are to be certified by competent person.
- Ensure timely provision of resources to facilitate effective implementation of HSE requirements.
- Ensure continual improvements in HSE performance
- Ensure conservation of resources and reduction of wastage.
- 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 and preventive action.

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HSE TARGETS

EXPLOSION	ZERO
FATALITY	ZERO
LOST TIME INJURY	ZERO
FIRE	ZERO
VEHICLE INCIDENTS	ZERO
ENVIRONMENTAL INCIDENTS	ZERO

4.0 BHEL POWER SECTOR HEALTH, SAFETY & ENVIRONMENT POLICY

Power Sector HSE Policy

We, at BHEL Power Sector, reaffirm our belief that the Health and Safety of our stakeholders and conservation of Environment is of utmost importance and takes precedence in all our business decisions. In pursuit of this belief and commitment, we strive to:

- ✓ Ensure total compliance with applicable legislation, regulations and other requirements concerning Occupational Health, Safety and Environment.
- ✓ Ensure continual improvement in the Occupational Health, Safety and Environment Management System performance.
- ✓ Enhance Occupational Health, Safety and Environment awareness amongst employees, customers and suppliers by proactive communication and training.
- ✓ Review periodically and improve Occupational Health, Safety and Environment Management System to ensure its continuing suitability, adequacy and effectiveness in a continuously changing business environment.
- ✓ Develop a culture of safety through active leadership and provide appropriate training at all levels to enable employees to fulfill their Health, Safety and Environmental obligations.
- ✓ Incorporate appropriate Occupational Health, Safety and Environmental criteria into business decisions for selection of plant, technology and services as well as appointment of key personnel.
- ✓ Ensure availability at all times of appropriate resources to fully implement the Occupational Health, Safety and Environmental policy of the company.

This policy will be communicated to all employees and made available to interested parties.

Sd/-

Date: 01.05.2013

Director (Power)

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5.0 MEMORANDUM OF UNDERSTANDING:

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

Memorandum of Understanding

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

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

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

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

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

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

Name : _____

Place & Date:

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6.0 TERMS AND DEFINITIONS

6.1 DEFINITIONS

6.1.1 INCIDENT

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

6.1.2 NEAR MISS

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

6.1.3 MAN-HOUR WORKED

The total number of man hours worked by all employees including subcontractors working in the premises. It includes managerial, supervisory, professional, technical, clerical and other workers including contract labours. 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 workdays for a period is the sum of the number of men at work on each day of period. If the daily hours vary from department to department separate estimate shall be made for each department and the result added together.

6.1.4 FIRST AID CASES

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

6.1.5 LOST TIME INJURY

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

6.1.6 MEDICAL CASES

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

6.1.7 TYPE OF INCIDENTS & THEIR REPORTING:

The three categories of Incident are as follows:

Non-Reportable Cases:

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

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Reportable Cases:

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

Injury Cases:

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

6.1.8 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:

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

6.1.9 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:

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

6.1.10 INCIDENCE RATE

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

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

7.0 HSE ORGANISATION

Number of safety officers:

The subcontractor must deploy one safety officer for every 500 workers or part thereof in each package. In addition, there must be one safety-steward/safety-supervisor for every 100 workers.

Deployment: The subcontractor should deploy sufficient safety officers and safety-steward/Safety-supervisor, as per requirement given above, since initial stage and add more in proportion to the added strength in work force. Any delay in deployment will attract a penalty of Rs.30,000/- per man month for the delayed period.

7.1 QUALIFICATION FOR HSE PERSONNEL

Sl.no	Designation	Qualification	Experience
1	Safety officer (Construction Agency)	Degree or Diploma in Engineering with full time diploma in Industrial Safety with construction safety as one of the subjects	Minimum two years for degree holder and five years for diploma holder in the field of Construction of power plant/ major industries

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2	Safety-Steward/ Safety-Supervisor	Degree or diploma in any discipline with full time diploma in Industrial Safety with construction safety as one of the subjects	Minimum two years
---	-----------------------------------	---	-------------------

7.2 RESPONSIBILITIES

7.2.1 SITE IN -CHARGE OF SUBCONTRACTOR

- Shall sign Memorandum of Understanding (MoU) for compliance to BHEL's HSE Plan for Site Operations as per clause 5.0
- Shall engage qualified safety officer(s) and steward (s) as per clause 7.0
- Shall adhere to the rules and regulations mentioned in this code, practice very strictly in his area of work in consultation with his concerned engineer and the safety coordinator.
- Shall screen all workmen for health and competence requirement before engaging for the job and periodically thereafter as required.
- Shall not engage any employee below 18 years.
- 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.
- Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent person.
- Shall ensure that provisions stipulated in contract Labour Regulation Act 1970, Chapter V C.9, canteen, rest rooms/washing facilities to contracted employees at site.
- Shall adhere to the instructions laid down in Operation Control Procedures (OCPs) available with the site management.
- Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
- Shall ensure that materials are not thrown from height. Cautions to be exercised to prevent fall of material from height.
- Shall report all incidents(Fatal/Major/Minor/Near Miss)to the Site engineer /HSE officer of BHEL.
- Shall ensure that Horseplay is strictly forbidden.
- Shall ensure that adequate illumination is arranged during night work.
- Shall ensure that all personnel working under subcontractor are working safely and do not create any Hazard to self and to others.
- Shall ensure display of adequate signage/posters on HSE.
- Shall ensure that mobile phone is not used by workers while working.
- Shall ensure conductance of HSE audit, mockdrill, medical camps, induction training and training on HSE at site.
- Shall ensure full co-operation during HQ/External /Customer HSE audits.

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- Shall ensure submission of look-ahead plan for procurement of HSE equipment's and PPEs as per work schedule.
- Shall ensure good housekeeping.
- Shall ensure adequate valid fire extinguishers are provided at the work site.
- Shall ensure availability of sufficient number of toilets /restrooms and adequate drinking water at work site and labour colony.
- Shall ensure adequate emergency preparedness.
- Shall be member of site HSE committee and attend all meetings of the committee
- Power source for hand lamps shall be maximum of 24 v.
- Temporary fencing should be done for open edges if Hand – railings and Toe-guards are not available.

7.2.2 HEALTH, SAFETY AND ENVIRONMENT OFFICER OF SUBCONTRACTOR

- Carry out safety inspection of Work Area, Work Method, Men, Machine & Material, P&M and other tools and tackles.
- Facilitate inclusion of safety elements into Work Method Statement.
- Highlight the requirements of safety through Tool-box / other meetings.
- Help concerned HOS to prepare Job Specific instructions for critical jobs.
- Conduct investigation of all incident/dangerous occurrences & recommend appropriate safety measures.
- Advice & co-ordinate for implementation of HSE permit systems, OCPs & MPs.
- Convene HSE meeting & minute the proceeding for circulation & follow-up action.
- Plan procurement of PPE & Safety devices and inspect their healthiness.
- Report to PS Region/HQ on all matters pertaining to status of safety and promotional program at site level.
- Facilitate administration of First Aid
- Facilitate screening of workmen and safety induction.
- Conduct fire Drill and facilitate emergency preparedness
- Design campaigns, competitions & other special emphasis programs to promote safety in the workplace.
- Apprise PS- Region on safety related problems.
- Notify site personnel non-conformance to safety norms observed during site visits / site inspections.
- 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.
- To decline acceptance of such PPE / safety equipment that do not conform to specified requirements.
- Encourage raising Near Miss Report on safety along with, improvement initiatives on safety.
- Shall work as interface between various agencies such customer, package-in-charges, subcontractors on HSE matters

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8.0 PLANNING BY SUBCONTRACTOR

8.1 MOBILISATION OF MACHINERY/EQUIPMENT/TOOLS BY SUBCONTRACTOR

- As a measure to ensure that machinery, equipment and tools being mobilized to the construction site are fit for purpose and are maintained in safe operating condition and complies with legislative and owner requirement, inspection shall be arranged by in-house competent authority for acceptance as applicable.
- The machinery and equipment to be embraced for this purpose shall include but not limited to the following:
 - Mobile cranes.
 - Side Booms.
 - Forklifts.
 - Grinding machine.
 - Drilling machine.
 - Air compressors.
 - Welding machine.
 - Generator sets.
 - Dump Trucks.
 - Excavators.
 - Dozers
 - Grit Blasting Equipment.
 - Hand tools.
- Subcontractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the subcontractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.

8.2 MOBILISATION OF MANPOWER BY SUBCONTRACTOR

- The subcontractor shall arrange induction and regular health check of their employees as per schedule VII of BOCW rules by a registered medical practitioner.
- 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.
- 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.
- Appropriate accommodation to be arranged for all workmen in hygienic condition.

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8.3 PROVISION OF PPEs

- Personnel Protective Equipment (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured
- The following matrix recommends usage of minimum PPEs against the respective job.

Sl. No	Type of work	PPEs
1	Concrete and asphalt mixing	Nose mask, hand glove, apron and gum boot
2	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
3	Stone/ concrete breakers	Ear muffs, safety goggles, hand gloves
4	Electrical Work	Rubber hand glove, Electrical Resistance shoes
5	Insulation Work	Respiratory mask, Hand gloves, safety goggles
6	Work at height	Double lanyard full body harness, Fall arrestor (specific cases)
7	Grit/Sand blasting	Blast suit, blast helmet, respirator, leather gloves
8	Painting	Plastic gloves, Respirators (particularly for spray painting)
9	Radiography	As per BARC guidelines

- The PPEs shall conform to the relevant standards as below and bear ISI mark.

Relevant is-codes for personal protection

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

The list is not exhaustive. The safety officer may demand additional PPEs based on specific requirement.

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- 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
- Besides the PPEs mentioned above, the persons shall use helmet and safety shoe. The visitors shall use Helmet and any other PPEs as deemed appropriate for the area of work.

Colour scheme for Helmets:

1. Workmen: Yellow
2. Safety staff: Green or white with green band
3. Electrician: Red
4. Others including visitors: White

- All the PPEs shall be checked for its quality before issue and the same shall be periodically checked. The users shall be advised to check the PPEs themselves for any defect before putting on. The defective ones shall be repaired/replaced.
- The issuing agency shall maintain register for issue and receipt of PPEs.
- The Helmets shall have logo or name (abbreviation of agency name permitted) affixed or printed on the front.
- The body harnesses shall be serial numbered.

8.4 ARRANGEMENT OF INFRASTRUCTURE

8.4.1 DRINKING WATER

- Drinking water shall be provided and maintained at suitable places at different elevations.
- Container should be labeled as "Drinking Water"
- Cleaning of the storage tank shall be ensured atleast once in 3 months indicating date of cleaning and next due date.
- Potability of water should be tested as per IS10500 at least once in a year.

8.4.2 WASHING FACILITIES

- In every workplace, adequate and suitable facilities for washing shall be provided and maintained.
- Separate and adequate cleaning facilities shall be provided for the use of male and female workers. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition and dully illuminated for night use.
- 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.

8.4.3 LATRINES AND URINALS

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

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8.4.4 PROVISION OF SHELTER DURING REST

Proper Shed & Shelter shall be provided for rest during break

8.4.5 MEDICAL FACILITIES

8.4.5.1 MEDICAL CENTRE (As per Schedule V, X and XI of BOCW central Rules, 1998)

- A medical centre shall be ensured/identified at site with basic facilities for handling medical emergencies. The medical center can be jointly developed on proportionate sharing basis with permission from BHEL
- A qualified medical professional, not less than MBBS, shall be deployed at the medical centre
- The medical centre shall be equipped with one ambulance, with trained driver and oxygen cylinder.
- Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste –Management and Handling Rules, 1998)

8.4.5.2 FIRST AIDER

- Ensure availability of Qualified First-aider throughout the working hours.
- Every injury shall be treated, recorded and reported.
- Refresher course on first aid shall be conducted as necessary.
- List of Qualified first aiders and their contact numbers should be displayed at conspicuous places.

8.4.5.3 FIRST AID BOX (as per schedule III of BOCW)

- The subcontractor shall provide necessary first aid facilities as per schedule III of BOCW. At every work place first aid facilities shall be provided and maintained.
- The first aid box shall be kept by first aider who shall always be readily available during the working hours of the work place. His name and contact no to be displayed on the box.
- The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time.
- The first aid box shall be distinctly marked with a Green Cross on white background.
- Details of contents of first aid box is given in Annexure No. 01
- Monthly inspection of First Aid Box shall be carried out by the owner as per format no. HSEP:13-F01
- The subcontractor should conduct periodical first –aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.

8.4.5.4 HEALTH CHECK UP (As per schedule VII and Form XI)

The persons engaged at the site shall undergo health checkup as per the format no.

HSEP:13-F02 before induction. The persons engaged in the following works shall undergo health checkup at least once in a year:

- a. Height workers
- b. Drivers/crane operators/riggers

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- c. Confined space workers
- d. Shot/sand blaster
- e. Welding and NDE personnel

8.4.6 PROVISION OF CANTEEN FACILITY

- Canteen facilities shall be provided for the workmen of the project inside the project site.
- Proper cleaning and hygienic condition shall be maintained.
- Proper care should be taken to prevent biological contamination.
- Adequate drinking water should be available at canteen.
- Fire extinguisher shall be provided inside canteen.
- Regular health check-up and medication to the canteen workers shall be ensured.

8.4.7 PROVISION OF ACCOMODATION/LABOUR COLONY

- The subcontractor shall arrange for the accommodation of workmen at nearby localities or by making a labour colony.
- Regular housekeeping of the labour colony shall be ensured.
- Proper sanitation and hygienic conditions to be maintained.
- Drinking water and electricity to be provided at the labour colony.
- Bathing/ washing bay
- Room ventilation and electrification.

8.4.8 PROVISION OF EMERGENCY VEHICLE

- Dedicated emergency vehicle shall be made available at workplace by each subcontractor to handle any emergency

8.4.9 PEST CONTROL

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

8.4.10 SCRAPYARD

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

8.4.11 ILLUMINATION

- The subcontractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations at dark places and during night hours at the work spot as well as at the pre-assembly area.
- Adequate and suitable light shall be provided at all work places & their approaches including passage ways as per IS: 3646 (Part-II). Some recommended values are given below:

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

- Lamp (hand held) shall not be powered by mains supply but either by 24V or dry cells.
- Lamps shall be protected by suitable guards where necessary to prevent danger, in case of breakage of lamp.
- Emergency lighting provision for night work shall be made to minimise danger in case of main supply failure.

If the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor

9.0 HSE TRAINING & AWARENESS

9.1 HSE INDUCTION TRAINING

All persons entering into project site shall be given HSE induction training by the HSE officer of BHEL /subcontractor before being assigned to work.

In-house induction training subjects shall include but not limited to:

- Briefing of the Project details.
- Safety objectives and targets.
- Site HSE rules.
- Site HSE hazards and aspects.
- First aid facility.
- Emergency Contact No.
- Incident reporting.
- Fire prevention and emergency response.
- Rules to be followed in the labour colony (if applicable)

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- 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.)
- They must arrive fully dressed in safety wear & gear to attend the induction.
- Any one failing to conform to this safety wear & gear requirement shall not qualify to attend.
- On completing attending subcontractor's in-house HSE induction, each employee shall sign an induction training form (format no. HSEP:13-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.

9.2 HSE TOOLBOX TALK

- HSE tool Box talk shall be conducted by frontline foreman/supervisor of subcontractor to specific work groups prior to the start of work. The agenda shall consist of the followings:
 - Details of the job being intended for immediate execution.
 - The relevant hazards and risks involved in executing the job and their control and mitigating measures.
 - Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
 - Recent non-compliances observed.
 - Appreciation of good work done by any person.
 - Any doubt clearing session at the end.
- Record of Tool box talk shall be maintained as per format no. HSEP:13-F04
- Tool box talk to be conducted at least once a week for the specific work.

9.3 TRAINING ON HEIGHT WORK

Training on height work shall be imparted to all workers working at height by in-house/external faculty at least twice in a year. The training shall include following topics:

- Use of PPEs
- Use of fall arrester, retractable fall arrester, life line, safety nets etc.
- Safe climbing through monkey ladders.
- Inspection of PPEs.
- Medical fitness requirements.
- Mock drill on rescue at height.
- Dos & Don'ts during height work.

9.4 HSE TRAINING DURING PROJECT EXECUTION

- Other HSE training shall be arranged by BHEL/ subcontractor as per the need of the project execution and recommendation of HSE committee of site.
- The topics of the HSE training shall be as follows but not limited to:
 - Hazards identification and risk analysis (HIRA)
 - Work Permit System
 - Incident investigation and reporting
 - Fire fighting
 - First aid
 - Fire-warden training
 - EMS and OHSMS
 - T & Ps fitness and operation

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- Electrical safety
- Welding, NDE & Radiological safety
- Storage, preservation & material handling.
- A matrix shall be maintained to keep an up-to-date record of attendance of training sessions carried out.

9.5 HSE PROMOTION-SIGNAGE, POSTERS, COMPETITION, AWARDS ETC

9.5.1 Display of HSE posters and banners

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

9.5.2 Display of HSE signage

- Appropriate HSE signage shall be displayed at the work area to aware workmen and passersby about the work going on and do's and don'ts to be followed

9.5.3 Competition on HSE and award

- Site will arrange different competition (slogan, poster, essay etc.) on HSE time to time (Safety day, BHEL day, World Environment Day etc.) and winners will be suitably awarded.

9.5.4 HSE awareness programme

- Subcontractor shall arrange HSE awareness programme periodically on different topics including medical awareness for all personnel working at site

10.0 HSE COMMUNICATION

10.1 INCIDENT REPORTING

- The subcontractor shall submit report of all incidents, fires and property damage etc to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. (Refer HSE procedure for incident investigation, analysis and reporting for details)
- In addition, periodic reports on safety shall also be submitted by the subcontractor to BHEL from time to time as prescribed by the Engineer. Compiled monthly reports of all kinds of incidents, fire and property damage to be submitted to BHEL safety officer as per prescribed formats.
- HSE incidents of site shall be reported to BHEL site Management as per Procedure for Incident Investigation and Reporting in format no. HSEP:14-F15. Corrective action shall be immediately implemented at the work place and compliance shall be verified by BHEL HSE officer and until then, work shall be put on hold by Construction Manager.

10.2 HSE EVENT REPORTING

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

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11.0 OPERATIONAL CONTROL

All applicable OCPs (Operational control procedures) will be followed by subcontractor as per BHEL instructions. This will be done as part of normal scope of work. List of such OCPs is given below . In case any other OCP is found to be applicable during the execution of work at site, then subcontractor will follow this as well, within quoted rate. These OCPs (applicable ones) will be made available to subcontractor during work execution at site. However for reference purpose, these are kept with Safety Officer of BHEL at the Power Sector Regional HQ, or available in downloadable format in the website, which may be refereed by subcontractor, if they so desire.

LIST OF OCPs

Safe handling of chemicals	Safety in use of cranes	Hydraulic test
Electrical safety	Storage and handing of gas cylinders	Spray insulation
Energy conservation	Manual arc welding	Trial run of rotary equipment
Safe welding and gas cutting operation	Safe use of helmets	Stress relieving
Fire safety	Good house keeping	Material preservation
Safety in use of hand tools	Working at height	Cable laying/tray work
First aid	Safe excavation	Transformer charging
Food safety at canteen	Safe filling of hydrogen in cylinder	Electrical maintenance
Illumination	Vehicle maintenance	Safe handling of battery system
Handling and erection of heavy metals	Safe radiography	Computer operation
Safe acid cleaning	Waste disposal	Storage in open yard
Safe alkali boil out	Working at night	For sanitary maintenance
Safe oil flushing	Blasting	Batching
Steam blowing	DG set	Piling rig operation
Safe working in confined area	Handling & storage of mineral wool	Gas distribution test
Safe operation of passenger lift, material hoists & cages	Drilling, reaming and grinding(machining)	Cleaning of hotwell / deaerator
Electro-resistance heating	Compressor operation	O&M of control of AC plant & system
Air compressor	Passivation	Safe Loading of Unit
Safe EDTA Cleaning	Safe Chemical cleaning of Pre boiler system	Safe Boiler Light up
Safe Rolling and Synchronisation		

11.1 HSE ACTIVITIES

HSE activities shall be conducted at site based on the HSEMSM developed by Power Sector and issued to site by Regions.

While planning for any activity the following documents shall be referred for infrastructural requirements to establish control measures:

- 1) HSE Procedure for Register of OHS Hazards and Risks
- 2) HSE Procedure for Register of Environmental Aspects and Impacts
- 3) HSE Procedure for Register of Regulations

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- 4) Operational Control Procedures
- 5) HSE Procedure for Emergency Preparedness and Response Plan
- 6) Contract documents

11.2 WORK PERMIT SYSTEM

- The following activities shall come under Work Permit System
 - a. Height working above 2 metres
 - b. Hot working at height
 - c. Confined space
 - d. Radiography
 - e. Excavation more than 4 meter depth
 - f. Heavy lifting above 50 ton
 Refer Annexure 05 for Work permit formats.
- "HSE Procedure for Work Permit System" shall be followed while implementing permit system. Where customer is having separate Work Permit System the same shall be followed.
- Permit applicant shall apply for work permit of particular work activity at particular location before starting of the work with Job Hazard Analysis.
- Permit signatory shall check that all the control measures necessary for the activity are in place and issue the permit to the permit holder.
- Permit holder shall implement and maintain all control measures during the period of permit .He will close the permit after completion of the work. The closed permit shall be archived in HSE Department of site.

11.3 SAFETY DURING WORK EXECUTION

Respective OCPS are to be followed and adherence to the same would be contractually binding

11.3.1 WELDING SAFETY

All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.

11.3.2 RIGGING

Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.

11.3.3 CYLINDERS STORAGE AND MOVEMENT

All gas cylinders shall be stored in upright position. Suitable trolley shall be used. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced. No of cylinders shall not exceed the specified quantity as per OCP

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.

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When cylinders are transported by powered vehicle they shall be secured in a vertical position.

11.3.4 DEMOLITION WORK

Before any demolition work is commenced and also during the process of the work the following shall be ensured:

- All roads and open areas adjacent to the work site shall either be closed or suitably protected.
- 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.
- 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.

11.3.5 T&Ps

All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL..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.

11.3.6 CHEMICAL HANDLING

Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place. 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.

11.3.7 ELECTRICAL SAFETY

- Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.
- Fulfilling safety requirements at all power tapping points.
- High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
- The subcontractor 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, turbine casings, condensers etc.
- All portable electric tools used by the subcontractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the subcontractor to carry out all types of electrical works. Details of earth resource ad their test date to be given to BHEL safety officer as per the prescribed formats of BHEL
- The subcontractor shall use only properly insulated and armored cables which conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site.

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- BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the subcontractor.
- All electrical appliances used in the work shall be in good working condition and shall be properly earthed.
- No maintenance work shall be carried out on live equipment.
- The subcontractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
- Area wise Electrical safety inspection is to be carried out on monthly basis as per "Electrical Safety Inspection checklist" and the report is to be submitted to BHEL safety officer
- 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
- The subcontractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.

11.3.8 FIRE SAFETY

- Providing appropriate fire fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
- Subcontractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labor 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 certified at periodic intervals. The date of changing 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 coordinator of BHEL shall be followed.
- 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.
- Emergency contacts nos must be displayed at prominent locations
- 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.

11.3.9 SCAFFOLDING

- Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders.
- When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than 1/4 horizontal and 1 vertical.
- Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the out side and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from saver, from swaying, from the building or structure.

11.3.10 WORK AT HEIGHT:

- Guardrails and toe-board/barricades and sound platform conforming to IS:4912-1978 should be provided.

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- Wherever necessary, life-line(pp or metallic) and fall arrestor along with Polyamide rope or Retractable lifeline should be provided.
- Safety Net as per IS:11057:1984 should be used extensively for prevention/ arrest of men and materials falling from height. The safety nets shall be fire resistant, duly tested and shall be of ISI marked and the nets shall be located as per site requirements to arrest or to reduce the consequences of a possible fall of persons working at different heights.
- 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.
- Use of Rebar steel for making Jhoola and monkey-ladder (Rods welded to vertical or inclined structural members), temporary platform etc. must be avoided.
- Monkey Ladder should be properly made and fitted with cages.
- Jhoola should be made with angles and flats and tested like any lifting tools before use.
- Lanyard must be anchored always and in case of double lanyard, each should be anchored separately.
- In case of pipe-rack, persons should not walk on pipes and walk on platforms only.
- In case of roof work, walking ladder/ platform should be provided along with lifeline and/ or fall arrestor.
- Empty drums must not be used.
- For chimney or structure painting, both hanging platform and men should be anchored separately to a firm structure alongwith separate fall arrestor. Rope ladder should be discouraged.

11.3.11 WORKING PLATFORM

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 as described above. Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.

11.3.12 EXCAVATION

Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.

11.3.13 LADDER SAFETY

Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased at least $\frac{1}{4}$ " for each additional foot of length.

A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.

11.3.14 LIFTING SAFETY

- It will be the responsibility of the subcontractor to ensure safe lifting of the equipment, taking due precaution to avoid any incident and damage to other equipment and personnel.

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- All requisite tests and inspection of handling equipment, tools & tackle shall be periodically done by the subcontractor by engaging only the Competent Persons as per law.
- Defective equipment or uncertified shall be removed from service.
- Any equipment shall not be loaded in excess of its recommended safe working load.

11.3.15 HOISTING APPLIANCE

- Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards.
- Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming incidentally displaced.
- When workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided.
- The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.

11.4 ENVIRONMENTAL CONTROL

Environment protection has always been given prime importance by BHEL. Environmental damage is a major concern of the principal subcontractor and every effort shall be made, to have effective control measures in place to avoid pollution of Air, Water and Land and associated life. Chlorofluorocarbons such as carbon tetrachloride and trichloroethylene shall not be used. Waste disposal shall be done in accordance with the guidelines laid down in the project specification.

Any chemical including solvents and paints, required for construction shall be stored in designated bonded areas around the site as per Material Safety Data Sheet (MSDS).

In the event of any spillage, the principle is to recover as much material as possible before it enters drainage system and to take all possible action to prevent spilled materials from running off the site. The subcontractor shall use appropriate MSDS for clean-up technique

All subcontractors shall be responsible for the cleanliness of their own areas.

The subcontractors shall ensure that noise levels generated by plant or machinery are as low as reasonably practicable. Where the subcontractor anticipates the generation of excessive noise levels from his operations the subcontractor shall inform to Construction Manager of BHEL accordingly so that reasonable & practicable precautions can be taken to protect other persons who may be affected.

It is imperative on the part of the subcontractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc.

The subcontractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.

11.5 HOUSEKEEPING

- Keeping the work area clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the subcontractor. Such cleanings has to be done by

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subcontractor within quoted rate, on daily basis by an identified group. 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 contractor's bill. Such decisions of BHEL shall be binding on the subcontractor

- Proper housekeeping to be maintained at work place and the following are to be taken care of on daily basis.
- All surplus earth and debris are removed/disposed off from the working areas to identified locations.
- Unused/Surplus cables, steel items and steel scrap lying scattered at different places/elevation within the working areas are removed to identified locations.
- All wooden scrap, empty wooden cable drums and other combustible packing materials, shall 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 location.
- Access and egress (stair case, gangways, ladders etc.) path should be free from all scrap and other hindrances.
- Workmen shall be educated through tool box talk about the importance of housekeeping and encourage not to litter.
- Labour 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.
- Fabricated steel structures, pipes & piping materials shall be stacked properly.
- 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.
- Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas

11.6 WASTE MANAGEMENT

Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained.

11.6.1 BINS AT WORK PLACE

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

11.6.2 STORAGE AND COLLECTION

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

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11.6.3 SEGREGATION

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

11.6.4 DISPOSAL

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

11.6.5 WARNING AND SIGNS

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

11.7 TRAFFIC MANAGEMENT SYSTEM

11.7.1 SAFE WORKPLACE TRANSPORT SYSTEM

- Traffic routes in a work place shall be suitable for the persons or vehicles using them. This shall be sufficient in number and of sufficient size. This shall reflect the suitability of traffic routes for vehicles and pedestrians.
- Where vehicles and pedestrians use the same traffic routes there shall be sufficient space between them. Where necessary all traffic routes must be suitably indicated. Pedestrians or vehicles must be able to use traffic routes without endangering those at work. There must be sufficient separation of traffic routes from doors, gates and pedestrian traffic routes.
- For internal traffic, lines marked on roads / access routes and between buildings shall clearly indicate where vehicles are to pass.
- Temporary obstacles shall be brought to the attention of drivers by warning signs or hazard cones.
- Speed limits shall be clearly displayed. Speed ramps preceded by a warning signs or marker are necessary.
- 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.
- Safest route shall be provided between places where vehicles have to call or deliver.
- Avoid vulnerable areas/items such as fuel or chemicals tanks or pipes, open or unprotected edges and structures likely to collapse

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- Safe areas shall be provided for loading and unloading.
- Avoid sharp or blind bends. If this is not possible hazards should be indicated e.g. blind corner.
- Ensure road crossings are minimum and clearly signed.
- Entrance and gateways shall be wide enough to accommodate a second vehicle without causing obstruction.
- Set sensible speed limits which are clearly sign posted.
- Where necessary ramps should be used to retard speed. This shall be preceded by a warning sign or mark on the road.
- Forklift trucks shall not pass over road hump unless of a type capable of doing so.
- Overhead electric cable, pipes containing flammable hazardous chemical shall be shielded by using goal posts height gauge posts or barriers.
- Road traffic signs shall be provided on prominent locations for prevention of incidents and hazards and for quick guidance and warning to employees and public. Safety signs shall be displayed as per the project working requirement and guideline of the state in which project is done. Vehicles hired or used shall not be parked within the 15m radius of any working area. Any vehicle, that is required to be at the immediate/near the vicinity, shall be approved by the person in-charge of the site.

11.7.2 TRAFFIC ROUTE FOR PEDESTRIANS

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

11.7.3 WORK VEHICLE

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

- A high level of stability.
- A safe means of access/egress.
- Suitable and effective service and parking brakes.
- Windscreens with wipers and external mirrors giving optimum all round visibility.
- Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
- Provision of seat belts.
- Guards on dangerous parts.
- Driver protection - to prevent injury from overturning and from falling objects/materials.
- Driver protection from adverse weather.
- No vehicle shall be parked below HT/LT power lines.
- Valid Pollution Under Control certification for all vehicles

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11.7.4 DAILY CHECK BY DRIVER

- There should also be daily safety checks containing below mentioned points by the driver before the vehicle is used.
 - Brakes.
 - Tires.
 - Steering.
 - Mirrors.
 - Windscreen wipers.
 - Wipers.
 - Warning signals.
 - Specific safety system i.e. control interlocks
- Management should ensure that drivers carry out these checks.

11.7.5 TRANSPORTATION OF PERSONNEL AND MATERIALS BY VEHICLES

- 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.
- 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.
- All overhangs shall be made clearly visible and restricted to acceptable limits
- Load shall be checked before moving off and after traveling a suitable distance.
- 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.
- Warning signs shall be displayed during transportation of material.

All vehicles used by BHEL shall be in worthy condition and in conformance to the Land Transport requirement.

11.7.6 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.

11.8 EMERGENCY PREPAREDNESS AND RESPONSE

- Emergency preparedness and response capability of site shall be developed as per Emergency Preparedness and Response plan issued by Regional HQ
- Availability of adequate number of first aiders and fire warden shall be ensured with BHEL and its subcontractors
- 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.
- Assembly point shall be earmarked and access to the same from different location shall be shown
- Fire exit shall be identified and pathway shall be clear for emergency escape.

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- Appropriate type and number of fire extinguisher shall be deployed as per Fire extinguisher deployment plan and validity shall be ensured periodically through inspection
- Adequate number of first aid boxes shall be strategically placed at different work places to cater emergency need. Holder of the first aid box shall be identified on the box itself who will have the responsibility to maintain the same.
- First aid center shall be developed at site with trained medical personnel and ambulance
- Emergency contact numbers (format given in EPRP) of the site shall be displayed at prominent locations.
- Tie up with fire brigade shall be done in case customer is not having fire station.
- Tie up with hospital shall be done in case customer is not having hospital.
- Disaster Management group shall be formed at site
- Mock drill shall be arranged at regular intervals. Monthly report of the above to be given to BHEL safety Officer as per prescribed BHEL formats
- Mock drill shall be conducted on different emergencies periodically to find out gaps in emergency preparedness and taking necessary corrective action

12.0 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 and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend testetc as applicable, to enable inspection agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.

12.1 DAILY HSE CHECKS

Both the Site Supervisors and safety officer of Subcontractor are to conduct daily site Safety inspection around work activities and premises to ensure that work methods and the sites are maintained to an acceptable standard. The following are to form the common subjects of a daily safety inspection:

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

12.2 INSPECTION OF PPE

- PPEs shall be inspected by HSE officer at random once in a week as per format no. HSEP:13-F06 for its compliance to standard and compliance to use and any adverse observation shall be recorded in the PPE register.
- The applicable PPEs for carrying out particular activities are listed below.

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12.3 INSPECTION OF T&Ps

- A master list of T&Ps shall be maintained by each subcontractor.
- All T&Ps being used at site shall be inspected by HSE officer once in a month as per format no. HSEP:13-F07 for its healthiness and maintenance.
- The T&Ps which require third party inspection shall be checked for its validity during inspection. The third party test certificate should be accompanied with a copy of the concerned competent person's valid qualification record.
- The validity of T&P shall be monitored as per "Status of T&Ps" format no. HSEP:13-F08

12.4 INSPECTION OF CRANES AND WINCHES

- 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.
- Cranes and Winches shall be inspected by HSE officer once in a month as per format no. HSEP:13-F09 for healthiness, maintenance and validity of third party inspection.
- The date of third party inspection and next due date shall be painted on cranes and winches.
- The operators/drivers shall be authorized by sub-contractor based on their competency and experience and shall carry the I-card.
- 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.

12.5 INSPECTION ON HEIGHT WORKING

- Inspection on height working shall be conducted daily by supervisors before start of work to ensure safe working condition including provision of
 - Fall arrestor
 - Lifelines
 - Safety nets
 - Fencing and barricading
 - Warning signage
 - Covering of opening
 - Proper scaffolding with access and egress.
 - Illumination
- Inspection on height working shall be conducted once in a week by HSE officer as per format no. HSEP:14-F10.
- Medical fitness of height worker shall be ensured.
- Height working shall not be allowed during adverse weather.

12.6 INSPECTION ON WELDING AND GAS CUTTING OPERATION

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

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- Inspection during welding and gas cutting operations shall be carried out by HSE officer once a month as per format no. HSEP:14-F11.
- Use of fire blanket to be ensured to avoid falling of splatters during welding or gas cutting operation at height.
- Availability of fire extinguisher at vicinity shall be ensured.

12.7 INSPECTION ON ELECTRICAL INSTALLATION/APPLIANCES

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

12.8 INSPECTION OF ELEVATOR

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

13.0 HSE PERFORMANCE

HSE performance of the subcontractor shall be monitored as per the following parameters:

Sl. No.	Parameters of measurement
1	Timely deployment of qualified safety officer and cumulative number of days in a month the required no. of qualified safety officer is available
2	Shortfall in number of meetings in the month conducted or attended by the safety officer
3	Level of compliance wrt decisions taken in previous meetings/audit/inspection/as reported.
4	Delay in submission of monthly report on safety in the prescribed format
5	Delay in reporting any incident including near-miss to BHEL /Customer/statutory authority(if required)
6	Degree of PPE non-compliance
7	Non- conducting of health check-up as per BOCW requirements
8	Non availability of proper first-aid facility , ambulance, adequate labour welfare initiatives
9	Non conductance of induction training and tool box meeting
10	Total number of instances in the month, House keeping NOT attended inspite of instructions by BHEL i.e. removal/disposal of surplus earth/ debris/scrap/unused/surplus cable drums/other electrical items/surplus steel items/packing material

- Suitable HSE reward system shall be developed at site level to promote HSE compliance amongst workmen.
- To decide HSE reward performance towards HSE shall be evaluated for workmen and it shall be awarded regularly in public gathering.
- 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.

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14.0 HSE PENALTIES

- As per contractual provision HSE penalties shall be imposed on subcontractors for non- compliance on HSE requirement as per format no. HSEP:14-F14. The list in the format is only indicative. For any other violation, not listed in the format, the minimum penalty amount is to be decided as per BOCW act.
- If principal customer/statutory and regulatory bodies impose some penalty on HSE due to the non-compliance of the subcontractor the same shall be passed on to them.
- The penalty amount shall be recovered by Site Finance department from subcontractors from the RA/Final bill.

15.0 OTHER REQUIREMENTS

- 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 notifying the subcontractor suitably.
- If the subcontractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps 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.
- If the subcontractor succeeds in carrying out its job in time without any fatal or disabling injury incident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the subcontractor suitably for the performance.
- In case of any damage to property due to lapses by the subcontractor, BHEL shall have the right to recover the cost of such damages from the subcontractor after holding an appropriate enquiry.
- The subcontractor shall take all measures at the sites of the work to protect all persons from incidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding of law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the subcontractor be paid to compromise any claim by any such person, should such claim proceeding be filed against BHEL, the subcontractor hereby agrees to indemnify BHEL against the same.
- The subcontractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
- The subcontractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard.
- BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the subcontractor shall adhere to such instructions.



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- BHEL may prohibit the use of any construction machinery, which according to the organization is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.

16. NON COMPLIANCE

NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE SUBCONTRACTOR AS UNDER FOR EVERY INSTANCE OF VIOLATION NOTICED:

SN	Violation of Safety Norms	Fine (in Rs)
01	Not Wearing Safety Helmet	200/- *
02.	Not wearing Safety Belt or not anchoring life line	500/-*
03	Not wearing safety shoe	200/-*
04	Not keeping gas cylinders vertically	200/-
05	Not using flash back arrestors	100/-
06	Not wearing gloves	50/- *
07.	Grinding Without Goggles	50/- *
08.	Not using 24 V Supply For Internal Work	500/-
09.	Electrical Plugs Not used for hand Machine	100/-
10.	Not Slinging properly	200/-
11.	Using Damaged Sling	200/-
12.	Lifting Cylinders Without Cage	500/-
13.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
14.	Not Removing Small Scrap From Platforms	500/-
15.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	500/-
16.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
17.	Improper Earthing Of Electrical T&P	500/-
18	No or improper barricading	500/-
19.	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-
20.	Incident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
21.	Fatal Incident Resulting in total loss in Earning Capacity	1,00,000/- per victim for first instance #

- Legend:-

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the subcontractor. The amount collected above will be utilized for giving award to the employees who could avoid incident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.

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17.0 HSE AUDIT/INSPECTION

- Regular HSE Audit/inspection shall be carried out by Subcontractor as per Site HSE audit calendar.
- HSE checklist(**Annexure 02**)shall be used for carrying out audit/inspection and report shall be submitted to BHEL sitemangement
- All non-conformities and observations on HSE identified during internal or external HSE audit shall be disposed off by site in a time bound manner and reported back the implementation status
- Corrective action and Preventive action on HSE issues raised by certification body issued by Regional HQs shall be implemented by site and reported to Site management.

18.0 MONTHLY HSE REVIEW MEETING

- Site shall hold HSE review meeting every month to discuss and resolve HSE issues of site and improve HSE performance. It will also discuss the incidents occurred since previous meeting,its root causeand Corrective action and Preventive action.The agenda is given below:
 - Implementation of earlier MOM
 - HSE performance
 - HSE inspection
 - HSE audit and CAPA
 - HSE training
 - Health check-up camp
 - HSE planning for the erection and commissioning and installation activities in the coming month
 - HSE reward and promotional activities
- The meeting shall be chaired by Construction Manager, convened by HSE coordinator and attended by all HOS, Site Incharge of Subcontractors and HSE officer of Subcontractors.
- MOM on the discussion will be circulated to the concerned for implementation.

19.0 FORMATS USED(Details available in Annexure-04)

SL. No.	Format Name	Format No.	Rev No.
01	Inspection of First Aid Box	HSEP:13-F01	00
02	Health Check Up	HSEP:13-F02	00
03	HSE Induction Training	HSEP:13-F03	00
04	Tool Box Talk	HSEP:13-F04	00
05	Monthly Site HSE Report	HSEP:13-F05	00
06	Inspection of PPE	HSEP:13-F06	00



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07	Inspection of T&Ps	HSEP:13-F07	00
08	Status of T&Ps	HSEP:13-F08	00
09	Inspection of Cranes and Winches	HSEP:13-F09	00
10	Inspection on Height Working	HSEP:13-F10	00
11	Inspection on Welding & Gas Cutting	HSEP:13-F11	00
12	Inspection on Electrical Installation	HSEP:13-F12	00
13	Inspection on Elevator	HSEP:13-F13	00
14	HSE Penalty	HSEP:13-F14	00
15	Accident /incident / property damage /fire incident report	HSEP:13-F15	00

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20.0 ANNEXURES

ANNEXURE 01

As per Contract Labour (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 labour 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 Labour Institutes, Government of India.
(xviii)	A bottle containing 100 tablets (each of 5 grains) of aspirin
(xix)	Ointment for burns
(xx)	A bottle of suitable surgical anti-septic solution

(b) For establishment in which the number of contract labour 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.



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(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 labour 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 recoulement of the equipment when necessary.



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ANNEXURE 02

HSE AUDIT/INSPECTION CHECKLIST CUM COMPLIANCE REPORT

PROJECT: _____

SUBCONTRACTOR: _____

DATE : _____

OWNER : _____

INSPECTION BY: _____

Note : write 'NA' wherever the items is not applicable

Item	Y e s	N o	Remarks	Action
HOUSEKEEPING				
Waste containers provided and used				
Passageways and walkways clear				
General neatness of working area				
Other				
PERSONNEL PROTECTIVE EQUIPMENTS				
Goggles; shields				
Face protection				
Hearing protection				
Respiratory masks etc.				
Safety belts				
Other				
EXCAVATIONS / OPENINGS				
Openings properly covered or barricaded				
Excavations shored				
Excavations barricaded				
Overnight lighting provided				
Other				
WELDING, CUTTING				
Gas cylinders chained upright				
Cable and hoses not obstructing				
Fire extinguisher (s) accessible				
Others				
SCAFFOLDING				
Fully decked platforms				
Guard and intermediate rails in place				
Toe boards in place				
Adequate shoring				
Adequate access				
Others				
LADDER				
Extension side rails 1 m above				
Top of landing				
Properly secured				



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Angle + 70° from horizontal				
Other				
HOISTS, CRANES AND DERRICKS				
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				
MACHINERY, TOOLS & EQUIPMENT				
Proper instruction				
Safety devices				
Proper cords				
Inspection and maintenance				
Other				
VEHICLE AND TRAFFIC				
Rules and regulations observed				
Inspection and maintenance				
Licensed drivers				
Other				
TEMPORARY FACILITIES				
Emergency instructions posted				
Fire extinguishers provided				
Fire-aid equipment available				
General neatness				
Others				
FIRE PREVENTION				
Personnel instructed				
Fire extinguishers checked				
No smoking in prohibited areas.				
Hydrants				
Clearance				
Others				
ELECTRICAL				
Proper wiring				
ELCB's provided				
Ground fault circuit interrupters				
Protection against damage				
Prevention of tripping hazards				
Other				
HANDLING & STORAGE OF MATERIALS				
Properly stored or stacked				
Passageways clear				
Other				
FLAMMABLE GASES AND LIQUIDS				
Containers clearly identified				
Proper storage				
Fire extinguisher nearby				



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Other				
WORKING AT HEIGHT				
Safety nets				
Safety belts				
Safety helmets				
Anchoring of safety belt to the life line rope				
ENVIRONMENT				
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.				
HEALTH CHECKS				
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.				



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ANNEXURE 03

REFERENCES

- Contract documents
- Relevant legislations
- HSEMSM
- Relevant Indian standards as listed below (illustrative only):

SL 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:3786 – 1983 (Reaffirmed 2002)	Method for Computation of Frequency and Severity Rates for Industrial Injuries and Classification of Industrial Incidents
(10)	IS:4770 : 1991 (Reaffirmed 2006)	Rubber Gloves – Electricals purposes-Specification
(11)	IS:4912 : 1978 (Reaffirmed 2002)	Safety Requirements for Floor and Wall Openings, Railings and Toe Boards
(12)	IS: 5983 – 1980 (Reaffirmed 2002)	Specification for Eye-Protectors
(13)	IS:6519 – 1971 (Reaffirmed 1997)	Code of Practice for Selection, Care and Repair of Safety Footwear
(14)	IS:9167:1979	Specification for Ear-Protectors
(15)	IS:6994(Part I)-1973 (Re affirmed 1996)	Specification for Industrial Safety Gloves Leather and Cotton Gloves
(16)	IS:8519 – 1977 (Reaffirmed 1983)	Guide for Selection of Industrial Safety Equipment for Body Protection.
(17)	IS 11006 : 2011	Flash Back(Flame Arrestor) Specification



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(18)	IS:8520 – 1977 (Reaffirmed 2002)	Guide for Selection of Industrial Safety Equipment for Eye, Face and Ear Protection.
(19)	IS:9473:2002	Respiratory Protective Devices-Filtering Half Masks to protect against Particles-Specification.
(20)	IS:9944:1992 (Reaffirmed 2003)	Natural and Man-made Fiber Rope Slings-Recommendations on Safe working loads.
(21)	IS:11057 – 1884 (Reaffirmed 2001)	Specification for Industrial Safety Nets
(22)	IS:12254:1993 (Reaffirmed 2002)	Polyvinyl Chloride (PVC) Industrial Boots-Specification
(23)	IS:13367(Part 1):1992 (Reaffirmed 2003)	Safe Use of Cranes-Code of Practice
(24)	IS:14166:1994 (Reaffirmed 2002)	Respiratory Protective Devices-Full Face Masks Specification
(25)	IS:14746 : 1999 (Reaffirmed 2003)	Respiratory Protective Devices-Half Masks and Quarter Masks - Specification
(26)	IS : 15397 :2003 (Reaffirmed 2008)	Portable Extinguisher Mechanical Foam Type(Stored Pressure)-Specification
(27)	IS: 19011:2002	Guidelines for Quality and/or Environmental Management Systems Auditing



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ANNEXURE 04 : SAFETY FORMATS

&

ANNEXURE 05 : WORK PERMIT FORMATS

**POWER SECTOR****INSPECTION OF FIRST AID BOX**

FORMAT NO: HSEP:13-F01
REV NO.: 00
PAGE NO. 01 OF 02

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

Number of employees on 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.		

**POWER SECTOR****INSPECTION OF FIRST AID BOX**

FORMAT NO: HSEP:13-F01
REV NO.: 00
PAGE NO. 02 OF 02

Sl.No.	Item	No. Available	Remarks
17	Whether 120ml bottle containing Sal volatile having the dose and mode of administration indicated on the label, available.		
18	Whether roll of adhesive plaster (6 cmX1 meter) available		
19	No of rolls of adhesive plaster (2 cmX1 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 labour 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		

Signature of Subcontractor's Site I/C::

**POWER SECTOR****HEALTH CHECK UP**

FORMAT NO: HSEP:13-F02

REV NO.: 00

PAGE NO. 01 OF 02

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

NAME:

History Of Past Illness	H/O Epilepsy
	H/O Drug Allergy
	H/O Diabetics/ Hypertension
	H/O Unconsciousness
Personal History	
EXAMINATION	OBSERVATION
<u>General Physical Examination</u>	
Height	:
Weight	:
BMI	:
Built And nourishment	:
Pallor	:
Temperature	:
Chest Expansion	: Inspiration Expansion
Lymph Node Enlargement	:
<u>Ear, Nose, Throat</u> :	
Ear	:
Nose	:
Throat	:



POWER SECTOR

HEALTH CHECK UP

FORMAT NO: HSEP:13-F02

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

Signature of the examining doctor



POWER SECTOR

HSE INDUCTION TRAINING

FORMAT NO: HSEP:13-F03

REV NO.: 00

PAGE NO. 01 OF 01

Name of Site :	
Name of Sub-Contractor :	
Date :	
Name of Training Co-ordinator	

Signature of Training co-ordinator :

**POWER SECTOR****TOOL-BOX TALK**

FORMAT NO: HSEP:13-F04

REV NO.: 00

PAGE NO. 01 OF 01

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 :

**POWER SECTOR****PERSONAL PROTECTIVE EQUIPMENTS**

FORMAT NO: HSEP:13-F06

REV NO.: 00

PAGE NO. 01 OF 01

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

Item	Issued this Month	Nos. Issued up to the Month	Percentage of usage at site
Safety Helmet			
Safety Shoes			
Full Body Harness			
Fall Arrestor			
Safety Nets			
Other PPEs.			

Signature of Site I/C of Subcontractor :

**POWER SECTOR****INSPECTION OF T&Ps**

FORMAT NO: HSEP:13-F07

REV NO.: 00

PAGE NO. 01 OF 01

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

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-Site Safety Officer (BHEL)		Signature-Subcontractor/ Subcontractor's Safety Officer

**POWER SECTOR****STATUS OF T&Ps**

FORMAT NO: HSEP:13-F08

REV NO.: 00

PAGE NO. 01 OF 01

Name of Site	
Name of Sub-Contractor	
Date of Inspection	

Item	Nos. Deployed	Identification No.	Nos. Tested by competent person	Validity of Test Certificate
Winches				
Chain Blocks				
Wire Rope				
Slings				
Man Cages				
D-Shackles				
Air Compressors				
Crawler Cranes				
Mobile Cranes				
Hydra Cranes				
Others				

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:13-F09

REV NO.: 00

PAGE NO. 01 OF 03

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		

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:13-F09

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Sl.no.	Description	Observation	Measures
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		

WINCH

Sl. No.	Description	YES	NO	NA	Remarks
1	Has the copy of Third Party Inspection certificate been provided in winch machine shed?				
2	Is winch machine operator experienced enough to operate the winch machine?				
3	Is the winch machine operated by someone other than the winch machine operator?				
4	Is there guard provided in all moving parts like wheel and motor's shaft?				
5	Will it protect against unforeseen operational contingencies?				
6	Are brakes, clutch and locking arrangement working properly?				
7	Has it been ensured that the guard does not constitute a hazard by itself?				
8	Are the cranks and the connecting rods protected by guardrails?				
9	Is there provision for fully covered shed with wooden plank roof?				

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:13-F09

REV NO.: 00

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Sl. No.	Description	YES	NO	NA	Remarks
10	Is wire rope free from any kind of damage or wear and tear?				
11	Is split pin provided for the protection of clutch and brake locking arrangement?				
12	Is pulley inspected by competent person and certified before use?				
13	Is pulley free from any wear and tear visually?				
14	Is winch rope barricaded with clipsheet for the protection of rope and person?				
15	Is the wire rope lubricated by cardium oil?				
16	Is there any friction in wire rope which may damage the wire rope rather than the rolling parts?				
17	Is there any oil leakage in the hydraulic system of the winch machine?				
18	Has it been ensured that the guard will not cause discomfort or inconvenience to operator?				
	Total Number of NO:				
	Total Number of NA:				
	% Compliance :				

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF HEIGHT WORKING**

FORMAT NO: HSEP:13-F10

REV NO.: 00

PAGE NO. 01 OF 02

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

Sl. No.	Descriptions	Observation (Yes/No)	Remarks
1	All the workers have been explained safe work method?		
2	An established communication system has been established and explained to the workers.		
3	Adequate illumination has been ensured.		
4	Work area inspected prior to the start of the work.		
5	Area below the work place barricaded, particularly below hot work.		
6	Workers provided with bags /box to carry bolts, nuts and hand tools		
7	Arrangement for fastening hand tools made.		
8	All work platforms ensured to be of adequate strength and ergonomically suitable.		
9	Fabricated makeshift arrangements are checked for quality and type of material welding, anchoring etc.		
10.	Work at more than one elevation at the same segment is restricted.		
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	Do side rails extend 36" above top landing?		
7	Are built up ladders constructed of sound materials?		

**POWER SECTOR****INSPECTION OF HEIGHT WORKING**

FORMAT NO: HSEP:13-F10

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Sl. No.	Descriptions	Observation (Yes/No)	Remarks
8	Are rugs and cleats not over 12" on center?		
9	Metal ladders not used around electrical hazards.		
10	Proper maintenance and storage.		
11	Ladders placed at right slope.		
12	Ladders / staircases welded/ bolted properly.		
13	Any obstruction in the stairs.		
14	Are landing provided with handrails, knee rails, toe boards etc.?		
15	Whether ramp is provided with proper slope.		
16	Proper hand rails / guards provided in ramps.		
	Housekeeping		
1	Walkways, aisles & all overhead workplaces cleared of loose material.		
2	Flammable materials, if any, are cleared.		
3	All the de shuttering materials are removed after de shuttering is done.		
4	Platforms and walkways free from oil/grease or other slippery material.		
5	Collected scrap are brought down or lowered down and not dropped from height.		
	PPE And Safety Devices		
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.		

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**

FORMAT NO: HSEP:13-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 electric cable fitted properly in junction box on m/c?			
3	Is electrical cable free from joints?			
4	Are the joints attached firmly & insulated with tape?			
5	Is double earthing given to body of m/c?			
6	Is the physical condition of the m/c good?			
7	Is ON/OFF switch connected to the m/c is working and in good condition?			
8	Are indication lamps on m/c working?			
9	Is the electrode holder in good condition?			
10	Are the cables of the welding m/c lugged & tight properly?			
11	Are return lead connected properly (Rod, Angle, Channels shall not be used)			
	Total No of NO			
	Total No of YES			

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**

FORMAT NO: HSEP:13-F11

REV NO.: 00

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Gas Cutting				
Sl. no	Description	Yes	N o	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 :

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

FORMAT NO: HSEP:13-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
A	Cable		
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	DBs/SDBs		
1.	Is earth conductor continued upto DB / SDB?		
2.	Whether DBs and extension boards are protected from rain / water?		
3.	Is there any overloading of DBs / SDBs?		
4.	Are correct / proper fuses & CBs provided at main boards and sub-boards?		
5.	Is energized wiring in junction boxes, CB panels & similar places covered all times?		
C	ELCB		
1.	Whether the connections are routed through ELCB?		
2.	Is ELCB sensitivity maintained at 30 mA?		

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

FORMAT NO: HSEP:13-F12

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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?		
D	Grounding		
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.		
E	Electrically operated Machines or Accessories.		
1.	Whether the plug top is provided everywhere.		
2.	Are all metal parts of electrical equipment and light fittings / accessories grounded?		
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 :

**POWER SECTOR****INSPECTION OF ELEVATOR**

FORMAT NO: HSEP:13-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 NO: HSEP:13-F14

REV NO.: 00

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Sub: MEMO for Penalty for non compliances in Safety

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

Safety Area

SN	Violation of Safety Norms	Fine (in Rs)
01	Not Wearing Safety Helmet	200/- *
02.	Not wearing Safety Belt or not anchoring life line	500/-*
03	Not wearing safety shoe	200/-*
04	Not keeping gas cylinders vertically	200/-
05	Not using flash back arrestors	100/-
06	Not wearing gloves	50/- *
07.	Grinding Without Goggles	50/- *
08.	Not using 24 V Supply For Internal Work	500/-
09.	Electrical Plugs Not used for hand Machine	100/-
10.	Not Slinging properly	200/-
11.	Using Damaged Sling	200/-
12.	Lifting Cylinders Without Cage	500/-
13.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
14.	Not Removing Small Scrap From Platforms	500/-
15.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	500/-
16.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
17.	Improper Earthing Of Electrical T&P	500/-
18	No or improper barricading	500/-
19.	Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case)	1000/-
20.	Incident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
21.	Fatal Incident Resulting in total loss in Earning Capacity	1,00,000/- per victim for first instance #

Legend:-

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

**POWER SECTOR****HSE PENALTY**

FORMAT NO: HSEP:13-F14

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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/ labour _____

3. Total Penalty= 1. X 2. = _____

Signature :

Witnessed by: (Sub- Contractor representative) (BHEL Personnel)

Name_____

Name_____

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

**POWER SECTOR- HQ****Incident Report**

(To be submitted within 24 hours of time of incident)

FORMAT NO: HSEP:13-F15

REV NO.: 00

PAGE NO. 01 OF 01

Type of incident: Fatal/Major/ Minor/Fire/Property Damage/Near-miss

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 MANHOURS 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)						
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			



SAFETY WORK CLEARANCE

Permit no.

Project:

Emergency Contact Nos:

Subcontractor:

BURNING/WELDING /HOT WORK PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____

Name of Work Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	Proper Access/Exit available		
2.	Proper ventilation and /or lighting provided.		
3.	Proper and safe scaffolding, platform, ladder provided.		
4.	Welding machine located in a clean and dry area.		
5.	Welding machine grounded at the equipment and proper leakage current protection device (ELCB) provided for welding machine.		
6.	Emergency STOP buttons are in working condition. Welder /Helper knows how to operate it.		
7.	Welding machine input/output cables, welding holder and weld return clamp (Holder) are insulated and in good condition.		
8.	Welder & Fitter trained to connect ground/work return clamps (Holder) to work place prior to energization of welding machine.		
9.	Gas cylinders are stacked vertically and not below the welding / cutting area. Regulator key is available with cylinder.		
10.	Pressure gauges/Flash back arrestor provided and in working condition.		
11.	Personal Protective equipment Minimum applicable: safety helmet, safety goggles, welding helmet, safety shoes, leather gloves, long sleeve and nose mask -provided		
12.	In case of pits, water removed from the pit and wood/rubber insulation provided.		
13.	Safety signboards are in place.		
14.	Adequate and Suitable nos. of fire fighting extinguisher provided.		
15.	Nearby combustible material removed. Housekeeping done.		
16.	Other		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

*I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.***Name of Work Performing Authority:** _____ Sign: _____ Date: _____ Time: _____**Permit Cancellation:***I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.*

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

Original at BHEL site

Second Copy – BHEL SAFETY

Third Copy : Contractor



SAFETY WORK CLEARANCE

Permit no.

Project:

Emergency Contact Nos:

Subcontractor:

LIFTING ACTIVITY PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	Crane used for lifting activity 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.	Access and exit marked and without obstruction.		
6.	Lifting arrangement adequate.		
7.	Uwanted rubbish material removed from work platform.		
8.	Minimum 2 guidelines have been provided for balancing and guiding jobs to be lifted.		
9.	Periphery area of crane booms as well as lifting job is barricaded and unauthorised/no-entry sign board posted.		
10.	Rigger and signal man is trained and competent for lifting work.		
11.	No lifting activity to be carried out during lightening, heavy wind/rain.		
12.	If scaffolding to be used during lift, scaffolding with valid tag available for use.		
13.	Double lanyards safety harness/belt checked an in working condition.		
14.	Safety shoes (non-slip), helmet with chin strap available with employees.		
15.	Others.		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

*I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.***Name of Work Performing Authority:** _____ Sign: _____ Date: _____ Time: _____**Permit Cancellation:***I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.*

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

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SAFETY WORK CLEARANCE

Permit no.

Project:

Emergency Contact Nos:

Subcontractor:

WORKING AT HEIGHT PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

No.	Item	Yes	Not required
1.	All workers on job are medically fit for working at height (Person should not have vertigo)		
2.	Scaffolding with valid tag available for use		
3.	Safety harness with life line support/ fall arrester are checked and in working condition		
4.	Safety shoes (non-slip), Helmet with chin strip available with employees		
5.	Safety nets are provided as per design and provided 25 ft. below working area & extending 8 ft beyond.		
6.	Horizontal life lines are provided to cater to design specification of 2300kg per person.		
7.	Ladders have been inspected and provided as per BHEL standard/contract.		
8.	All lifting / tightening tools, hand tools/equipment checked and in good condition		
9.	Access and exit marked and without obstruction.		
10.	Lighting arrangement adequate.		
11.	Unwanted and rubbish material removed from working platform.		
12.	Electrical cable, welding Hose/Compressed air hose properly secured and lay down without obstruction.		
13.	Signboards provided on working platforms		
14.	Hazards in the vicinity are identified and communicated to the worker.		
15.	Other		

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

*I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.***Name of Work Performing Authority:** _____ Sign: _____ Date: _____ Time: _____**Permit Cancellation:***I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.*

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

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