

**TENDER SPECIFICATION**  
**BHEL: PSSR: SCT: 1827**  
**FOR**  
**Murum Blanketing works**  
**at**  
**2X660MW Ennore SEZ STPP (on the ash**  
**dyke of NCTPS)**

**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 1<sup>st</sup> October, 2015
- Volume-IC: General conditions of Contract  
Rev 01 dated 1st June 2012,  
Amendment 03 dated 1<sup>st</sup> October, 2015
- Volume-ID: Forms & Procedures  
Rev 01 dated 1st June 2012  
Amendment 01 dt 1<sup>st</sup> October, 2015

**VOLUME –I    BOOK – I**

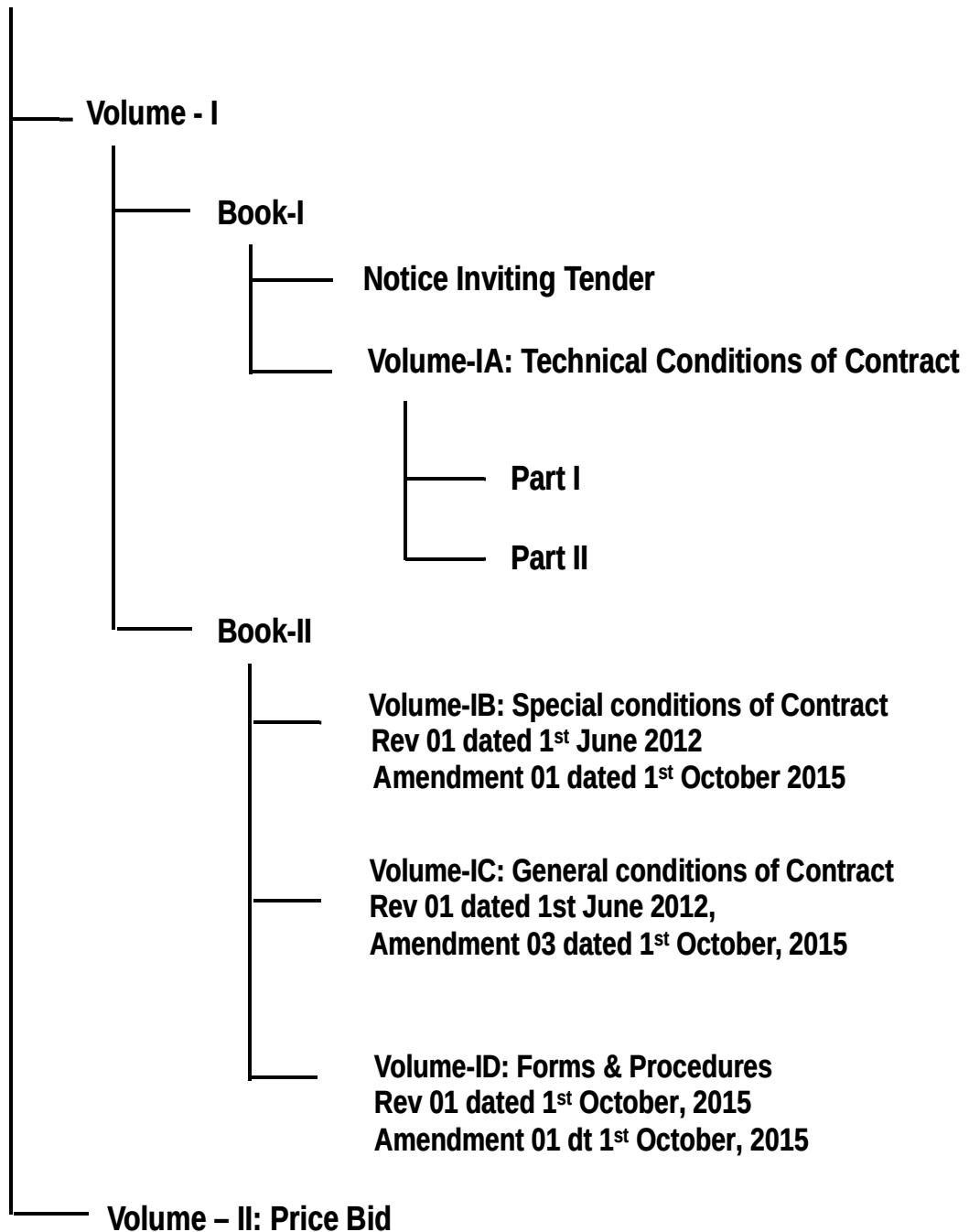


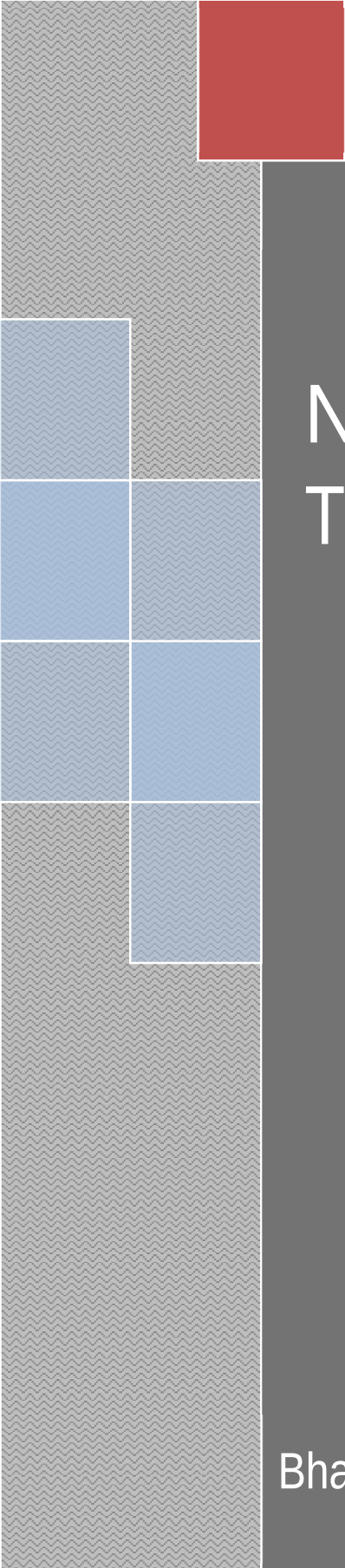
**BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)  
Power Sector – Southern Region  
690, Anna Salai, Nandanam, Chennai – 600 035.

## **TENDER SPECIFICATION CONSISTS OF**

### **Tender Specification**





# NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



# NOTICE INVITING TENDER

Ref: BHEL: PSSR: SCT: 1827

Date: 19 Apr, 2019

## **NOTICE INVITING TENDER (NIT)**

**Submission only through E-Procurement Portal**

**<https://bhel.abcprocure.com>**

**Note: Bidder may download Tender Document from web sites**

To

Dear Sir/Madam

### **Sub: NOTICE INVITING TENDER**

Online Sealed offers in two part bid system (National competitive bidding (NCB)) 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)     | <b>TENDER NUMBER</b>              | <b>BHEL: PSSR: SCT: 1827</b>                                                                                                                                 |
| ii)    | <b>Broad Scope of job</b>         | Murum Blanketing works at 2X660MW Ennore SEZ STPP (on the ash dyke of NCTPS)                                                                                 |
| iii)   | <b>DETAILS OF TENDER DOCUMENT</b> |                                                                                                                                                              |
| A      | Volume-IA                         | Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc |
| B      | Volume-IB                         | Special conditions of Contract, Rev 01 dated 1st June 2012, Amendment 01 dated October 01, 2015                                                              |
| C      | Volume-IC                         | General conditions of Contract Rev 01 dated 1st June 2012, Amendment 03 dated October 01, 2015                                                               |
| D      | Volume-ID                         | Forms & Procedures Rev 01 dated 1st June 2012 Amendment 01 dated October 01, 2015                                                                            |
| E      | Volume-II                         | Price Schedule (Absolute value).                                                                                                                             |

Tender Specification No.: BHEL: PSSR: SCT: 1827

## NOTICE INVITING TENDER

|       |                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |            |
|-------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| iv)   | Issue of Tender Documents           | <p><b>1. This is an E-tender floated online through our E-Procurement Portal</b><br/> <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a></p> <p><b>2. Sale</b><br/> <b>Start: 20.04.2019</b><br/> <b>Close:</b> Tender documents can be downloaded till closing time for offer submission.</p> <p><b>3. From:</b> BHEL website (www.bhel.com -&gt; Tender Notifications). Tender documents for bidder's reference can be downloaded from this website till due date of submission.</p> | Applicable |
| v)    | Due Date & Time of Offer Submission | <p><b>Date:13.05.2019, Time :15.00 Hrs</b><br/> The bidder should submit their offer online in e-Procurement portal at <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a>.</p> <p><b><u>Bidders are requested to upload their offer well in advance in order to avoid last minute congestion at this website.</u></b></p> <p><b>Hard copy bid or bids through E-mail / fax shall not be accepted.</b></p>                                                                              | Applicable |
| vi)   | Opening of Tender                   | <p><b>Date: 13.05.2019, Time :15.30 Hrs</b><br/> Notes:<br/> (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.<br/> (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><b>Rs.19,80,000/-</b> (Rupees Nineteen Lakhs Eighty Thousand only).<br/> - Refer Vol-1A Part-II Chapter-1 of Technical Conditions of Contract (Volume-I, Book-I) for mode of payment of EMD.<br/> - Exemption of EMD for MSEs is not applicable for this tender.<br/> - One time EMD is not applicable for this tender.</p>                                                                                                                                                                            | Applicable |
| viii) | Cost of Tender                      | <p><b>Rs. 2,000/-</b> (Rupees Two Thousand Only)<br/> - Cost of tender shall be remitted through, Electronic Fund Transfer credited in BHEL account or Banker's cheque or Pay order or Demand draft, in favour of BHEL.</p>                                                                                                                                                                                                                                                                               | Applicable |

## NOTICE INVITING TENDER

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|-----|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
|     |                                                                | - <b><u>Exemption of Cost of Tender for MSEs is not applicable for this tender.</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |
| ix) | Last Date For Seeking Clarification                            | Bidders may submit their queries in <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a> at least 7 days before the due date of offer submission or two days before the scheduled date of pre-bid meeting whichever is earlier along with soft version also, addressing to undersigned & to others as per contact address given above.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Applicable |
| x)  | Schedule of Pre Bid Discussion (PBD)                           | Date: <b>29.04.2019</b> Time <b>11.00AM</b><br>at BHEL:PSSR:Chennai-35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Applicable |
| xi) | Integrity Pact & Details of Independent External Monitor (IEM) | <p>a. Integrity Pact (IP) is a tool to ensure that activities and transactions between the company and its Bidders / Contractors are handled in a fair, transparent and corruption free manner. A panel of Independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL. The IP as per format given at Volume IA Part II of this tender is to be submitted (duly signed and stamped by the authorized signatory who signs in the offer) along with Techno Commercial Bid. Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this pact would be a preliminary qualification. <b>Details of IEM for this tender is furnished below:</b></p> <p><b>Mrs. Pravin Tripathi, IA &amp; AS (Retd.)</b><br/> <b>D-243, Anupam Gardens,</b><br/> <b>Lane IB, Neb Sarai, Sainik Farms,</b><br/> <b>New Delhi – 110 068</b><br/> <b>E mail: <a href="mailto:pravin.tripathi@gmail.com">pravin.tripathi@gmail.com</a></b></p> <p><b>and</b><br/> <b>Shri D.R.S. Chaudhary, IAS (Retd.)</b><br/> <b>Flat No. L-202 &amp; L-203 (1st Floor)</b><br/> <b>Ansal Lake View Enclave</b><br/> <b>Shamla Hills, Bhopal- 462 013 (M.P.).</b><br/> <b>Contact Details: Ph: +91 755 4050495</b><br/> <b>Email ID: <a href="mailto:dilip.chaudhary@icloud.com">dilip.chaudhary@icloud.com</a></b></p> <p>b. Please refer section- 8 of the IP (refer the format given at Volume IA Part II of this tender) for Role and Responsibilities of IEMs. In case of any</p> | Applicable |

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|     |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
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|     |                 | <p>complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.</p> <p>Note: No routine correspondence shall be addressed to the IEM (Phone / Post / E mail) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification / issued shall be posted in <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a>. Any other queries may be addressed directly to the tender issuing (Procurement) department as mentioned below:</p>                                                                            |  |
|     | Contact Details | <p>For all clarifications /issues related to the tender, please contact:</p> <ol style="list-style-type: none"> <li>1. Mr.R.Siva, Dy. Manager/SCT<br/>BHEL-PSSR<br/>690 Anna Salai, Nandanam, Chennai-35<br/>044-28286762/+91-9884184574<br/><a href="mailto:sivaramesh@bhel.in">sivaramesh@bhel.in</a></li> <li>2. Ms. Asha Alex, DGM/ SCT<br/>BHEL-PSSR<br/>690 Anna Salai, Nandanam, Chennai-35<br/>044-28286714/044-24330209</li> <li>3. Mr. Sandipan Biswas, AGM/ Purchase &amp; SCT<br/>BHEL-PSSR<br/>690 Anna Salai, Nandanam, Chennai-35<br/>044-28286757/044-24348943<br/><a href="mailto:bsandipan@bhel.in">bsandipan@bhel.in</a></li> </ol> |  |
| xii | 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 (<a href="http://www.bhel.com">www.bhel.com</a> → Tender Notifications), CPP Portal (<a href="https://eprocure.gov.in">https://eprocure.gov.in</a>) &amp; portal <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a>. <b>These will not be published in the newspapers.</b> Bidders to keep themselves updated with all such information. This also</p>                                                                  |  |

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|--|------------------------------------------------------------------------|--|
|  | form part of tender hence the same shall be enclosed with their offer. |  |
|--|------------------------------------------------------------------------|--|

- 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** Unless specifically stated otherwise, Bidder shall remit cost of tender through, Electronic Fund Transfer credited in BHEL account or Banker's cheque or Pay order or Demand draft, in favour of BHEL.
- 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 Office prior to tender opening.**
- 5.0 Procedure for Submission of Tenders:** This is an E-tender floated online through our E-Procurement portal <https://bhel.abcpocure.com>. The bidder should respond by submitting their offer online only in our e-Procurement portal at <https://bhel.abcpocure.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.**

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

## III. E-procurement service Provider:-

### **Address:**

e-Procurement Technologies Limited (abcProcure),  
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: +91-79-68136819/809/862/867/823/872/842**

**E-Mail: [Bhel.Support@abcProcure.com](mailto:Bhel.Support@abcProcure.com)**

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

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

## IV. Documents Comprising the e-Tender

The tender shall be submitted online – only except tender fee & 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):

## NOTICE INVITING TENDER

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- i). Tender Cost and Earnest Money Deposit (EMD) furnished in accordance with **NIT Clause 3.0 & 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 Form available 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 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>**

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

| Sl No | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Remarks                                                                                                                   |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
|       | <b>Techno-Commercial Bid CONTAINING THE FOLLOWING:-</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                           |
| i.    | Covering letter / Offer forwarding letter of Tenderer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Refer "Bidder Manual for BHEL Bidders" available at <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a> |
| ii.   | <p>Duly filled-in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p><b>Note:</b></p> <ol style="list-style-type: none"><li>1. In case of any deviation, the same should be submitted separately for technical &amp; commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be attached along with document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.</li><li>2. BHEL reserves the right to accept / reject the deviations without assigning any reasons, and BHEL decision is final and binding.<ol style="list-style-type: none"><li>(i) In case of acceptance of the deviations, appropriate loading shall be done by BHEL</li><li>(ii) In case of unacceptable deviations, BHEL reserves the right to reject the tender.</li></ol></li></ol> | Refer "Bidder Manual for BHEL Bidders" available at <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a> |
| iii.  | <p>Supporting documents / annexure / schedules / drawing etc as required in line with Pre-Qualification criteria. (Technical &amp; 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</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Refer "Bidder Manual for BHEL Bidders" available at <a href="https://bhel.abcprocure.com">https://bhel.abcprocure.com</a> |

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|       | organization, contact phone no, FAX no, E-mail ID, etc.                                                                                                                     |                                                                                                                         |
| iv.   | All Amendments / Correspondences / Corrigenda / Clarifications / Changes / Errata etc pertinent to this NIT.                                                                | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| v.    | Integrity Pact Agreement (Duly signed by the authorized signatory)                                                                                                          | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| vi.   | Duly filled-in annexures, formats etc as required under this Tender Specification / NIT                                                                                     | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| vii.  | Notice inviting Tender (NIT)                                                                                                                                                | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| viii. | Volume – I A : Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc |                                                                                                                         |
| ix.   | Volume – I B : Special Conditions of Contract (SCC)                                                                                                                         |                                                                                                                         |
| x.    | Volume – I C : General Conditions of Contract (GCC)                                                                                                                         |                                                                                                                         |
| xi.   | Volume – I D : Forms & Procedures                                                                                                                                           | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| 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 <a href="https://bhel.abcpocure.com">https://bhel.abcpocure.com</a> |
| xiii. | Any other details preferred by bidder with proper indexing.                                                                                                                 | Refer “Bidder Manual for BHEL Bidders” available at                                                                     |

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|                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                | <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a>                                                     |
| <b>Caution to Bidders: -</b><br>The duly signed & stamped copies of Volume – 1 Book 1 & Volume 1 Book 2 are to be attached as a part of your offer, in their respective sections. Also for any further queries, please refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a> |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                             |
|                                                                                                                                                                                                                                                                                                                                                    | <b>PRICE BID</b> consisting of the following shall be attached as mentioned below                                                                                                                                                                                                                                                                                              |                                                                                                                             |
| i                                                                                                                                                                                                                                                                                                                                                  | <b>Price/ Total Amount corresponding to the total works as specified in “Part C: Bill of Quantities” available in “Volume II – PRICE BID (latest Revision) shall be quoted in the Price Bid Form available in e-Procurement portal.</b><br><br><b>Bidders to note that documents uploaded under the Price Bid Form shall be considered for commercial evaluation of offer.</b> | Refer “Bidder Manual for BHEL Bidders” available at <a href="https://bhel.abcpurchase.com">https://bhel.abcpurchase.com</a> |

### **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:**
- Bidder’s capacity for executing the job under tender shall be assessed ‘LOAD’ wise and ‘PERFORMANCE’ wise as per the following:**
- I. LOAD:** Load takes into consideration ALL the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The cut off month for reckoning ‘Load’ shall be the

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third month preceding the month corresponding to the 'latest date of bid submission', in the following manner –

**(Note:** For example, if latest bid submission is in Jan 2017, then the 'load' shall be calculated up to and inclusive of Oct 2016)

Total number of Packages in hand = Load (P)

Where 'P' is the sum of all unit wise identified packages (refer table-1) under execution with BHEL Regions as of the cut off month defined above, including packages yet to be commenced, excepting packages which are on HOLD due to reasons not attributable to Bidder.

**II. PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (under execution/ executed during the 'Period of Assessment' in all Power Sector Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding and including the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the third month preceding the month corresponding to 'latest date of bid submission', in the following manner:

**(Note:** For example, if 'latest date of bid submission' is in Jan 2017, then the 'performance' shall be assessed for a 'six months' period up to and inclusive of Oct 2016 (i.e. from May 2016 to Oct 2016), for all the unit wise identified packages (refer Table I)

i). Calculation of Overall 'PerformanceRating' for 'Similar Package / Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment'

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package / packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:

- a)  $P_1, P_2, P_3, P_4, P_5, \dots, P_N$  etc. be the packages (under execution / executed during the 'Period of Assessment' in all Regions of BHEL) **SIMILAR** to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions =  $P_T$  (i.e.  $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$ )
- b) Number of Months ' $T_1$ ' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package  $P_1$ . Similarly  $T_2$  for package  $P_2$ ,  $T_3$  for package  $P_3$ , etc. for the tendered scope. Now

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calculate cumulative total months ' $T_T$ ' for total similar Packages ' $P_T$ ' for all Regions (i.e.  $T_T = T_1 + T_2 + T_3 + T_4 + \dots T_N$ )

- c) Sum ' $S_1$ ' of 'Monthly Performance Evaluation' Scores ( $S_{1-1}$ ,  $S_{1-2}$ ,  $S_{1-3}$ ,  $S_{1-4}$ ,  $S_{1-5}$ ....  $S_{1-T_1}$ ) for similar package  $P_1$ , for the 'period of assessment' ' $T_1$ ' (i.e.  $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots S_{1-T_1}$ ). Similarly,  $S_2$  for package  $P_2$  for period  $T_2$ ,  $S_3$  for package  $P_3$  for period  $T_3$  etc. for the tendered scope for all Regions. Now calculate cumulative sum ' $S_T$ ' of 'Monthly Performance Evaluation' Scores for total similar Packages ' $P_T$ ' for all Regions (i.e. ' $S_T = S_1 + S_2 + S_3 + S_4 + S_5 + \dots S_N$ ').

- d) **Overall Performance Rating ' $R_{BHEL}$ ' for the Similar Package / Packages** (under execution / executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL

Aggregate of Performance scores for all similar packages in all the Regions

=  $\frac{\text{Aggregate of months for each of the similar packages for which performance should have been evaluated in all the Regions.}}{\text{Aggregate of months for each of the similar packages for which performance should have been evaluated in all the Regions.}}$

$$= \frac{S_T}{T_T}$$

- e) **Bidders to note that the risk of non-evaluation or non-availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder.**

- f) **Table showing methodology for calculating 'a', 'b' and 'c' above**

| Sl no | Item Description                                                                           | Details for all Regions |       |       |       |       |        |       | Total                                                                                                |
|-------|--------------------------------------------------------------------------------------------|-------------------------|-------|-------|-------|-------|--------|-------|------------------------------------------------------------------------------------------------------|
| (i)   | (ii)                                                                                       | (iii)                   | (iv)  | (v)   | (vi)  | (vii) | (viii) | (ix)  | (x)                                                                                                  |
| 1     | Similar Packages for all Regions → (under execution/ executed during period of assessment) | $P_1$                   | $P_2$ | $P_3$ | $P_4$ | $P_5$ | ...    | $P_N$ | Total No of similar packages for all Regions = $P_T$<br>ie Sum ( $\Sigma$ ) of columns (iii) to (ix) |

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| Sl no | Item Description                                                                                                                                                                       | Details for all Regions                                                                                       |                                                                                                               |                                                                                                               |                                                                                                               |                                                                                                               |                            |                                                                                                               | Total                                                                   |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| (i)   | (ii)                                                                                                                                                                                   | (iii)                                                                                                         | (iv)                                                                                                          | (v)                                                                                                           | (vi)                                                                                                          | (vii)                                                                                                         | (viii)                     | (ix)                                                                                                          | (x)                                                                     |
| 2     | Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment for corresponding similar Package (as in row 1) | T <sub>1</sub>                                                                                                | T <sub>2</sub>                                                                                                | T <sub>3</sub>                                                                                                | T <sub>4</sub>                                                                                                | T <sub>5</sub>                                                                                                | ...                        | T <sub>N</sub>                                                                                                | Sum ( $\Sigma$ ) of columns (iii) to (ix)<br><br>= <b>T<sub>T</sub></b> |
| 3     | Monthly performance scores for the corresponding period (as in Row 2)                                                                                                                  | S <sub>1-1</sub> ,<br>S <sub>1-2</sub> ,<br>S <sub>1-3</sub> ,<br>S <sub>1-4</sub> , ...<br>S <sub>1-T1</sub> | S <sub>2-1</sub> ,<br>S <sub>2-2</sub> ,<br>S <sub>2-3</sub> ,<br>S <sub>2-4</sub> , ...<br>S <sub>2-T2</sub> | S <sub>3-1</sub> ,<br>S <sub>3-2</sub> ,<br>S <sub>3-3</sub> ,<br>S <sub>3-4</sub> , ...<br>S <sub>3-T3</sub> | S <sub>4-1</sub> ,<br>S <sub>4-2</sub> ,<br>S <sub>4-3</sub> ,<br>S <sub>4-4</sub> , ...<br>S <sub>4-T4</sub> | S <sub>5-1</sub> ,<br>S <sub>5-2</sub> ,<br>S <sub>5-3</sub> ,<br>S <sub>5-4</sub> , ...<br>S <sub>5-T5</sub> | ..<br>..<br>..<br>..<br>.. | S <sub>N-1</sub> ,<br>S <sub>N-2</sub> ,<br>S <sub>N-3</sub> ,<br>S <sub>N-4</sub> , ...<br>S <sub>N-TN</sub> | -----                                                                   |
| 4     | Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)                                                                              | S <sub>1</sub>                                                                                                | S <sub>2</sub>                                                                                                | S <sub>3</sub>                                                                                                | S <sub>4</sub>                                                                                                | S <sub>5</sub>                                                                                                | ...                        | S <sub>N</sub>                                                                                                | Sum ( $\Sigma$ ) of columns (iii) to (ix)<br><br>= <b>S<sub>T</sub></b> |

ii.) Calculation of Overall 'Performance Rating' ( $R_{BHEL}$ ) in case at least six evaluation scores for 'similar Package / Packages' for the tendered scope ARE NOT AVAILABLE during the 'Period of Assessment'.

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. ' $R_{BHEL}$ ' shall be calculated subject to availability of 'performance scores' for at least six 'package months' in the order of precedence below:

- a) 'Period of Assessment' i.e. six months preceding and including the cut-off month
- b) 12 months preceding and including the cut-off month
- c) 24 months preceding and including the cut-off month
- d) 36 months preceding and including the cut-off month

In case, ' $R_{BHEL}$ ' cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this

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bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'.

- iii) Factor "L" assigned based on Overall Performance Rating ( $R_{BHEL}$ ) at Power Sector Regions,:

| Sl. No. | Overall Performance Rating ( $R_{BHEL}$ ) | Corresponding value of 'L' |
|---------|-------------------------------------------|----------------------------|
| 1       | $\leq 60$                                 | NA                         |
| 2       | $> 60$ and $\leq 65$                      | 0.4                        |
| 3       | $> 65$ and $\leq 70$                      | 0.35                       |
| 4       | $> 70$ and $\leq 75$                      | 0.25                       |
| 5       | $> 75$ and $< 80$                         | 0.2                        |
| 6       | $\geq 80$                                 | NA                         |

### **III. Assessment of Capacity of Bidder':**

'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages  $P_{Max} = (R_{BHEL} - 60)$  divided by corresponding value of 'L' i.e.  $(R_{BHEL} - 60)/L$

#### **Note:**

- In case the value of  $P_{Max}$  results in a fraction, the value of  $P_{Max}$  is to be rounded off to next whole number
- For  $R_{BHEL} = 60$ ,  $P_{Max} = '1'$
- For  $R_{BHEL} \geq 80$ , there will be no upper limit on  $P_{Max}$

The Bidder shall be considered 'Qualified' as per 'Assessment of Capacity of Bidder' for the subject Tender if  $P \leq P_{Max}$

(Where P is calculated as per clause 'I' above.)

### **IV. Explanatory note:**

- Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or C&I etc. at the individual level irrespective of rating of Plant and irrespective of whether the subject tender is a single package or as part of combined / composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, C&I, Civil, Structure etc. is considered individual level of package. For example, in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e. the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl.no. II above, needs to

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be evaluated considering all the identified packages (i.e. Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above.

ii). Identified Packages (Unit wise)

**Table-1**

| Civil                                        | Electrical & CI          | Mechanical                                                    |
|----------------------------------------------|--------------------------|---------------------------------------------------------------|
| i). Enabling works                           | i).Electrical            | i).Boiler & Aux (All types including CW Piping if applicable) |
| ii). Pile and Pile Caps                      | ii). CI                  | ii).Power Cycle Piping / Critical Piping                      |
| iii). Civil Works including foundations      | iii). Others (Elec & CI) | iii).ESP                                                      |
| iv). Structural Steel Fabrication & Erection |                          | iv). LP Piping                                                |
| v). Chimney                                  |                          | v).Steam Turbine Generator set & Aux                          |
| vi). Cooling Tower                           |                          | vi). Gas Turbine Generator set & Aux                          |
| vii). Others (Civil)                         |                          | vii).Hydro Turbine Generator set & Aux                        |
|                                              |                          | viii).Turbo Blower (including Steam Turbine)                  |
|                                              |                          | ix).Material Management                                       |
|                                              |                          | x). Others (Mechanical)                                       |

- iii). Bidders who have not been evaluated for at least six package months in the last 36 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions, shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions

A 'NEW VENDOR' if awarded a job (of package / packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI from BHEL.

The "FIRST TIMER" tag shall remain till completion of all the contracts against which vendor has been tagged as First Timer or availability of 6 evaluation scores within last 36 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions.

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A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Assessment of Capacity of Bidders'.

- iv). Consequent upon applying the criteria of 'Assessment of Capacity of Bidders' detailed above on all the bidders qualified against Technical and Financial Qualification criteria, if the number of qualified bidders reduces to less than four, then for further processing of the Tender, BHEL at its discretion reserves the right to also consider the bidders who are "not qualified" as per criteria of 'Assessment of Capacity of Bidders' and for this, procedure described in following three options shall be followed:
- a) All the bidders having Overall Performance Rating ( $R_{BHEL}$ )  $\geq 60$  shall be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
  - b) If even after using option "a", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a", "First timer" bidders having average of available performance scores  $\geq 60$  upto and including the Cut Off month shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
  - c) If even after using option "a" and "b", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a" and "b", "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.

**Note:-** In case, the number of bidders qualified against Technical and Financial Qualification criteria itself is less than four, then all bidders (a)- having Overall Performance Rating ( $R_{BHEL}$ )  $\geq 60$ , (b)- First timer" bidders having average of available performance scores  $\geq 60$  upto and including the Cut Off month, (c)- "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall be considered qualified against criteria of 'Assessment of Capacity of Bidders' for further processing of tender.

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- v). 'Under execution' shall mean works in progress as per the following:
  - a. Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
  - b. Up to Steam Blowing in case of Boiler/ESP/Piping Packages
  - c. Up to Synchronization in all Balance Packages

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

- vi). Contractor shall provide the latest contact details i.e. mail-ID and Correspondence Address to SCT Department, so that same can be entered in the Contractor Performance Evaluation System, and in case of any change/discrepancy same shall be informed immediately. Login Details for viewing scores in Contractor Performance Evaluation System shall be provided to the Contractor by SCT Department.
- vii). Performance Evaluation for Activity Month shall be completed in Evaluation Month (i.e. month next to Activity Month) or in rare cases in Post Evaluation Month (i.e. month next to Evaluation Month) after approval from Competent Authority. In case scores are not acceptable, Contractor can submit Review Request to GM Site / GM Project latest by 25<sup>th</sup> of Evaluation Month or 3 days after approval of score, whichever is later. However, acceptance / rejection of 'Review Request' solely depends on the discretion of GM Site / GM Project. After acceptance of Review Request, evaluation score shall be reviewed at site and the score after completion of review process shall be acceptable and binding on the contractor.

### **viii. Project on Hold due to reasons not attributable to bidder -**

- a. **Short hold:** Evaluation shall not be applicable for this period; however, loading will be considered.
- b. **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation as well as Loading shall not be considered for this period.

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- 10.0** Performance evaluation in Clause 9 above is applicable to Prime bidder and consortium partner (or Technical tie up partner) for their respective scope of work.
- 11.0** Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.
- 12.0** For any clarification on the tender document, the bidder may seek the same in clarification provision available in procurement portal <https://bhel.abcpocure.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** BHEL may decide holding pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.
- 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** Bidders shall submit Integrity Pact Agreement, (Duly signed by authorized signatory who signs in the offer), along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. **The Integrity pact is to be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder. The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.**

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- 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** In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorized representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful / Disqualified bidders under intimation to the respective bidders.
- 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](http://www.bhel.com) ) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

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

The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. **The envelope sealed price bid of successful 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

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by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on [www.bhel.com](http://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](http://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](http://www.bhel.com) → **Supplier 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** 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.
- 30.0** 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.
- 31.0** Integrity commitment, performance of the contract and punitive action thereof:
  - 31.1** Commitment by BHEL:

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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.

**31.2 Commitment by Bidder / Supplier / Contractor:**

**31.2.1** 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.

**31.2.2** 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.

**31.2.3** 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 formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder / supplier / contractor as per extant guidelines of the company available on [www.bhel.com](http://www.bhel.com) and / or under applicable legal provisions.

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

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

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## **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

Additional General Manager / SCT & Purchase

## **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 Tender Schedule.
6. Annexure-6 Declaration for Reverse auction.
7. Other documents as per this NIT.

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

| <b>JOB</b>        | Murrum Blanketing works at 2X660MW Ennore SEZ STPP (on the ash dyke of NCTPS)                                                                                                                                                                                        |                                                                |                                                                                             |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <b>Tender No.</b> | <b>BHEL: PSSR: SCT: 1827</b>                                                                                                                                                                                                                                         |                                                                |                                                                                             |
| <b>Sl. No.</b>    | <b>PRE QUALIFICATION CRITERIA</b>                                                                                                                                                                                                                                    | <b>Bidders claim in respect of fulfilling the PQR Criteria</b> |                                                                                             |
|                   |                                                                                                                                                                                                                                                                      | <b>Name and Description of qualifying criteria</b>             | <b>Page no of supporting document. Bidder must fill up this column as per applicability</b> |
| <b>A</b>          | <b>Submission of Integrity Pact duly signed (if applicable)</b><br>( <b>Note:</b> To be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)                             | Applicable                                                     |                                                                                             |
| <b>B</b>          | <b><u>Technical</u></b>                                                                                                                                                                                                                                              |                                                                |                                                                                             |
|                   | <b>Refer Annexure 3</b>                                                                                                                                                                                                                                              | Applicable                                                     | To be filled in Annexure-4                                                                  |
| <b>C</b><br>C-1   | <b><u>FINANCIAL</u></b><br><b>Turnover</b><br>Bidders must have achieved an average annual financial turnover (Audited) of Rs.2,95,00,000/- (Rs. Two Crores Ninety Five Lakhs only) or more over last three Financial Years (FY) i.e., 2015-16, 2016-17 and 2017-18. | Applicable                                                     | To be filled in Annexure-4                                                                  |
| C-2               | <b>Net worth</b> (only in case of Companies)<br>Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive                                                                                                         | Applicable                                                     | To be filled in Annexure-4                                                                  |

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                 |                |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------|
| C-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Profit</b><br>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.                                            | Applicable     | To be filled in Annexure-4 |
| C-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect. | 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)                                                                                                                     | Applicable     | By BHEL                    |
| E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Approval of Customer (if applicable)</b><br><b>Note:</b> Names of bidders who stand qualified after compliance of criteria A to D shall be forwarded to customer for their approval.                         | Applicable     |                            |
| F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Price Bid Opening</b><br><b>Note:</b> Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E                                                               | Applicable     | BY BHEL                    |
| G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Consortium criteria (if applicable)</b>                                                                                                                                                                      | Not Applicable |                            |
| <b><u>Explanatory Notes for the PQR (unless otherwise specified in the PQR):</u></b> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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 (* Share capital OR Partnership Capital OR Proprietor Capital as the case may be) (Net worth is required to be evaluated in case of companies).</li> </ol> |                                                                                                                                                                                                                 |                |                            |

## NOTICE INVITING TENDER

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ol style="list-style-type: none"><li>5. C-3:- PROFIT : shall be PBT earned during any one year of the three financial years as in C-1 above</li><li>6. For Evaluation of PQR, the credential of the Bidder alone, and not that of the Group Company shall be considered.</li><li>7. Completion date for achievement of the technical criteria specified in the Common QR should be in the last 7 years ending on the 'latest date of Bid Submission' of Tender irrespective of date of the start of work.</li><li>8. Boiler means HRSG or WHRB or any other types of Steam Generator</li><li>9. Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass, LP Bypass lines</li><li>10. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating in terms of MW shall be considered for evaluation.</li><li>11. In case the experience/PO/VO certificate enclosed by bidders do not have separate break up prices for the E&amp;C portion of Electrical and CI Works, (i.e. the certificates enclosed are for composite order for supply and erection of Electrical &amp; CI and other works if any), then value of Erection and Commissioning for the Electrical &amp; CI portion shall be considered as 15% of the supply &amp; erection of Electrical &amp; CI.</li><li>12. Scope for capital overhaul of STG shall cover Bearing Inspection work and overhauling of all cylinders of the Turbine.</li><li>13. In case the tendered scope is not a Pulverized Fuel Bidder, experience of Oil/Gas Fired Boilers can be considered unless otherwise specifically indicated in the PQR.</li></ol> |
|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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 WORK COMPLETION CERTIFICATE 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](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 of the Tenderer                                                                                                                                                                                                               |                                                                                                        |                         |
|    | Address of the Tenderer                                                                                                                                                                                                            |                                                                                                        |                         |
| 2  | Details about type of the Firm / Company                                                                                                                                                                                           |                                                                                                        |                         |
| 3a | Details of Contact person for this Tender:<br>Name : Mr. / Ms.<br>Designation:<br>Telephone No/ Mobile No:<br>E-mail ID:                                                                                                           |                                                                                                        |                         |
| 3b | Details of alternate Contact person for this Tender:<br>Name: Mr. / Ms.<br>Designation:<br>Telephone No/ Mobile No:<br>E-mail ID:                                                                                                  |                                                                                                        |                         |
| 4  | EMD DETAILS<br><i>(Remittance of EMD should be in line with Mode of Deposit as detailed in Vol 1A, Part-2, Chapter-1)</i><br>a. Cash portion of EMD – online payment/ DD/ Cheque (Minimum Rs 2 Lakhs)<br>b. Balance portion of EMD | a. Mode of Remittance:<br>Ref No:<br>Date :<br>Amount:<br>b. Mode of Remittance:<br>Ref No :<br>Date : |                         |
| 5  | Validity of Offer                                                                                                                                                                                                                  | To be valid for six months from due date                                                               |                         |
|    |                                                                                                                                                                                                                                    | <b>Applicability<br/>(By BHEL)</b>                                                                     | <b>Bidder<br/>Reply</b> |
| 6  | Whether the format for compliance with <b>PRE QUALIFICATION CRITERIA (ANNEXURE-I &amp; ANNEXURE-IV)</b> 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                 |

## NOTICE INVITING TENDER

|    |                                                                                                                                           |                |         |
|----|-------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| 9  | Whether all pages of the Offer Documents are signed by the person authorized to sign this offer                                           | Applicable     | Yes/ No |
| 10 | Whether all pages of the Tender documents including annexures, appendices etc are read understood and signed                              | Applicable     | Yes/ No |
| 11 | Submission of Integrity Pact                                                                                                              | Applicable     | Yes/ No |
| 12 | Submission of Declaration by Authorized Signatory                                                                                         | Applicable     | Yes/ No |
| 13 | Submission of No Deviation Certificate                                                                                                    | Applicable     | Yes/ No |
| 14 | Submission of Declaration confirming knowledge about Site Conditions                                                                      | Applicable     | Yes/ No |
| 15 | Submission of Declaration for relation in BHEL                                                                                            | Applicable     | Yes/ No |
| 16 | Submission of Non-Disclosure Certificate                                                                                                  | Applicable     | Yes/ No |
| 17 | Submission of Copy Bank Account Details for E-Payment                                                                                     | Applicable     | Yes/ No |
| 18 | Submission of Capacity Evaluation of Bidder for current Tender                                                                            | Applicable     | Yes/ No |
| 19 | Submission of Tie Ups / Consortium Agreement are submitted as per format Form F22 of Book-II Vol-1D                                       | Not Applicable |         |
| 20 | Submission of Power of Attorney for Submission of Tender / Signing Contract Agreement                                                     | Applicable     | Yes/ No |
| 21 | Submission of Analysis of Unit rates                                                                                                      | Applicable     | Yes/ No |
| 22 | Submission of Unquoted Price Bid                                                                                                          | Applicable     | Yes/ No |
| 23 | Tabular column showing Category- wise, month wise, man power deployment sub package wise planned for the execution of the scope of works. | Applicable     | Yes/ No |
| 24 | Declaration by bidder for price opening through Reverse Auction (Refer Annexure-6 of Notice Inviting Tender)                              | Applicable     | Yes/ No |
| 25 | Copy of Organization Chart                                                                                                                | Applicable     | Yes/ No |
| 26 | Copy of Registration / Incorporation certificate, Partnership Deed (Certified by Notary Public) as applicable for firm.                   | Applicable     | Yes/ No |
| 27 | Undertaking as per Financial C 4 Criteria of Annexure 1 of NIT regarding Bankruptcy Code Proceedings (IBC)                                | Applicable     | Yes/ No |

**NOTE:**

1. STRIKE OFF 'YES' OR 'NO', AS APPLICABLE.
2. TENDER NOT ACCOMPANIED 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

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## Annexure-3

### **B Technical Pre-Qualification Criteria**

B.1 Bidder should have executed "Similar works" for any one of the following in the last seven years reckoned from the latest due date of bid submission.

B.1.1 One (1) work of value not less than **Rs. 7.90 Crores**

(OR)

B.1.2 Two (2) works each of value not less than **Rs. 4.95 Crores**

(OR)

B.1.3 Three (3) works each of value not less than **Rs.3.95 Crores**

(AND)

B.2 Bidder should have executed the following in the last seven years preceding latest due date of bid submission.

Executed At least 54,000 CUM of earthwork in filling/ Murrum blanketing/ Sand Filling within a common period of twelve consecutive months in cumulative of two running/ completed contracts.

(OR)

Executed At least 36,000 CUM of earthwork in filling/ Murrum blanketing/ Sand Filling within twelve consecutive months in one running/ completed contract.

Note: -

- I. 'Similar Works' in the above QR (B.1) means Piling or Civil or Structure or 'Civil and Structural works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these.
- II. The term 'Executed' in the above QR (B.1 & B.2) means; the bidder should have achieved the criteria specified in QR even if the contract has not been completed or closed.
- III. Value of work in the above QR (B.1) is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission. as per following formula-

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

## NOTICE INVITING TENDER

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Where

P = Updated value of work

R = Value of executed work

$X_N$  = All India Avg. Consumer Price index for industrial workers for the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 shall be considered).

$X_0$  = All India Avg. Consumer Price index for industrial workers for last month of work execution

$Y_N$  = Monthly Whole Sale Price Index for All Commodities for the month, three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 03-Apr-17, then bid submission month shall be reckoned as April'17 and index for Jan'17 shall be considered).

$Y_0$  = Monthly Whole Sale Price Index for All Commodities for last month of work execution

- IV. No consortium bid is allowed for this Tender. However, for the purpose of qualification, after successful execution of one work with a consortium partner under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.

## 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<br>(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       | <b><u>Technical B:</u></b> | B.1 Bidder should have executed "Similar works" for any one of the following in the last seven years reckoned from the latest due date of bid submission.<br><br>B.1.1 One (1) work of value not less than <b><u>Rs. 7.90 Crores</u></b><br>(OR)<br>B.1.2 Two (2) works each of value not less than <b><u>Rs. 4.95 Crores</u></b><br>(OR) |                       |                                                               |                                                                                                 |                                                                |         |

## NOTICE INVITING TENDER

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |  |  |  |  |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
|  |  | <p>B.1.3 Three (3) works each of value not less than <b><u>Rs.3.95 Crores</u></b></p> <p style="text-align: center;">(AND)</p> <p>B.2 Bidder should have executed the following in the last seven years preceding latest due date of bid submission.</p> <p>Executed At least 54,000 CUM of earthwork in filling/ Murrum blanketing/ Sand Filling within a common period of twelve consecutive months in cumulative of two running/ completed contracts.</p> <p style="text-align: center;">(OR)</p> <p>Executed At least 36,000 CUM of earthwork in filling/ Murrum blanketing/ Sand Filling within twelve consecutive months in one running/ completed contract</p> |  |  |  |  |  |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|

## NOTICE INVITING TENDER

|   |                          |                                                                                                                                                                                                                                                       |  |  |  |  |  |
|---|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 2 | <b>Financial<br/>C1</b>  | <b>TURNOVER</b><br>Bidders must have achieved an average annual financial turnover (Audited) of <b><u>Rs.2,95,00,000/- (Rs. Two Crores Ninety-Five Lakhs only)</u></b> or more over last three Financial Years (FY) i.e. 2015-16, 2016-17 and 2017-18 |  |  |  |  |  |
| 3 | <b>Financial<br/>C2</b>  | <b>NETWORTH</b> (only in case of Companies)<br>Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive                                                                                           |  |  |  |  |  |
| 4 | <b>Financial<br/>C3</b>  | <b>PROFIT</b><br>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.                                                                                 |  |  |  |  |  |
| 5 | <b>Financial<br/>C 4</b> | Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.                                       |  |  |  |  |  |

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

# NOTICE INVITING TENDER

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## ANNEXURE-5

### Tender Schedule

| Description                                                                              | Schedule                                   | Remarks                                                                                                                                                                    |
|------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technical Bid Opening                                                                    | As mentioned in Notice Inviting Tender.    |                                                                                                                                                                            |
| Communication from BHEL for Clarifications, if any, required by BHEL                     | Within Three days from tender opening date |                                                                                                                                                                            |
| Last date for Bidders to submit the clarifications / documents required                  | Within Six days from tender opening date   | Bidders to note that their competent representative to be readily available in this week for offering clarifications / submitting the further documents, if any, required. |
| If Reverse Auction is applicable, then the tentative date for conducting Reverse Auction | Within Ten days from tender opening date   |                                                                                                                                                                            |

**Note:**

1. Bidders to note that the above schedule should be adhered to and no further extension will be given. To adhere to the schedule indicated below, Bidders should ensure the adequacy of the documents submitted in their offer, with proper validation.

# NOTICE INVITING TENDER

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## Annexure 6

### **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

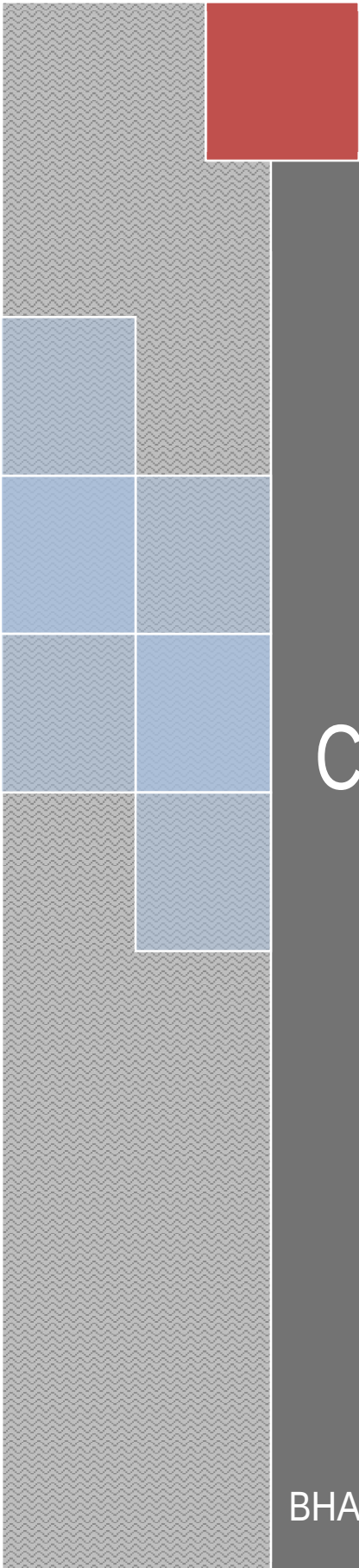
We have studied and understood the clauses of Reverse auction published in the tender specification.

#### **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)



# 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 |
|----------------|-----------------------------------------------------------------------|--------------|--------------|
| <b>Vol I A</b> | <b>Part-I: Contract specific details</b>                              |              |              |
| 1              | Project Information                                                   | Chapter-I    | 02           |
| 2              | Scope of works                                                        | Chapter-II   | 01           |
| 3              | Facilities in the scope of Contractor / BHEL (Scope Matrix)           | Chapter-III  | 07           |
| 4              | T&Ps and MMEs to be Deployed by Contractor                            | Chapter-IV   | 03           |
| 5              | T&Ps to be deployed by BHEL                                           | Chapter-V    | 01           |
| 6              | Time Schedule                                                         | Chapter-VI   | 02           |
| 7              | Terms of Payment                                                      | Chapter-VII  | 02           |
| 8              | Taxes and other Duties                                                | Chapter-VIII | 02           |
| 9              | Bill of Quantity                                                      | Chapter-IX   | 01           |
| 10             | General                                                               | Chapter-X    | 09           |
| 11             | Progress of Work                                                      | Chapter-XI   | 02           |
| 12             | Material Handling                                                     | Chapter-XII  | 01           |
| <b>Vol IA</b>  | <b>Part-II: Technical specifications</b>                              |              |              |
| 1              | Corrections/ Revisions in SCC/ GCC of contract and Forms & Procedures | CHAPTER 1    | 15           |
| 2              | HSE PLAN FOR SITE OPERATIONS BY SUBCONTRACTOR                         | CHAPTER 2    | 72           |
| 3              | FORM 15 Rev 02                                                        | CHAPTER 3    | 06           |
| 4              | FORM 14 Rev 01                                                        | CHAPTER 4    | 06           |
| 5              | T&P HIRE CHARGES                                                      | CHAPTER 5    | 13           |
| 6              | PROFORMA FOR BANK GUARANTEE                                           | CHAPTER 6    | 03           |
| 7              | INTEGRITY PACT FORMAT                                                 | CHAPTER 7    | 05           |
| 8              | PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS                     | CHAPTER 8    | 11           |
| 9              | DRAWINGS                                                              | CHAPTER 9    | 01           |
|                |                                                                       |              |              |

## **VOLUME - IA PART – I CHAPTER – I**

### **1.1 PROJECT INFORMATION**

#### **INTRODUCTION**

ENNORE SEZ SUPERCRITICAL TPS UNITS- 1 & 2 [2 x 660 MW] is being set up by **TAMILNADU GENERATION AND DISTRIBUTION CORPORATION** at a site in Vayalur Village Near Ennore Port, Tamilnadu, India. Plant will be set up in existing Ash Dyke of NCTPS by reclamation of some portion of the Ash Dyke. The Bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on BHEL/Owner. All relevant site data /information as may be necessary shall have to be obtained /collected by the Bidder.

#### **APPROACH TO SITE**

The proposed plant will be located at Ash dyke of North Chennai Thermal Power, approximately 35 km from Chennai, in the state of Tamilnadu, India. The site is occupying a coastal site near the village of Vayalur. The nearest commercial airport is at Chennai located at a distance of 60 kms from the project site.

Nearest Airport – Chennai

Nearest Airstrip – Chennai

Nearest Seaport – Ennore

#### **A. Project Information & Location**

**Project Title:** Ennore SEZ project of 2 x 660 MW Coal Based Super Critical Thermal Power Project at ash dyke of NCTPS

**Plant Capacity:** 1320 MW (2 units of 660 MW each)

**Type of Project:** Green field

**Owner:** Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

---

**Plant site location:** Ash dyke of North Chennai Thermal Power Station (NCTPS)

**Location co-ordinates:** 80o 18' E to 80o 19' E Longitude

13o 17' N to 13o 18' N Latitude

**Nearest Village:** Vayalur

**Nearest Town & City:** Chennai (35 Km)

**State Capital:** Chennai (35 Km)

**Nearest Railway Station:** Athipattu Pudunagar (~5 Km)

**Nearest Airport:** Chennai (~60 Km)

**Nearest Seaport:** Ennore (~5 Km)

**Nearest Road access:** All weather road from Pattamandri on the Thiruvottiyur – Ponneri district highway.

### **B Meteorological Condition**

**Owner:** Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)

**Owner Consultant:** DESEIN, DELHI,

**Site Elevation:** (+) 10.0 m above Mean Sea Level

**Ambient Temperature:** a. Maximum 32.0 Deg.C

b. Minimum 24 Deg.C

c. Design ambient temperature 35 Deg.C

**Relative Humidity:** a. Maximum 100%

b. Minimum 36%

c. Design 75%

**Annual Rainfall:** a. Maximum 2540 mm

b. Average 1600 mm

c. Minimum 1175 mm

**Wind Data:** a. Basic wind speed at 10m height : 50 m/sec

b. Wind pressure As per IS: 875 Part III-1984

**Seismic Zone :** Zone III as per IS: 1893-2002

**Design ambient temperature:** 50 Deg.C (For electrical Equipments)

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Tender Specification No.: BHEL: PSSR: SCT: 1827

## **VOLUME-IA PART-I CHAPTER – II**

### **1.2 SCOPE OF WORKS**

- 1.2.1 The Scope of work covers Murrum Blanketing including supply of Murrum at site, grading of sub-base, laying, compaction etc, inside the plant area of 2 x 660 MW Ennore SEZ STPP Unit-1 & 2.
- 1.2.2 The work includes supply of all materials, labour, tools and plants.
- 1.2.3 The works to be performed under this contract consist of providing all labour, supervision, material, scaffolding, construction equipment's, tools and plants, temporary works, supplies including POL, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials, earthwork other allied works are included in the rates of items of work.
- 1.2.4 The area of work shall be cleared of all vegetation, rubbish and other objectionable Matter and materials removed shall be burnt or otherwise disposed of as directed by The Engineer-in-Charge. No separate payment for these operations shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.
- 1.2.5 All the works areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts.
- 1.2.6 The unit rates shall include all material equipment, fixtures, labour construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.
- 1.2.7 The unit rates for various items of B.O.Q shall include all the stipulations Mentioned in technical specifications and nothing extra over B.O.Q rates shall be payable.
- 1.2.8 Drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner.
- 1.2.9 The bidder should fully apprise himself of the prevailing conditions at the proposed site, climatic conditions including monsoon pattern, local conditions, soil strata and site specific parameters and shall include for all such conditions and contingent measures in the bid, including those which may have not been specifically brought out in the specifications.

**FOR FURTHER DETAILED SCOPE OF WORKS REFER RELEVANT CHAPTERS IN THIS BOOK – TECHNICAL SPECIFICATION.**

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# TECHNICAL CONDITIONS OF CONTRACT (TCC)

## VOLUME IA PART – I CHAPTER – III

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

| Sl.No      | Description                                                                                                    | Scope / to be taken care by |        | Remarks                                                    |
|------------|----------------------------------------------------------------------------------------------------------------|-----------------------------|--------|------------------------------------------------------------|
|            |                                                                                                                | BHEL                        | Bidder |                                                            |
| 1.3.1      | <b>ESTABLISHMENT</b>                                                                                           |                             |        |                                                            |
| 1.3.1.1    | <b>FOR CONSTRUCTION PURPOSE:</b>                                                                               |                             |        |                                                            |
| 1.3.1.1.1  | Open space for office                                                                                          | Yes                         |        | As provided by TANGEDCO                                    |
| 1.3.1.1.2  | Open space for storage                                                                                         | Yes                         |        |                                                            |
| 1.3.1.1.3  | Construction of bidder's office, canteen and storage building including supply of materials and other services |                             | Yes    |                                                            |
| 1.3.1.1.4  | Bidder's all office equipments, office / store / canteen consumables                                           |                             | Yes    |                                                            |
| 1.3.1.1.5  | Canteen facilities for the bidder's staff, supervisors and engineers etc                                       |                             | Yes    |                                                            |
| 1.3.1.1.6  | Firefighting equipments like buckets, extinguishers etc                                                        |                             | Yes    |                                                            |
| 1.3.1.1.7  | Fencing of storage area, office, canteen etc of the bidder                                                     |                             | Yes    |                                                            |
| 1.3.1.2    | <b>FOR LIVING PURPOSES OF THE BIDDER</b>                                                                       |                             |        |                                                            |
| 1.3.1.2.1  | Open space                                                                                                     |                             | Yes    |                                                            |
| 1.3.1.2.2  | Living accommodation                                                                                           |                             | Yes    |                                                            |
| 1.3.1.3    | <b>ELECTRICITY</b>                                                                                             |                             |        |                                                            |
| 1.3.1.3.1  | Electricity For construction purposes (to be specified whether chargeable or free)                             | Yes                         |        | <b>Chargeable basis as per Prevailing rate of TANGEDCO</b> |
| 1.3.1.3.1a | Single point source                                                                                            | Yes                         |        |                                                            |
| 1.3.1.3.1b | Further distribution for the work to be done which include supply of materials and execution                   |                             | Yes    |                                                            |
| 1.3.1.3.2  | Electricity for the office, stores, canteen etc of the bidder which include:                                   |                             | Yes    |                                                            |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

| Sl.No      | Description                                                                                                                                                           | Scope / to be taken care by |        | Remarks                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|--------|-----------------------------------------------|
|            |                                                                                                                                                                       | BHEL                        | Bidder |                                               |
| 1.3.1.3.2a | Distribution from single point including supply of materials and service                                                                                              |                             | Yes    |                                               |
| 1.3.1.3.2b | Supply, installation and connection of material of energy meter including operation and maintenance                                                                   |                             | Yes    |                                               |
| 1.3.1.3.2c | Duties and deposits including statutory clearances for the above if applicable                                                                                        |                             | Yes    |                                               |
| 1.3.1.3.3  | Living facilities for office use including charges                                                                                                                    |                             | Yes    |                                               |
| 1.3.1.3.4  | Electricity for living accommodation of the bidder's staff, engineers, supervisors etc. in the above lines                                                            |                             | Yes    |                                               |
| 1.3.1.3.5  | Demobilization of the facilities after completion of works                                                                                                            |                             | Yes    |                                               |
| 1.3.1.4    | <b>WATER SUPPLY</b>                                                                                                                                                   |                             |        |                                               |
| 1.3.1.4.1  | <b>For construction purposes</b>                                                                                                                                      | Yes                         |        | Chargeable as per prevailing rate of TANGEDCO |
| 1.3.1.6.1a | Making the water available at single point                                                                                                                            | Yes                         |        |                                               |
| 1.3.1.6.1b | Further distribution as per the requirement of work including supply of materials and execution                                                                       |                             | Yes    |                                               |
| 1.3.1.4.2  | Water supply for bidder's office, stores, canteen etc                                                                                                                 |                             |        |                                               |
| 1.3.1.5    | <b>LIGHTING</b>                                                                                                                                                       |                             |        |                                               |
| 1.3.1.5.1  | For construction work (supply of all the necessary materials)<br>a) At office / storage area<br>b) At the preassembly area<br>c) At the construction site / area      |                             | Yes    |                                               |
| 1.3.1.5.2  | For construction work (execution of the lighting work / arrangements)<br>a) At office/storage area<br>b) At the preassembly area<br>c) At the construction site /area |                             | Yes    |                                               |
| 1.3.1.6    | <b>COMMUNICATION FACILITIES for site operations of the bidder</b>                                                                                                     |                             |        |                                               |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

| Sl.No     | Description                                   | Scope / to be taken care by |        | Remarks |
|-----------|-----------------------------------------------|-----------------------------|--------|---------|
|           |                                               | BHEL                        | Bidder |         |
| 1.3.1.5.1 | Telephone, Fax, internet, intranet, email etc |                             | Yes    |         |

| Sl.No            | Description                                                                                                                                                    | Scope to be taken care by |        | Remarks                              |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------|--------------------------------------|
|                  |                                                                                                                                                                | BHEL                      | Bidder |                                      |
| <b>1.3.2</b>     | <b>CONSTRUCTION FACILITIES</b>                                                                                                                                 |                           |        |                                      |
| <b>1.3.2.1.0</b> | <b>Engineering works for construction</b>                                                                                                                      |                           |        |                                      |
| 1.3.2.1.1        | Providing the construction drawings for all the equipment's covered under this scope                                                                           | Yes                       |        |                                      |
| 1.3.2.1.2        | Drawings for construction methods                                                                                                                              |                           | Yes    | In consultation with BHEL            |
| 1.3.2.1.3        | As-built drawings – wherever deviations observed and executed and also based on the decisions taken at site- example – routing of small bore pipes             | Yes                       | Yes    | "                                    |
| 1.3.2.1.4        | Shipping lists etc. for reference and planning the activities                                                                                                  | Yes                       | Yes    | "                                    |
| 1.3.2.1.5        | Preparation of site construction schedules and other input requirements                                                                                        |                           | Yes    | In consultation with BHEL            |
| 1.3.2.1.6        | Review of performance and revision of site construction schedules in order to achieve the end dates and other commitments                                      |                           | Yes    |                                      |
| 1.3.2.1.7        | Weekly construction schedules based on SI No 1.3.2.1.5                                                                                                         |                           | Yes    |                                      |
| 1.3.2.1.8        | Daily construction / work plan based on SI No 1.3. 2.1.7                                                                                                       |                           | Yes    | For daily monitoring meeting at site |
| 1.3.2.1.9        | Periodic visit of the senior official of the bidder to site to review the progress so that works are completed as per schedule. It is suggested this review by |                           | Yes    |                                      |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

| Sl.No | Description                                                                | Scope to be taken care by |        | Remarks |
|-------|----------------------------------------------------------------------------|---------------------------|--------|---------|
|       |                                                                            | BHEL                      | Bidder |         |
|       | <b>PART II</b>                                                             |                           |        |         |
|       | the senior official of the bidder should be done once in every two months. |                           |        |         |

### 1.3.3 OPEN SPACE:

- 1.3.3.1 Availability of land within plant boundary is very limited and the contractor has to plan and use the existing land considering the use of land by other Civil /mechanical/ electrical contractors and the storage of plant machineries and materials. The existing land shall be shared by all erections agencies. Land will be allocated with certain time frame and to the extent available/ considered necessary, and will be reviewed by BHEL depending upon the area availability. Area within plant premises for batching plant, fabrication yard, office, storage area etc. for construction purpose shall be provided as per availability free of cost. The contractor will be responsible for handing back all lands, as handed over to him by BHEL/ TANGEDCO.
- 1.3.3.2 Contractor has to make his own arrangements for labour colony. The contractor to construct labour colony/ hutment as per his requirements after obtaining approval of formalities from statutory body. The contractor shall provide adequate water arrangement for drinking/washing/bathing with required toilets, drainage system, lighting facilities etc. in labour colony. Suitable paved area to be provided in the labour colony.

### 1.3.4 ELECTRICITY:

- 1.3.4.1 Construction power will be provided to the contractor on prevailing rates of TANGEDCO on chargeable basis at one single point WITHIN THE PLANT AREA by BHEL. The contractor to Provide necessary energy meter for measuring the power consumption. Any dispute, BHEL engineer's decision shall be final and binding on contractor. The contractor shall make his own arrangement for further distribution with necessary isolator/LCB etc.
- 1.3.4.2 Construction power prevailing charges are as below,  
The present LT tariff VI rate of TANGEDCO is
- Consumption charges at Rs.12.00 per unit
  - Maximum demand (MD) charges as applicable per month
  - Low Power Factor (LPF) charges
  - Electricity Tax on total amount

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- e) Any other miscellaneous charges charged by M/s TANGEDCO pertaining to construction power supply.

Note - The TANGEDCO tariff and tax may vary from time to time and the same is applicable for the bidder.

- 1.3.4.3 Necessary "Capacitor Banks" to improve the Power factor to a minimum of 0.9 shall be provided by the contractor at his cost. Penalty if any levied by customer on this account will be recovered from contractor's bills.
- 1.3.4.4 Any duty, deposit involved in getting the Electricity shall be borne by the bidder. As regards contractor's office shed also all such expenditure shall be borne by the contractor.
- 1.3.4.5 Provision for distribution of electrical power from the given single central common point to the required places with proper distribution boards, approved cables and cable laying including supply of all materials like cables, switch boards, pipes etc., observing the safety rules laid down by electrical authority of the State / BHEL / their customer with appropriate statutory requirements shall be the responsibility of the tenderer / contractor.
- 1.3.4.6 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.
- 1.3.4.7 Contractor has to make their own arrangements for electricity requirement for labour colony at his own cost.
- 1.3.4.8 As there are bound to be interruptions in regular power supply, power cut/ load shedding in any construction sites, contractor should make his own arrangement for alternative source of power supply through deployment of adequate number of DG sets at their cost during the power breakdown / failure to get urgent and important work to go on without interruptions. No separate payment shall be made for this contingency.

### **1.3.5 WATER:**

- 1.3.5.1 Water (Raw water) required for construction purposes will be provided at one single point WITHIN THE PLANT AREA on chargeable basis at the prevailing rates of TANGEDCO. The contractor to Provide necessary meter for measuring the water consumption. The required pumps & accessories, pipes for drawing water from the given point and further distribution will be arranged by the contractor at their cost to go on without interruptions.
- 1.3.5.2 The water charges may vary from time to time as per TANGEDCO/Metro conditions. However, the prevailing water charge is Rs 157.00 per Kilo litres and may liable changes. Any dispute regarding consumption, the BHEL engineer decision will be final. The TANGEDCO tariff and tax may vary from time to time and the same is applicable for the bidder.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 1.3.5.3 In case non-availability of water or the TANGEDCO is not able to supply the water, the contractor shall make his own arrangements of water suitable for construction purpose to have uninterrupted work. No separate payment shall be made for any contingency arrangement made by contractor, due to delay / failure for providing water supply. Contractor has to make his own arrangements for their water requirement for their labour colony at their cost.
- 1.3.6 MATERIAL SUPPLY**  
Supply / providing Murrum and all other materials required for the work are in the scope of the contractor.
- 1.3.7 CONSUMABLE**  
All consumables, like gas, electrodes, chemicals, lubricants etc. required for the scope of work, shall be arranged by the contractor at his cost unless otherwise specifically mentioned in the contract. In the event of failure of contractor to bring necessary and sufficient consumables, BHEL may arrange for the same at the risk and cost of the contractor. The entire cost towards this along-with overhead shall be paid by the contractor or deducted from the contractor's bills.
- 1.3.8 LIGHTING FACILITY:**  
Adequate lighting facilities such as flood lamps, hand lamps and area lighting shall be arranged by the contractor at the site of construction, and contractor's material storage area etc. at his cost.
- 1.3.9 CONTRACTOR'S OBLIGATION ON COMPLETION:**  
On completion of work, all the temporary buildings, structures, pipe lines, cables etc. shall be dismantled and leveled and debris shall be removed as per instructions of BHEL by the contractor at his cost. In the event of his 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
- 1.3.10 DEWATERING**  
Contractor shall ensure at all times that his work area & approach/ access roads are free from accumulation of water, so that the materials are safe and the erection/ progress schedule are not affected. No separate claim in this regard shall be admitted by BHEL. No separate payments for dewatering of subsoil, surface water or catchments water, if required, at any time during execution of the work including monsoon period shall be considered by BHEL.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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### **1.3.11 BID DRAWINGS**

Bid drawings like plot plan or Layout plan enclosed along with this tender is only for information and may not be referred for scope of works and this may also get revised during execution.

### **1.3.12 Area development and approaches**

In construction projects of this magnitude it is possible that all the areas / approaches may not be ready. In such cases consolidation of ground/ temporary approaches including arrangement of sleepers / sand bag filling etc for safe operation and movement of equipment including cranes / trailers/ transit mixers/ rigs/ tippers etc shall be the responsibility of the contractor at his cost. No compensation on this account shall be payable.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

### VOLUME-IA PART-I CHAPTER – IV

#### 1.4 T&Ps TO BE DEPLOYED BY CONTRACTOR

- 1.4.1 All the tools and plants required for satisfactory completion of the work have to be arranged by the contractor.
- 1.4.2 The contractor is required to arrange the following tentative T&Ps for the satisfactory completion of the work.

| Sr No    | T&P items                                                                                    | Mobilizing time from the date of commencement of work at site                                       |
|----------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>A</b> | <b>T&amp;P items</b>                                                                         |                                                                                                     |
| 1        | 2 Nos. front loader                                                                          | 1 nos. within 20 days, balance as per site requirement.                                             |
| 2        | 1 No. back hoe cum loader like JCB                                                           | 1 nos. within 20 days                                                                               |
| 3        | 10 nos. dumper/Tipper (Min 15 cum each)                                                      | 6 nos. Within 20 days. And balance within 45 days in a progressive manner as per site requirement.. |
| 4        | 2 nos. dozer of required capacity                                                            | 1 no. Within 25 days. Balance as per site requirement                                               |
| 5        | 2 nos. Vibromax (earth compactor)                                                            | 1 no. within 60 days and balance as per site requirement.                                           |
| 6        | 1 no. total station with adequate arrangement for Surveyor.                                  | As per site requirement.                                                                            |
| 7        | 5 nos. auto level & staff                                                                    | 3 nos. Within 15 days, balance as per site requirement.                                             |
| 8        | 1 no. drinking water tank – 5000 lit.                                                        | 1 no Within 20 days                                                                                 |
| 9        | 2 no truck mounted water tank capacity (min capacity – 5000 Ltrs) with sprinkler arrangement | 1 no's Within 20 days, balance as per site requirement.                                             |
| 10       | 3 nos. mobile toilets for labour use                                                         | 1 nos. within 30 days balance within 75 days.                                                       |
| 11       | Construction water Pipeline 3000 RM(100/75/32/25 dia GI Pipe)                                | As per site requirement.                                                                            |

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- Note: 1. T&P shown in the above mentioned list is tentative requirement considering parallel working in all areas mentioned in scope of work. However, mobilization schedule & quantity/ numbers as mutually agreed at site for major T&Ps, have to be adhered to. Numbers/ time of requirement will be reviewed time to time at site and contractor will provide required T&P/ equipment's to ensure completion of entire work within schedule/target date of completion without any additional financial implication to BHEL. Vendor will give advance intimation & certification regarding capacity etc. prior to dispatch of heavy equipment's. Also on completion of the respective activity, demobilization of T&P in total or in part can be done with the due approval of engineer in charge. Retaining of the T&P's during the contract period will be mutually agreed in line with construction requirement.
2. All T&P and all IMTEs, which are required for successful and timely execution of the work covered within the scope of this tender, shall be arranged and provided by the contractor at his own cost in working condition.
3. In the event of non-mobilisation of any T&P by the successful bidder and as a result progress of work suffered, BHEL reserves the right to engage required T&P in line with SCC clause no.4.2.1.7.
4. In the event of need of change of type of any of major T&Ps, approval shall be taken from BHEL Engineer in-charge prior to mobilization. The decision of Number of T&P required due to replacing the enlisted T&P as per above table, shall be taken after analyzing the production capacity and suitability of both the T&Ps.
5. Clause no. 1.6.1 of this specification (i.e. TCC) shall be referred for date of start of work.
- 1.4.3 In addition to the above, any other tools and plants required for execution of the above work are in contractor's scope.
- 1.4.4 The Bidder shall establish and maintain a field laboratory on the site and this laboratory shall be available at all time for testing.
- 1.4.5 The laboratory must have qualified technicians to carry out all tests and must be adequately equipped to ensure that all necessary testing work can be carried out in compliance with the standards.
- 1.4.6 Field and laboratory testing procedures for materials follow Indian Standard Specifications with necessary equipment's like as given in table below:

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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| <b>Soil Testing Equipment</b> |                      |                                  |                                                 |         |
|-------------------------------|----------------------|----------------------------------|-------------------------------------------------|---------|
| 1                             | Liquid limit test    | Liquid limit apparatus           | Standard                                        | IS 2720 |
| 2                             | Core Cutter test     | core cutter apparatus            | Rammer, 6 no's of std. core cutter mould, dolly | IS 2720 |
| 3                             | Proctor density test | Std proctor Compaction apparatus | Standard                                        | IS 2720 |
| 4                             | Moisture Content     | Rapid moisture meter             | Standard, at least 04 no's                      | IS 2720 |

- 1.4.7 Contractor shall have at all times experienced operators and technicians for routine and breakdown maintenance of the equipment. Any delay in rectification of defects will warrant BHEL rectifying the defect and charging the cost to the contractor.
- 1.4.8 In case the contractor fails to provide any T&P which is in the scope of contractor and if BHEL provides such T&P available with BHEL, hire charges prevailing (as per BHEL norms) as on that day will be recovered from the contractor as per the prevailing BHEL Corporate Crane hire charges (may vary from time to time). Corresponding pages of Corporate Crane hire charges are enclosed in Chapter 5 of part II of Technical Conditions of Contract (Volume-I Book-I). This may get revised further as per the BHEL corporate guidelines. However, prevailing rates as on date of execution may be applicable
- 1.4.9 Crane operators deployed by the contractor shall be tested by BHEL before they are allowed to operate the cranes.

## **VOLUME-IA PART-I CHAPTER – V**

### **1.5 T&Ps TO BE DEPLOYED BY BHEL**

1.5.1 BHEL will not provide any T&Ps for this package.

## VOLUME-IA PART-I CHAPTER - VI

### TIME SCHEDULE

#### **1.6 TIME SCHEDULE**

- 1.6.1 The date of commencement of work at site shall be mutually agreed between successful bidder and BHEL Site In charge.
- 1.6.2 The entire work of Murrum blanketing as per the scope detailed in the Tender Specification shall be completed within 12 (Twelve) months from the date of commencement of work at site.
- 1.6.3 During the total period of contract, the contractor has to carry out the activities in a phased manner as required by BHEL and the program of milestone events.
- 1.6.4 The contractor is required to refer Form 15 in Volume 1A Part II for all the instructions to be taken immediately after receipt of LOI.

#### **1.6.5 MOBILISATION**

- 1.6.5.1 The Contractor has to augment his resources in such a manner to achieve the completion of work as per the site requirement.
- 1.6.5.2 The above time allowed for completion of work including Sundays and Holidays is from the date of commencement of work. Detailed program to be prepared by the tenderer taking in to consideration of the COMPLETION SCHEDULES /site decision on drawings flow (latest) and submitted for BHEL's approval.
- 1.6.5.3 In order to meet above schedule in general, and any other intermediate targets set, to meet customer / project schedule requirements, contractor shall arrange & augment all necessary resources from time to time on the instructions of BHEL within the quoted rate.
- 1.6.5.4 In case the project is to be advanced, the civil works in the scope of the contractor is to be advanced to meet the project requirement. No extra payment whatsoever shall be paid on this account.

#### **1.6.6 PERT CHART AND PROGRESS REPORTS**

- 1.6.6.1 The contractor shall submit a detailed L2 and L3 network to meet the agreed project schedule covering various activities and their split up details such as construction, procurement of materials, fabrication & erection activities. This

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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network shall also clearly indicate the interface facilities/inputs to be provided by BHEL/Customer and the dates by which such facilities/inputs are required. The schedule shall be acceptable to BHEL for meeting project's mile stone targets/schedule.

### **1.6.7 GUARANTEE PERIOD**

- 1.6.7.1 Guarantee period of 12 months shall commence from the date of completion of the whole work certified by the BHEL Engineer.

### **1.6.8 CONSTRUCTION SCHEDULE FOR TENDERED WORK**

- 1.6.8.1 The bidder must submit a detail schedule (area wise) for completion of work to meet project schedule within 15 days from the date of issue of LOI.

### **1.6.9 RECORDS TO BE MAINTAINED AT SITE:**

- 1.6.9.1 Record of Quantity of FREE/Chargeable items issued by BHEL must be maintained during contract execution. Also reconciliation statement to be prepared at regular intervals.
- 1.6.9.2 The under mentioned Records/ Log-books/ Registers applicable to be maintained.
- A. Site Order Book.
  - B. Test Check of measurements.
  - C. Cement Supply and Consumption Daily Register
  - D. Records of Test reports of Field tests.
  - E. Records of manufacture's test certificates.
  - F. Records of disposal of scraps generated during and after the work completion.

## **VOLUME-IA PART-I CHAPTER – VII**

### **1.7 TERMS OF PAYMENT**

#### **1.7.1 SECURED ADVANCE**

Not Applicable

#### **1.7.2 Advance for Mobilization**

1.7.2.1 Interest bearing advance for Mobilization, limited to 5% of the contract value will be paid against submission of bank guarantee of at least 110% of the advance valid for the contract period, which will be recovered from the first running bill onwards. The advance for mobilization shall be paid as under.

1.7.2.2 2% of contract value after receipt of initial Security Deposit and additional security deposit as applicable if any, consortium SD as per relevant clauses in the GCC/TCC along with unqualified acceptance of detailed letter of intent.

1.7.2.3 1.5% of contract value on completion of site Mobilization of Machinery & T&P as given below and on certification by site in-charge for compliance.

1. Front Loader – 1 No.
2. Back hoe cum loader like JCB – 1 No.
3. Vibromax – 1 No.
4. Dumper – 3 Nos.

1.7.2.4 1.5% of contract value on completion of site Mobilization of Machinery & T&P as given below in addition to the above, and on certification by site in-charge for compliance.

1. Front Loader – 1 No.
2. Dozer – 1 No.
3. Dumper – 3 nos

1.7.2.5 Payment of the advance as specified herein and recovery of the advance will be as per clause 2.13 of GCC and SL No.9 of Vol-1A Part II Chapter 1. Option of availing the interest bearing mobilization advance is left with the bidder.

#### **1.7.3 Interim Payment**

1.7.3.1 Interim bills in the form of monthly running bills prepared by the contractor in soft as well as Hard copies shall be based on the quantities executed and measured.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 1.7.3.2 95% item rate shall be released after completion of works certification by Engineer in charge.
- 1.7.3.3 5% of the item rate shall be released after submission of the quality check formats as per the quality plan for the quantum of work billed and duly certified by engineer.
- 1.7.3.4 For Retention amount – please refer SI No.16 of Vol-1A Part II Chapter-1.
- 1.7.3.5 BHEL Site Engineer, at discretion, may operate the part rate of the items where supply and installation are involved, on receipt of materials at site.  
  
Also refer to Vol-1A Part II Chapter-1 for other terms and conditions related to Terms of Payment.

### **1.7.4 METHOD OF MEASUREMENT**

- 1.7.4.1 Mode of measurement shall be as per relevant clauses of technical specification of this tender. In case the same is not available the relevant IS 1200 in conjunction of IS code 3385 shall be adopted. In case the same is also not available, the standard procedure adopted in CPWD shall be adopted. In case the same is also not available in CPWD, the measurement of the work done will be based on the mutual agreement between BHEL and contractor. In all the above cases, the interpretation of BHEL will be final and binding to the contractor.

**NO CLAIM WHAT SO EVER MAY BE, WILL BE ENTERTAINED UNDER THIS CONTRACT, AFTER DULY SIGNING THE FINAL BILL ALONG WITH MEASUREMENT BOOKS AND ACCEPTED BY BHEL.**

## **VOLUME-IA PART-I CHAPTER - VIII**

### **TAXES AND OTHER DUTIES**

- 1.8.1 Goods and service Tax (GST) & Cess
- 1.8.1.1 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.
- 1.8.1.2 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
- 1.8.1.3 Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules wherein the 'Bill To' details will as below:
- |           |                                                                            |
|-----------|----------------------------------------------------------------------------|
| BHEL GSTN | - 33AAACB4146P2ZL                                                          |
| NAME      | - BHARAT HEAVY ELECTRICALS LIMITED                                         |
| ADDRESS   | - 2 X 660 MW ENNORE SEZ STPP, VAYALUR BR PO, MINJUR PO, TAMILNADU - 601203 |
- 1.8.1.4 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.
- 1.8.1.5 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.
- 1.8.1.6 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.
- 1.8.1.7 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)

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- 1.8.1.8 TDS under GST (if/ as & when applicable) shall be deducted at prevailing rates on gross invoice value from the running bills.
- 1.8.1.9 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.
- 1.8.1.10 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.

### **1.8.2 All taxes and duty other than GST & Cess**

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.

### **1.8.3 Statutory Variations**

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.

### **1.8.4 New Taxes/Levies**

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.

### **1.8.5 Direct Tax**

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 -IX**

**1.9.0 BILL OF QUANTITY**

As mentioned in the Volume II, Price Bid, Part-C

NOTE TO BOQ:

- A) The Price bid contains the consolidated list of BOQ with brief description of items. The quantity indicated in the BOQ / Price bid is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
- B) Before filling the Rates in the Price bid, the bidder shall go through the detailed specification of all items of BOQ as well as Scope of Work as specified in relevant Clause of this document
- C) Tenderers are requested to affix their company seal and authorized signature in all pages.
- D) Bidders shall refer Volume II, Price Bid, Part –A for Instructions.

**VOLUME-IA PART-I CHAPTER -X  
GENERAL**

**1.10.0 In addition to the clause 2.8 of General Conditions of Contract (Volume-1C of Book-II) the contractor shall comply with the following:**

1.10.1 Payment Bidders are requested to furnish the following at PSSR-HQ, Chennai immediately after release of Letter of Intent (LOI)

- I. Security Deposit and Additional Security Deposit (As applicable).
- II. Unqualified Acceptance for Detailed LOI/ Work Order.
- III. Rs.100/- Stamp Paper for preparation of Contract Agreement.
- IV. Option (whether a or b of said clause) exercised towards Performance Security Deposit for the subject contract as per Sl. No. 16 of Volume IA Part II Chapter 1 of TCC.

1.10.2 Bidders are requested to furnish the proof of documents for the following at PSSR- Site

- I. PF Regn No.
- II. Labour License No.
- III. Workmen Insurance Policy No.

**1.10.3 In addition to the clause 2.8 of General Conditions of Contract (Volume-1C of Book-II) the contractor shall comply with the following.**

**1.10.4 BOCW Act & BOCW Welfare Cess Act**

1.10.4.1 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.

1.10.4.2 The Contractor should comply with the provisions of BOCW Welfare Cess Act 1996 in respect of the work awarded to them by BHEL

1.10.4.3 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

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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measures like Safety Officers, safety committee, issue of Personal protective equipments, canteen, rest room, drinking water, Toilets, ambulance, first aid centre etc.,

- 1.10.4.4 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.
- 1.10.4.5 Contractor shall make remittance of the BOCW cess as per Act in consultation with BHEL as per the rates in force (presently 1%). BHEL shall reimburse the same upon production of documentary evidence. However, BHEL shall not reimburse the Fee paid towards the registration of establishment, fess paid towards registration of beneficiaries and contribution of beneficiaries remitted.
- 1.10.4.6 Non-compliance to provisions of the BOCW act and BOCW welfare Cess act is not acceptable. In case of any non-compliance, BHEL reserves the right to withhold any sum 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.

### **1.10.5 PROVIDENT FUND**

- 1.10.5.1 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.
- 1.10.5.2 The final bill amount would be released only on production of clearance certificate from PF / ESI and labour authorities as applicable.

### **1.10.6 OTHER STATUTORY REQUIREMENTS**

- 1.10.6.1 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.
- 1.10.6.2 The contactor shall submit monthly running bills along with the copies of

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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monthly wages (of the preceding month) u/r 78(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.

- 1.10.6.3 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.
- 1.10.6.4 The Contractor shall submit copies of Final Settlement statement of disbursement of retrenchment benefits on retrenchment of each workman under ID 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 Act 1948 (If applicable) to BHEL along with the Final Bill.
- 1.10.6.5 In case of any dispute pending before the appropriate authority under ID Act 1948, WC Act 1923 or ESI Act 1948 and PF Act 1952, BHEL reserves 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.
- 1.10.6.6 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.
- 1.10.7 DEPLOYMENT OF SKILLED / SEMI-SKILLED TRADESMEN

The following clause is applicable in case the contract value / contract price is Rs. Five crores and above.

The contractor shall, at all stages of work deploy skilled / semi-skilled tradesmen who are qualified and possess certificate in particular trade from CPWD Training Institute / Industrial Training Institute / National Institute of Construction Management and Research (NICMAR), National Academy of Construction, CIDC or any similar reputed and recognized Institute managed / certified by State / Central Government. The number of such qualified tradesmen shall not be less than 20% of total skilled / semi-skilled workers required in each trade at any stage of work. The contractor shall submit number of man days required in respect of each trade, its scheduling and

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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the list of qualified tradesmen along with requisite certificate from recognized Institute to Engineer-in-Charge for approval. Notwithstanding such approval, if the tradesmen are found to have inadequate skill to execute the work of respective trade, the contractor shall substitute such tradesmen within two days of written notice from Engineer-in-Charge. Failure on the part of contractor to obtain approval of Engineer-in-Charge or failure to deploy qualified tradesmen will attract a compensation to be paid by contractor at the rate of Rs. 100 per such tradesman per day. Decision of Engineer-in-Charge as to whether particular tradesman possesses requisite skill and amount of compensation in case of default shall be final and binding.

### **1.10.8 GENERAL**

#### **1.10.8.1 Site Visit by the Bidder**

1.10.8.2 The bidder shall, prior to submitting his tender for the work, visit and examine the site of works and its surroundings at his own expense, and obtain and ascertain for himself on his own responsibility all information that may be necessary for preparing his tender and entering into a contract, and take the same into account in the quoted contract price for the work.

#### **1.10.8.3 The bidder shall satisfy themselves about the following factors:**

- i) Site conditions including access to the site, existing and required roads and other means of transport/communication for use by him in connection with the work including diverting and re-routing of services.
- ii) Requirement and availability of land and other facilities of his enabling works, establishment of his nursery, office, stores etc.
- iii) Ground conditions including those bearing upon transportation, disposal, handling and storage of materials required for the work or obtained there-from.
- iv) Source and extent of availability of suitable materials, including water etc., and labour (skilled and unskilled) required for work, and laws and regulations governing their use and employment.
- v) Geological, meteorological, topographical and other general features of the site and its surroundings as are pertaining to and needed for the performance of the work.
- vi) The limit and extent of surface and subsurface water to be encountered during the performance of the work, and the requirement of drainage and pumping.

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- vii) The type of equipment and facilities needed, for and in the performance of the work;
  - viii) The extent of lead and lift required for the work in complete form over the entire duration of the contract, and
  - ix) All other information pertaining to and needed for the work including information as to the risks, contingencies and other circumstances which may influence or affect the work or the cost thereof under this contract.
- 1.10.8.4 The bidder should note that information, if any, in regard to the local conditions, as contained in these tender documents, has been given to tenderer merely for guidance and is not warranted to be complete.
- 1.10.8.5 A bidder shall be deemed to have full knowledge of the site, whether he inspects it or not, and no extra charges consequent on any misunderstanding or otherwise shall be allowed.
- 1.10.8.6 The bidder and any of his personnel or agents will be granted permission by the Site-In-Charge or his authorized nominee, on receipt of formal application in respect thereof a week in advance of the proposed date of inspection of site, to enter upon his premises and lands for purpose of such inspection, but only on the express condition that the tenderer (and his personnel and agents) will relieve and indemnify the Employer (and his personnel and agents) from and against all liability in respect thereof and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused which, but for the exercise of such permission, would not have arisen.
- 1.10.8.7 Scope of work covered under this specification requires quality workmanship, engineering and green belt management along with the supply of all consumables, tools and tackles and testing instruments. The contractor shall ensure timely completion of work. The contractor shall have adequate tools, measuring instruments etc. in his possession. He shall also have adequate trained, qualified and experienced engineers, supervisory staff and skilled personnel. The manpower deployment identified by contractor shall match with above scope of works.
- 1.10.8.8 It is not the intent to specify herein all details of all material. Any item related this work not covered by this but necessary to complete the system will be deemed to have been included in the scope of the work.
- 1.10.8.9 All the necessary certificates and licenses required to carry out this scope of work are to be arranged by the contractor then and there at no extra cost.
- 1.10.8.10 Site testing wherever required shall be carried out for all items / materials

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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installed by the contractor to ensure proper installation and functioning in accordance with drawings, specifications and manufacturer's recommendations.

- 1.10.8.11 The contractor shall carryout additional tests, if any, which the Engineer feels necessary because of site conditions and also to meet system specification.
- 1.10.8.12 The work shall be executed under the usual conditions without affecting power plant construction / operation and in conjunction with other operations and contracting agencies at site. The contractor and his personnel shall co-operate with the personnel of other agencies, co-ordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as a whole.
- 1.10.8.13 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.
- 1.10.8.14 Wherever Construction sequences are furnished by BHEL, the contractor shall follow the same sequence.
- 1.10.8.15 Contractor shall execute the supply and works as per sequence prescribed by BHEL at site engineer. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the methods of execution of similar job in any other site or for any reasons whatsoever.
- 1.10.8.16 If required by BHEL, the contractor shall change the sequence of his operation so that work on priority sectors can be completed within the projects schedule. The contractor shall afford maximum assistance to BHEL in this connection without causing delay to agreed completion date.
- 1.10.8.17 Contractor shall, transport all materials to site and unload at site / working area for inspection and checking. All material handling equipment required shall be arranged by the contractor.
- 1.10.8.18 Contractor shall retain all T&P / Testing instrument / Material handling equipment's etc. at site as per advice of BHEL engineer and same shall be taken out from site only after getting the clearances from engineer in charge.
- 1.10.8.19 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.
- 1.10.8.20 The Contractor may have to execute work in such a place and condition where other agencies also will be under such circumstances. However, completion time for construction, agreed will be subject to the condition that

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contractor's work is not hampered by the agencies.

- 1.10.8.21 Contractor has to work in close co-ordination with other agency at site. BHEL engineer will co-ordinate area clearance. In a project of such magnitude, it is possible that the area clearance may be less / more at a particular given time. Activities and Construction program have to be planned in such a way that the milestones are achieved as per schedule/ plans. Contractor shall arrange & augment the resources accordingly.
- 1.10.8.22 The contractor must obtain the signature and permission of the security personnel of the customer / BHEL 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.
- 1.10.8.23 Contractor shall remove all scrap materials periodically generated from his working area and collect the same at one place earmarked for the same. Load of scraps is to be shifted to a place earmarked by BHEL. Failure to collect the scrap is likely to lead to accidents and as such BHEL reserves the right to collect and remove the scrap at contractor's risk and cost if there is any failure on the part of contractor in this respect.
- 1.10.8.24 The contractor shall ensure that his premises are always kept clean and tidy to the extent possible. Any untidiness noted on the part of the contractor shall be brought to the attention of the contractor's site representative who shall take immediate action to clean the surroundings to the satisfaction of the Engineer-in-Charge.
- 1.10.8.25 The contractor is strictly prohibited from using BHEL's regular components like angles, channels, beams, plates, pipe / tubes, and handrails etc. for any temporary supporting or scaffolding works. Contractor shall arrange himself all such materials. In case of such misuse of BHEL materials, a sum as determined by BHEL engineer will be recovered from the contractor's bill. The decision of BHEL engineer is final and binding on the contractor.
- 1.10.8.26 No member of the already erected structure / buildings, other component and auxiliaries should be removed / modified without specific approval of BHEL engineer.
- 1.10.8.27 Contractors shall ensure that all their Staff / Employees are exposed to periodical training programme conducted by qualified agencies/ personnel on latest ISO 9001 Standards.
- 1.10.8.28 Some time it may be required to re-schedule the activities to enable other agencies to commence / continue the work so as to keep the overall project schedule.
- 1.10.8.29 The terminal points decided by BHEL are final and binding on the contractor for deciding the scope of work and effecting the payment for the work done

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up to the terminals.

- 1.10.8.30 Crane operators deployed by the contractor shall be tested by BHEL before he is allowed to operate the cranes.
- 1.10.8.31 On Completion of work, all the temporary buildings, structures, pipe lines, cable etc. shall be dismantled and leveled and debris shall be removed as per instruction of BHEL by the contractor at his cost. In the event of his 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.
- 1.10.8.32 It is the responsibility of the contractor to do the checking, testing etc. if necessary, repeatedly to satisfy BHEL Engineer with all the necessary tools and tackles, manpower etc. without any extra cost. The testing will be completed only when jointly certified so, by the BHEL Engineer.
- 1.10.8.33 If any item not covered but requires being executed, same shall be carried out by the contractor. Equivalent or proportional unit rate shall be considered wherever possible from the BOQ. The rates quoted by the contractor shall be uniform as far as possible for similar items appearing in rate schedule.
- 1.10.8.34 The contractor's work shall not hinder other work, either underground or over ground, such as electrical, phone lines, water or sewage lines, etc. In areas of overlap, the contractor shall work in coordination with other related contractors. Any damage by the landscape contractor's team to such utilities will be penalized and contractor shall be responsible for cost for such damages.
- 1.10.8.35 SITE INSPECTION
- 1.10.8.35.1 The owner / employer or his authorized agents may inspect various stages of work during the currency of the contract awarded to him. The contractor shall make necessary arrangements for such inspection and carry out the rectification pointed out by the owner / employer without any extra cost to the owner / employer. No cost whatsoever such duplication of inspection of work be entertained.
- 1.10.8.35.2 BHEL / Customer will have full power and authority to inspect the works at any time, either on the site or at the contractor's premises. The contractor shall arrange every facility and assistance to carry out such inspection. On no account will the contractor be allowed to proceed with work of any type unless such work has been inspected and entries are made in the site inspection register by customer / BHEL.
- 1.10.8.35.3 Wherever the performance of work by the contractor is not satisfactory in respect of workmanship, deployment of sufficient labour or equipment, delay in execution of work or any other matter, BHEL shall have the right to engage

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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labour at normal ruling rates and get the work executed through other agency and debit the cost to the contractor and the contractor shall have no right to claim compensation thereof. In such a case, BHEL shall have the right to utilize the materials and tools brought by the contractors for the same work.

### 1.10.8.36 DOCUMENTATION

1.10.8.36.1 The following information shall be furnished by the bidder within two weeks of award of contract for purchaser's approval

- a) Bar chart covering planned activities at site
- b) Detailed organization chart
- c) Details of T&P available with contractors with documents proofs.

1.10.8.36.2 The following information shall be furnished by the bidder after testing and inspection: Test certificates of various tests conducted at site. All inspection and test certificates shall be signed by BHEL representative also.

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## VOLUME-IA PART – I CHAPTER - XI

### **PROGRESS OF WORK**

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

#### **1.11.0 PROGRESS AND MONITORING OF WORK**

- 1.11.1 Refer forms F -14, F-15 as per relevant chapters of Vol-1A Part-II of TCC. Also refer Form F-16 to F-18 in Volume I D of Volume -I Book-II. Plan and review will be done as per the above formats.
- 1.11.2 Contractor is required to draw mutually agreed monthly construction programs in consultation with BHEL well in advance monthly as per the Form-14. Contractor shall ensure achievement of agreed program and shall also timely arrange additional resources considered necessary at no extra cost to BHEL. Progress review meetings will be held at site during which actual progress during the week vis-a-vis scheduled program shall be discussed for actions to be taken for achieving targets. Contractor shall also present the program for subsequent week. The contractor shall constantly update / revise his work program to meet the overall requirement. All quality problems shall also be discussed during above review meetings. Necessary preventive and corrective action shall be discussed and decided upon in such review meetings and shall be implemented by the contractor in time bound manner so as to eliminate the cause of nonconformities.
- 1.11.3 The contractor shall submit daily, weekly and monthly progress reports, manpower reports, materials reports, consumables (gases / electrodes / ferules / lugs) report, T&Ps availability report and other reports as per Performa considered necessary by the Site Engineer as per the BHEL formats.
- 1.11.4 The contractor shall submit weekly / fortnightly / monthly statement report regarding consumption of all consumables for cost analysis purposes.
- 1.11.5 The monthly report ending on 24<sup>th</sup> of every month shall be submitted as a booklet and shall contain the following details :-
  - a) Colour Progress photographs to accompany the report should be submitted.
  - b) Construction progress in terms of quantity, CUM, etc., completed as relevant to the respective work areas against planned.
  - c) Site Organization chart of engineers & supervisors as on 24<sup>th</sup> of the month with further mobilization plan

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- d) Category- wise man hours engaged during the previous month under the categories like fitters, electricians, welders, riggers, khalasis, grinder-men, gas-cutters, crane operators, store keepers, lab technicians, helpers, security etc. Data will be spilt up under the work area .
  - e) Consumables report giving consumption of all types of gases and electrodes during the previous month (as applicable).
  - f) Availability report of cranes/T&Ps
  - g) Safety implementation report in the format
  - h) Pending material and any other inputs required from BHEL for activities planned during the subsequent month.
- 1.11.6 The manpower reports shall clearly indicate the manpower deployed, category wise specifying also the activities in which they are engaged.
- 1.11.7 During the course of construction, if the progress is found unsatisfactory, or if the target dates fixed from time to time for every milestone are to be advanced, or in the opinion of BHEL, if it is found that the skilled workmen like fitters, operators, technicians etc employed are not sufficient BHEL will induct required additional workmen to improve the progress and recover all charges incurred on this account including all expenses together with BHEL overheads from contractor's bills.
- 1.11.8 It is the responsibility of the contractor to provide all relevant information on a regular basis regarding construction progress, labour availability, equipment deployment, testing, etc.
- 1.11.9 The progress reports shall indicate the progress achieved against plan, indicating reasons for delays, if any. The report shall also give remedial actions which the contractor intends to make good the slippage or lost time so that further works can proceed as per the original plan the slippages do not accumulate and affect the overall programme.
- 1.11.10 The contractor to reflect actual progress achieved during the month and will be submitted to BHEL, so that slippages can be observed and necessary action taken in order to ensure that the situation does not get out of control will update the construction schedule forming part of this contract each month.

### MATERIAL HANDLING

- 1.12.0 Open land as available shall be provided by BHEL on free of cost basis. Hard surfacing of this yard and all round drain shall be carried out by the contractor at his own cost within the quoted rate. The bidder shall make complete arrangement of necessary security personnel, to safeguard all such materials in his custody.
- 1.12.1 The contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such material.
- 1.12.2 The contractor shall maintain proper store account for all the BHEL issued materials and material brought in by the bidder and shall give three copies of once in two months computerized reconciliation statement of such account to the BHEL.
- 1.12.3 Materials shall not under any circumstances taken out of the project site unless otherwise permitted by BHEL.

## VOLUME-IA PART – II CHAPTER 1

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

#### **SI No: 1**

Clause 4.1.11 of SCC is deleted.

#### **SI No: 2:**

#### **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” (Document No. HSEP: 14 Rev00) enclosed.

Chapter IX Clause 9.1.1 to 9.1.25 stands deleted.

Chapter IX Clause 9.2 to 9.62 stands deleted.

#### **SI No: 3:**

#### **Clause No. 10.5 on RA Bill Payments, in Special Conditions of Contract (SCC), Volume-IB, Book-II, 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: 4**

**The EARNEST MONEY DEPOSIT (EMD) clause 1.9 published in General Conditions of Contract (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.
- i. Electronic Fund Transfer credited in BHEL account (before tender opening).

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- ii. Earnest Money Deposit (EMD) shall also be paid directly to BHEL-PSSR through Online EMD payment portal, before tender opening, by following these steps.
  1. Visit [www.onlinesbi.com](http://www.onlinesbi.com) -> Go to State Bank Collect (In the tab section)
  2. Click Check box to proceed for payment -> Click on Proceed
  3. Under State of Corporate/Institution -> Select Tamilnadu
  4. Under Type of Corporate/Institution -> Select PSU – Public Sector Undertaking -> Go
  5. Under PSU – Public Sector Undertaking Name -> Select BHEL PSSR CHENNAI and Submit
  6. Under Select Payment Category -> SCT Tender EMD & Tender Fees
- iii. Banker's cheque or Pay order or Demand Draft in favour of 'Bharat Heavy Electricals Limited' (along with offer) and payable at 'BHEL-PSSR, EVR Periyar Building, 690, Anna Salai, Nandanam, Chennai – 600035'
- iv. Fixed Deposit Receipt (FDR) issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).

Note:

- a) In addition to above, the EMD amount in excess of Rs. Two Lakh may be accepted in the form of Bank Guarantee from Scheduled bank. **(Explanatory statement: EMD upto Rs. 2 Lakhs can be submitted in any of the form as in (i) to (iv) above, and where EMD in a tender is more than Rs. 2 Lakhs, then first part of EMD of Rs. 2 Lakhs can be submitted in (i) to (iv) above and remaining amount over and above Rs. 2 Lakhs by way of BG).** The Bank Guarantee in such cases shall be valid for at least six months from the scheduled due date of tender submission mentioned in the Notice Inviting Tender. Proforma of BG for EMD enclosed.
- b) Date of Expiry of Claim shall be minimum of 60 days after the validity of Bank Guarantee.
- c) Proforma for Bank Guarantee for EMD is enclosed with this Tender.

Bank Details for the purpose of Taking EMD BG

|                                  |                                                                                              |
|----------------------------------|----------------------------------------------------------------------------------------------|
| Name and Address of Beneficiary: | Bharat Heavy Electricals Ltd. #690, EVR Periyar Building, Nandanam, Anna Salai, Chennai - 35 |
| Name of Bank of Client :         | State Bank Of India                                                                          |

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|                      |                                                                               |
|----------------------|-------------------------------------------------------------------------------|
| Bank Branch Address: | SBI Saidapet Branch, EVR Periyar Building, Nandanam, Anna Salai, Chennai - 35 |
| IFSC Code :          | SBIN0000912                                                                   |
| Account No. :        | 10610819499                                                                   |

### Details for SFMS (Structured Financial Messaging System) transmission of BG

|             |     |                  |
|-------------|-----|------------------|
| Bank Branch | and | SBI TFCPC Branch |
| Branch Code |     | 5056             |
| IFSC Code   |     | SBIN0005056      |

- 1.9.2 EMD shall not carry any interest.
- 1.9.3 EMD by the Tenderer will be forfeited as per NIT Conditions, if:
- 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.
  - The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/Contract
- 1.9.4 EMD given by all unsuccessful tenderers will be refunded normally within 15 days of award of work.
- 1.9.5 EMD of successful tenderer will be retained as part of Security Deposit.
- 1.9.6 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/contractors" and forfeited / released based on the action determined under these guidelines.

### **Sl No: 5**

**SECURITY DEPOSIT The SECURITY DEPOSIT (SD) 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.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 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. Cash (as permissible under the extant Income Tax Act)
  - ii. Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL
  - iii. 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.
  - iv. 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.
  - v. 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.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 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.
- 1.10.11 Penalty for Delayed Remittance of Security Deposit  
If the contractor fails to furnish SD before start of work, in line with 1.10.3 above, Simple Interest against delayed remittance of the Security Deposit shall be deducted from the sub-contractor at the rate of SBI PLR + 2% on the value of 50% SD of the contract, for the delayed period (i.e., period between start of work and date of remittance of Initial SD, i.e., atleast 50% of SD). In case, the delayed period has different SBI PLR rates, Simple Interest shall be calculated based on different rates by considering the corresponding time period. On similar lines Penalty shall be levied for delayed remittance of Additional Security Deposit (if applicable).

Note: - Bank details & SFMS details provided above in Sl. No. 04 Earnest Money Deposit) may be used for the purpose of arranging Bank Guarantees towards Security Deposit / Additional Security Deposit also.

### **Sl No: 6**

#### **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:
- 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.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- 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: 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).

\* 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.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

### **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.  $T2 = [1 - (X/Y)] \times T1$
- 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

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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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.

### **SL No: 7**

**Void**

### **SL No: 8**

#### **OVERRUN COMPENSATION (ORC)**

The **OVERRUN COMPENSATION (ORC)** clause 2.12 published in General Conditions of Contract (Volume I Book-II) is revised as under.

#### 2.12 OVERRUN COMPENSATION (ORC)

2.12.1 **ORC during original contract period:** No ORC shall be applicable during the original contract period.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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**2.12.2 ORC during extended period for the reasons solely attributable to contractor:** No ORC shall be applicable during the extended period granted for the reasons solely attributable to contractor and work executed during this period shall be paid as per original contract rates.

**2.12.3 ORC during extended period for the reasons not attributable to contractor:** ORC shall be payable as per following procedure:

**2.12.3.1** For initial period of twelve months of extended period, ORC rate applicable over executed value shall be 5%. For every subsequent period of twelve months, ORC rate shall be further increased by 5% over the previous rate. For example, ORC rates applicable for initial period of 12 months and subsequent period of 12 months are given below.

| Sl. No. | Extended Period for the reasons attributable to BHEL | ORC rate applicable over executed value           |
|---------|------------------------------------------------------|---------------------------------------------------|
| 1       | First 12 months                                      | 5%                                                |
| 2       | 13 <sup>th</sup> -24 <sup>th</sup> month and so on   | 10.25%<br>$\{[(1.05 \times 1.05)-1] \times 100\}$ |

This process of increasing ORC rate for each subsequent period of 12 months shall continue till applicability of ORC.

**2.12.3.2** On completion of original contract period as well as on completion of each subsequent period of twelve months i.e. at the time of change in applicable ORC rate, Delay Analysis shall be carried out and percentage shortfall attributable to both BHEL & Contractor shall be calculated.

**2.12.3.3** For the purpose of calculation of ORC, executed value of work in the month shall be divided in Part-1 and Part-2 in proportion of percentage shortfall attributable to BHEL and contractor respectively, based on the last delay analysis as worked out in 2.12.3.2.

ORC shall be payable only on Part-1 and no ORC shall be payable on Part-2. Value of Part-1 shall be further limited to the value of actual inputs provided by BHEL i.e. "Plan - Shortfall attributable to BHEL" for the month, as per Form-14 for calculation of ORC.

**2.12.3.4** Payment of ORC amount shall be further regulated as follows:

- (i) 50% of the ORC is allocated for deployment of matching resources (with weightages) agreed as per the joint programme drawn vide 2.11.4. ORC Payment against resources shall be calculated in proportion to percentage of resources actually deployed w.r.t. planned resources, as per Form-14.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- (ii) 50% of ORC is allocated for achieving of planned progress agreed as per the joint programme drawn vide 2.11.4. ORC Payment shall be reduced in proportion to percentage shortfall attributable to contractor w.r.t.–“Plan - Shortfall attributable to BHEL” for the month, as per Form-14.
- 2.12.3.5 The maximum amount of ORC payable for the month shall be limited to Rs. 5,00,000/-.
- 2.12.3.6 In case, there is no shortfall attributable to contractor for the month and also contractor has deployed the resources as agreed in Form-14 but ORC amount payable for the month worked out as per procedure mentioned in clause 2.12.3.3, 2.12.3.4 and 2.12.3.5, is less than Rs.1,00,000/-, then ORC amount payable for the month shall be Rs.1,00,000/- otherwise ORC amount payable for the month shall remain same.
- 2.12.3.7 In case execution is on **HOLD** (Other than Force Majeure), ORC shall be payable as per following:
  - i). Contractor has not been permitted by BHEL to de-mobilize
    - a) ORC amount of Rs. 1,00,000/- per month shall be applicable during the period of HOLD provided resources as planned are deployed (not demobilized) during the period of hold.
    - b) Subsequent to lifting of HOLD, Period of HOLD shall not be excluded in calculation of period for deciding applicable ORC rate as per clause 2.12.3.1.
  - ii). Contractor has been permitted to demobilize and to remobilize after lifting of HOLD
    - a) No ORC shall be payable to contractor for the period of HOLD.
    - b) Subsequent to lifting of HOLD, Period of HOLD shall not be excluded in calculation of period for deciding applicable ORC rate as per clause 2.12.3.1.
- 2.12.3.8 In case **Force Majeure** is invoked:
  - i). No ORC shall be applicable during the period of Force Majeure.
  - ii). Subsequent to revocation of Force Majeure, period of Force Majeure shall be excluded in calculation of period for deciding applicable ORC rate as per clause 2.12.3.1.
- 2.12.4 Applicability of ORC: ORC shall not be applicable for following activities.
  - (i) Area cleaning, removal of temporary structures and return of scrap.

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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- (ii) Punch list points / pending points liquidation pending due to reasons attributable to contractor
- (iii) Submission of "As built Drawing"
- (iv) Material Reconciliation
- (v) Completion of Contract Closure formalities like HR Clearance/ No dues from various dept./ Statutory Authorities etc.

2.12.5 Total Over Run Compensation shall be limited to 10% of the cumulatively executed contract value till the month (excluding Taxes and Duties if payable extra). For this purpose, executed contract value excludes PVC, ORC and Extra/Supplementary Works.

### **Sl No: 9**

#### **Clauses 2.13.1, 2.13.6 & 2.13.7 in GCC on Interest Bearing Recoverable Advances,**

- 9.1 Clauses 2.13.1, 2.13.6 & 2.13.7 in GCC is revised as under:
- 9.1.1 Clause 2.13.1 in GCC is revised as "Normally no advance payment shall be payable to the contractor. Mobilization 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".
- 9.1.2 Clause 2.13.6 in GCC 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".
- 9.1.3 Clause 2.13.7 in GCC 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."

### **Sl. No: 10**

#### **Void**

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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## **SI No: 11**

### **PRICE VARIATION COMPENSATION (PVC)**

The PRICE VARIATION COMPENSATION (PVC) is not applicable for this work.

## **SI No: 12**

### **Clauses 2.21 in GCC regarding Arbitration is amended as below**

#### **2.21 ARBITRATION & CONCILIATION**

##### **2.21.1 ARBITRATION:**

2.21.1.1 Except as provided elsewhere in this Contract, in case Parties are unable to reach amicable settlement (whether by Conciliation to be conducted as provided in Clause 2.21.2 herein below or otherwise) in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract (hereinafter referred to as the 'Dispute'), then, either Party may, commence arbitration in respect of such Dispute by issuance of a notice in terms of section 21 of the Arbitration & Conciliation Act, 1996 (hereinafter referred to as the 'Notice'). The Notice shall contain the particulars of all claims to be referred to arbitration in sufficient detail and shall also indicate the monetary amount of such claim. The arbitration shall be conducted by a sole arbitrator to be appointed by the Head of the BHEL Power Sector Region issuing the Contract within 60 days of receipt of the complete Notice. The language of arbitration shall be English.

The Arbitrator shall pass a reasoned award.

Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder as in force from time to time shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be **Chennai** (the place from where the contract is Issued). The Contract shall be governed by and be construed as per provisions of the laws of India. Subject to this provision 2.21.1.1 regarding ARBITRATION, the principal civil court exercising ordinary civil jurisdiction over the area where the seat

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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of arbitration is located shall have exclusive jurisdiction over any DISPUTE to the exclusion of any other court.

2.21.1.2 In case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/ Port Trusts inter se and also between CPSEs and Government Departments/Organizations (excluding disputes concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD (Administrative Mechanism for Resolution of CPSEs Disputes) as mentioned in DPE OM No. 4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018 as amended from time to time.

2.21.1.3 The cost of arbitration shall initially be borne equally by the Parties subject to the final allocation thereof as per the award/order passed by the Arbitrator.

2.21.1.4 Notwithstanding the existence of any dispute or differences and/or reference for the arbitration, the Contractor shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and expedition in a professional manner unless the dispute inter-alia relates to cancellation, termination or short-closure of the Contract by BHEL.

### **2.21.2 CONCILIATION:**

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

## TECHNICAL CONDITIONS OF CONTRACT (TCC)

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Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Procedure 2.3 enclosed in Vol 1A Part II Chapter 8. The Procedure 2.3 together with its Formats will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

The Contractor hereby agrees that BHEL may make any amendments or modifications to the provisions stipulated in the Procedure 2.3 enclosed in Vol 1A Part II Chapter 8 from time to time and confirms that it shall be bound by such amended or modified provisions of the Procedure 2.3 with effect from the date as intimated by BHEL to it.

### **2.21.3 No Interest payable to Contractor**

Notwithstanding anything to the contrary contained in any other document comprising in the Contract, no interest shall be payable by BHEL to Contractor on any moneys or balances including but not limited to the Security Deposit, EMD, Retention Money, RA Bills or the Final Bill, or any amount withheld and/or appropriated by BHEL etc., which becomes or as the case may be, is adjudged to be due from BHEL to Contractor whether under the Contract or otherwise.

### **SI No: 13: Reverse Auction**

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/vender\\_registration/pdf/Guidelines%20for%20Reverse%20Auction-2016.pdf](http://www.bhel.com/vender_registration/pdf/Guidelines%20for%20Reverse%20Auction-2016.pdf) shall be applicable.

# TECHNICAL CONDITIONS OF CONTRACT (TCC)

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## **SI No: 14**

Existing format on Monthly Performance Evaluation of Contractor, as available in Form No F-14 of Volume ID Forms and procedure stands Deleted. Form No.- F-14 (Rev 01) is enclosed.

## **SI No: 15**

Existing format on Monthly Performance Evaluation of Contractor, as available in Form No F-15 of Volume ID Forms and procedure stands Deleted. Form No.- F-15 (Rev 02) is enclosed.

## **SI No:16**

**Clause 2.22 in GCC regarding Retention Amount is revised as under:**

### **2.22 Performance Security Deposit**

2.22.1 After award of work, before commencement of work at site Vendor shall submit 5% of the contract value towards Performance Security Deposit, in the form of (a) or (b) below.

(a) CASH (DD/ Online payment), 5% of the contract Value towards Performance Security Deposit, before commencing the contract

**(or)**

(b) Recovery 5% from Each Running Bill towards Performance security deposit.

(Note: Subcontractor has to choose either Option (a) or (b) before issue of Detailed LOI).

(c) However, Performance Security Deposit on part of PVC will be recovered at the rate of 5% from every running bill towards performance security deposit.

2.22.2 Refund of Performance Security Deposit:

a) 50% of Performance Security Deposit shall be released along with the final bill.

b) Balance 50% will be released after completion of Performance Guarantee Period (i.e., after expiry of Guarantee period), provided all the defects noticed during the guarantee period have been rectified to the satisfaction of BHEL Site Engineer/ BHEL Construction Manager, and after deducting all expenses/ other amounts due to BHEL under the contract/ other contracts entered into by BHEL with them. This portion of Performance Security Deposit, amount can be released on commencement of the Guarantee Period, on submission of equivalent Bank Guarantee.

## **SI No: 17**

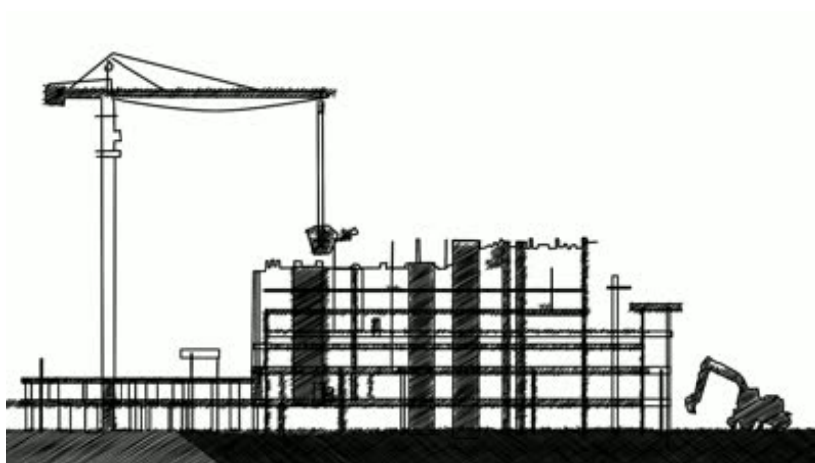
Existing format for Integrity Pact, as available in Volume ID Forms and procedure stands Deleted. Revised Format is enclosed.

**VOLUME-IA PART – II**

**CHAPTER 2-9**

In the next 117 pages as below:

| CHAPTER   | Details                                           | No. of sheets |
|-----------|---------------------------------------------------|---------------|
| CHAPTER 2 | HSE PLAN FOR SITE OPERATIONS BY SUBCONTRACTOR     | 72            |
| CHAPTER 3 | FORM 15 Rev 02                                    | 06            |
| CHAPTER 4 | FORM 14 Rev 01                                    | 06            |
| CHAPTER 5 | T&P HIRE CHARGES                                  | 13            |
| CHAPTER 6 | PROFORMA FOR BANK GUARANTEE                       | 03            |
| CHAPTER 7 | INTEGRITY PACT FORMAT                             | 5             |
| CHAPTER 8 | PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS | 11            |
| CHAPTER 9 | DRAWINGS                                          | 01            |



# **HEALTH, SAFETY and ENVIRONMENT PLAN**

for

**SITE  
OPERATIONS**

by

**SUB-  
CONTRACTORS**

**POWER SECTOR**



HEALTH, SAFETY AND ENVIRONMENT  
PLAN FOR  
SITE OPERATION by SUBCONTRACTORS

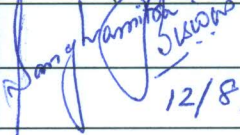
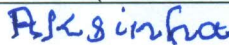
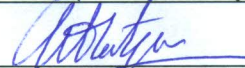
POWER SECTOR

Doc no.: HSEP: 14

REV: 00

Date: 12.08.2014

DOCUMENT ISSUE SHEET

|             | Prepared                                                                           | Reviewed                                                                           | Approved                                                                             |
|-------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Name        | Sanghamitra B. Jayant                                                              | A.K. Sinha                                                                         | Anuj Bhatnagar                                                                       |
| Designation | Dy. Manager<br>PSHQ(FQA & Safety)                                                  | GM<br>PSHQ(FQA & Safety)                                                           | ED<br>PSHQ(FQA & Safety)                                                             |
| 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 | <b>SIGNING OF MOU</b>                                                                                                                                                                                                                  |                                                                                                                                                                                       |
|              | Agree to comply to HSE requirement- Statutory and BHEL's                                                                                                                                                                               |                                                                                                                                                                                       |
| PLAN         | <b>HSE ORGANISATION</b>                                                                                                                                                                                                                |                                                                                                                                                                                       |
|              | <b>Manpower</b> <ul style="list-style-type: none"> <li>1 (one) safety officer for every 500 workers or part thereof</li> <li>1(one) safety-steward/ supervisor for every 100 workers</li> </ul> <b>Qualification</b><br>As per Cl. 7.1 | <b>HSE Roles and responsibilities</b> <ul style="list-style-type: none"> <li>Site In-charge- As per clause 7.2.1</li> <li>Safety officer- As per clause 7.2.2</li> </ul>              |
|              | <b>HSE Planning</b><br>for Man , Machinery/Equipment/Tools & Tackles                                                                                                                                                                   |                                                                                                                                                                                       |
| PROVIDE      | <b>HSE INFRASTRUCTURE</b>                                                                                                                                                                                                              |                                                                                                                                                                                       |
|              | <ul style="list-style-type: none"> <li>PPEs</li> <li>Drinking Water</li> <li>Washing Facilities</li> <li>Latrines and Urinals</li> <li>Provision of shelter for rest</li> <li>Medical facilities</li> </ul>                            | <ul style="list-style-type: none"> <li>Canteen facilities</li> <li>Labour Colony</li> <li>Emergency Vehicle</li> <li>Pest Control</li> <li>Scrapyard</li> <li>Illumination</li> </ul> |
| TRAIN        | <b>HSE TRAINING , AWARENESS &amp; PROMOTION</b>                                                                                                                                                                                        |                                                                                                                                                                                       |
|              | <b>Training</b> <ul style="list-style-type: none"> <li>Induction training</li> <li>Height work and other critical areas</li> <li>Tool Box talk &amp; Pep Talk</li> </ul>                                                               | <b>Awareness &amp; Promotion</b> <ul style="list-style-type: none"> <li>Signage</li> <li>Poster</li> <li>Banner</li> <li>Competition</li> <li>Awards</li> </ul>                       |
| COMMUNICATE  | <b>HSE COMMUNICATION</b>                                                                                                                                                                                                               |                                                                                                                                                                                       |
|              | <b>Incident Reporting</b> <ul style="list-style-type: none"> <li>Accident- Fatal &amp; Major</li> <li>Property damage</li> <li>Near Miss</li> </ul>                                                                                    | <b>Event Reporting</b> <ul style="list-style-type: none"> <li>Celebrations</li> <li>Training</li> <li>Medical camp</li> </ul>                                                         |

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

#### HOUSE KEEPING

#### WASTE MANGEMENT

#### TRAFFIC MANAGEMENT

#### ENVIRONMENTAL CONTROL

#### EMERGENCY PREPAREDNESS AND RESPONSE PLAN

## CHECKS

#### HSE AUDITS & INSPECTION

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

#### HSE PERFORMANCE EVALUATION PARAMETERS

## NON CONFORMANCE

#### PENALTY for NON CONFORMANCE

##### Refer Clause 16

##### Incremental penalty

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

For repeated fatal incident in the same 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.



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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:

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

**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<br>(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/<br>Supervisor | Safety-<br>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:
  - o Mobile cranes.
  - o Side Booms.
  - o Forklifts.
  - o Grinding machine.
  - o Drilling machine.
  - o Air compressors.
  - o Welding machine.
  - o Generator sets.
  - o Dump Trucks.
  - o Excavators.
  - o Dozers
  - o Grit Blasting Equipment.
  - o 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 selections 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<br>(Lux) |
|-----------------------------|---------------------------------------------------------|-----------------------|
| <b>A. Construction Area</b> |                                                         |                       |
| 1.                          | Outdoor areas like store yards, entrance and exit roads | 20                    |
| 2.                          | Platforms                                               | 50                    |
| 3.                          | Entrances, corridors and stairs                         | 100                   |
| 4.                          | General illumination of work area                       | 150                   |
| 5.                          | Rough work like fabrication, assembly of major items    | 150                   |
| 6.                          | Medium work like assembly of small machined parts       | 300                   |
|                             | rough measurements etc.                                 |                       |
| 7.                          | Fine work like precision assembly, precision            | 700                   |
|                             | measurements etc.                                       |                       |
| 8.                          | Sheet metal works                                       | 200                   |
| 9.                          | Electrical and instrument labs                          | 450                   |
| <b>B. Office</b>            |                                                         |                       |
| 1.                          | Outdoor area like entrance and exit roads               | 20                    |
| 2.                          | Entrance halls                                          | 150                   |
| 3.                          | Corridors and lift cars                                 | 70                    |
| 4.                          | Lift landing                                            | 150                   |
| 5.                          | Stairs                                                  | 100                   |
| 6.                          | Office rooms, conference rooms, library reading tables  | 300                   |
| 7.                          | Drawing table                                           | 450                   |
| 8.                          | Manual telephone exchange                               | 200                   |

- 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:
  - o Details of the job being intended for immediate execution.
  - o The relevant hazards and risks involved in executing the job and their control and mitigating measures.
  - o Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
  - o Recent non-compliances observed.
  - o Appreciation of good work done by any person.
  - o 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:
  - o Hazards identification and risk analysis (HIRA)
  - o Work Permit System
  - o Incident investigation and reporting
  - o Fire fighting
  - o First aid
  - o Fire-warden training
  - o EMS and OHSMS
  - o T & Ps fitness and operation

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- o Electrical safety
- o Welding, NDE & Radiological safety
- o 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 referred by subcontractor, if they so desire.

#### LIST OF OCPs

|                                                           |                                             |                                     |
|-----------------------------------------------------------|---------------------------------------------|-------------------------------------|
| Safe handling of chemicals                                | Safety in use of cranes                     | Hydraulic test                      |
| Electrical safety                                         | Storage and handling 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 and 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  $\frac{1}{4}$  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 savor, 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 ¼" 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:

- o A high level of stability.
- o A safe means of access/egress.
- o Suitable and effective service and parking brakes.
- o Windscreens with wipers and external mirrors giving optimum all round visibility.
- o Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
- o Provision of seat belts.
- o Guards on dangerous parts.
- o Driver protection - to prevent injury from overturning and from falling objects/materials.
- o Driver protection from adverse weather.
- o No vehicle shall be parked below HT/LT power lines.
- o 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.
  - o Brakes.
  - o Tires.
  - o Steering.
  - o Mirrors.
  - o Windscreen waters.
  - o Wipers.
  - o Warning signals.
  - o 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 test etc 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
  - o Fall arrestor
  - o Lifelines
  - o Safety nets
  - o Fencing and barricading
  - o Warning signage
  - o Covering of opening
  - o Proper scaffolding with access and egress.
  - o 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 equirements                                                                                                                                                                                     |
| 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 Sliding 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 sitemanagement
- 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 cause and Corrective action and Preventive action. The agenda is given below:
  - o Implementation of earlier MOM
  - o HSE performance
  - o HSE inspection
  - o HSE audit and CAPA
  - o HSE training
  - o Health check-up camp
  - o HSE planning for the erection and commissioning and installation activities in the coming month
  - o 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 recoupment 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<br>e<br>s | N<br>o | Remarks | Action |
|-----------------------------------------|-------------|--------|---------|--------|
| <b>HOUSEKEEPING</b>                     |             |        |         |        |
| Waste containers provided and used      |             |        |         |        |
| Passageways and walkways clear          |             |        |         |        |
| General neatness of working area        |             |        |         |        |
| Other                                   |             |        |         |        |
| <b>PERSONNEL PROTECTIVE EQUIPMENTS</b>  |             |        |         |        |
| Goggles; shields                        |             |        |         |        |
| Face protection                         |             |        |         |        |
| Hearing protection                      |             |        |         |        |
| Respiratory masks etc.                  |             |        |         |        |
| Safety belts                            |             |        |         |        |
| Other                                   |             |        |         |        |
| <b>EXCAVATIONS / OPENINGS</b>           |             |        |         |        |
| Openings properly covered or barricaded |             |        |         |        |
| Excavations shored                      |             |        |         |        |
| Excavations barricaded                  |             |        |         |        |
| Overnight lighting provided             |             |        |         |        |
| Other                                   |             |        |         |        |
| <b>WELDING, CUTTING</b>                 |             |        |         |        |
| Gas cylinders chained upright           |             |        |         |        |
| Cable and hoses not obstructing         |             |        |         |        |
| Fire extinguisher (s) accessible        |             |        |         |        |
| Others                                  |             |        |         |        |
| <b>SCAFFOLDING</b>                      |             |        |         |        |
| Fully decked platforms                  |             |        |         |        |
| Guard and intermediate rails in place   |             |        |         |        |
| Toe boards in place                     |             |        |         |        |
| Adequate shoring                        |             |        |         |        |
| Adequate access                         |             |        |         |        |
| Others                                  |             |        |         |        |
| <b>LADDER</b>                           |             |        |         |        |
| Extension side rails 1 m above          |             |        |         |        |
| Top of landing                          |             |        |         |        |
| Properly secured                        |             |        |         |        |



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



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|                                                                                                                       |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| Other                                                                                                                 |  |  |  |  |
| <b>WORKING AT HEIGHT</b>                                                                                              |  |  |  |  |
| Safety nets                                                                                                           |  |  |  |  |
| Safety belts                                                                                                          |  |  |  |  |
| Safety helmets                                                                                                        |  |  |  |  |
| Anchoring of safety belt to the life line rope                                                                        |  |  |  |  |
| <b>ENVIRONMENT</b>                                                                                                    |  |  |  |  |
| Lubricant waste/engine oils properly dispose.                                                                         |  |  |  |  |
| Waste from Canteen, offices, sanitation etc. disposed properly.                                                       |  |  |  |  |
| Disposal of surplus earth, stripping materials, expired batteries, oily rags and combustible materials done properly. |  |  |  |  |
| <b>HEALTH CHECKS</b>                                                                                                  |  |  |  |  |
| Hygienic conditions at labor camps O.K.                                                                               |  |  |  |  |
| Availability of first-aid facilities                                                                                  |  |  |  |  |
| Proper sanitation at site, office & labor camps.                                                                      |  |  |  |  |
| Arrangement of medical facilities.                                                                                    |  |  |  |  |
| Measures for dealing with illness.                                                                                    |  |  |  |  |
| Availability of potable drinking water for workmen & staff.                                                           |  |  |  |  |
| Provision of crèches for children.                                                                                    |  |  |  |  |
|                                                                                                                       |  |  |  |  |



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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<br>(Reaffirmed 2003)            | Code of Practice for safety and health requirements in Electric and Gas Welding and Cutting operations.                   |
| (2)   | IS: 1179-1967<br>(Reaffirmed 2003)            | Specification for Equipment for Eye & Face protection during welding.                                                     |
| (3)   | IS : 1989 (Part 2):1986<br>(Reaffirmed 1997)  | Specification for Leather Safety Boots & Shoes                                                                            |
| (4)   | IS:2925 – 1984<br>(Reaffirmed 2010)           | Specification for Industrial Safety Helmets                                                                               |
| (5)   | IS:3521 : 1999<br>(Reaffirmed 2002)           | Industrial Safety Belts & Harnesses-Specification                                                                         |
| (6)   | IS:3646(Part II) – 1966<br>(Reaffirmed 2003)  | Code of Practice for Interior Illumination                                                                                |
| (7)   | IS:3696 (Part I) – 1987<br>(Reaffirmed 2002)  | Safety Code for Scaffolds and Ladders                                                                                     |
| (8)   | IS: 3696(Part 2) : 1991<br>(Reaffirmed 2002 ) | Scaffolds and Ladders-Code of Safety                                                                                      |
| (9)   | IS:3786 – 1983<br>(Reaffirmed 2002)           | Method for Computation of Frequency and Severity Rates for Industrial Injuries and Classification of Industrial Incidents |
| (10)  | IS:4770 : 1991<br>(Reaffirmed 2006)           | Rubber Gloves – Electricals purposes-Specification                                                                        |
| (11)  | IS:4912 : 1978<br>(Reaffirmed 2002)           | Safety Requirements for Floor and Wall Openings, Railings and Toe Boards                                                  |
| (12)  | IS: 5983 – 1980<br>(Reaffirmed 2002)          | Specification for Eye-Protectors                                                                                          |
| (13)  | IS:6519 – 1971<br>(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<br>(Re affirmed 1996)    | Specification for Industrial Safety Gloves<br>Leather and Cotton Gloves                                                   |
| (16)  | IS:8519 – 1977<br>(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<br>(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<br>(Reaffirmed 2003)          | Natural and Man-made Fiber Rope Slings-Recommendations on Safe working loads.                   |
| (21) | IS:11057 – 1884<br>(Reaffirmed 2001)       | Specification for Industrial Safety Nets                                                        |
| (22) | IS:12254:1993<br>(Reaffirmed 2002)         | Polyvinyl Chloride (PVC) Industrial Boots-Specification                                         |
| (23) | IS:13367(Part 1):1992<br>(Reaffirmed 2003) | Safe Use of Cranes-Code of Practice                                                             |
| (24) | IS:14166:1994<br>(Reaffirmed 2002)         | Respiratory Protective Devices-Full Face Masks Specification                                    |
| (25) | IS:14746 : 1999<br>(Reaffirmed 2003)       | Respiratory Protective Devices-Half Masks and Quarter Masks - Specification                     |
| (26) | IS : 15397 :2003<br>(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

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|                          |  |
|--------------------------|--|
| 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

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| Sl.No. | Item                                                                                                                                               | No.<br>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

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|                          |  |
|--------------------------|--|
| 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             |
|--------------------------------------------|-------------------------|
| <b><u>General Physical Examination</u></b> |                         |
| Height                                     | :                       |
| Weight                                     | :                       |
| BMI                                        | :                       |
| Built And nourishment                      | :                       |
| Pallor                                     | :                       |
| Temperature                                | :                       |
| Chest Expansion                            | : Inspiration Expansion |
| Lymph Node Enlargement                     | :                       |
| <b><u>Ear, Nose, Throat</u></b>            | :                       |
| Ear                                        | :                       |
| Nose                                       | :                       |
| Throat                                     | :                       |

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

FORMAT NO: HSEP:13-F02

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

Signature of the examining doctor

**POWER SECTOR****HSE INDUCTION TRAINING**

FORMAT NO: HSEP:13-F03

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

| Sl No. | Name | Designation | Organisation | Signature |
|--------|------|-------------|--------------|-----------|
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
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|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |
|        |      |             |              |           |

Signature of Training co-ordinator :

|                                                                                   |                      |                                                            |
|-----------------------------------------------------------------------------------|----------------------|------------------------------------------------------------|
|  | <b>POWER SECTOR</b>  | FORMAT NO: HSEP:13-F04<br>REV NO.: 00<br>PAGE NO. 01 OF 01 |
|                                                                                   | <b>TOOL-BOX TALK</b> |                                                            |

|                               |  |
|-------------------------------|--|
| <b>Name of Site :</b>         |  |
| <b>Sub-Contractors Name :</b> |  |
| <b>Date :</b>                 |  |

| 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

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|                          |  |
|--------------------------|--|
| 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

REV NO.: 00

PAGE NO. 02 OF 03

| 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

PAGE NO. 03 OF 03

| 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?       |     |    |    |         |
|         | <b>Total Number of NO:</b>                                                                       |     |    |    |         |
|         | <b>Total Number of NA:</b>                                                                       |     |    |    |         |
|         | <b>% Compliance :</b>                                                                            |     |    |    |         |

Signature of Site I/C of subcontractor :

|                                                                                   |                                     |                                                            |
|-----------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------|
|  | <b>POWER SECTOR</b>                 | FORMAT NO: HSEP:13-F10<br>REV NO.: 00<br>PAGE NO. 01 OF 02 |
|                                                                                   | <b>INSPECTION OF HEIGHT WORKING</b> |                                                            |

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

| 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.                                     |                      |         |
|         | <b>ACCESS/EGRESS</b>                                                                                   |                      |         |
| 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

REV NO.: 00

PAGE NO. 02 OF 02

| Sl. No. | Descriptions                                                                  | Observation<br>(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.                                 |                         |         |
|         | <b>Housekeeping</b>                                                           |                         |         |
| 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. |                         |         |
|         | <b>PPE And Safety Devices</b>                                                 |                         |         |
| 1       | Use of safety helmet, safety belts ensured for all workers                    |                         |         |
| 2       | Anchoring points provided at all places of work.                              |                         |         |
| 3       | Common lifeline provided wherever linear movement at height is required.      |                         |         |
| 4       | Safety nets are use wherever required.                                        |                         |         |
| 5       | Proper fall arrest system is deployed at critical workplaces.                 |                         |         |
| 6       | Crawler boards/Safety system or works on fragile roof are used.               |                         |         |

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<br>e<br>s | N<br>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  
PAGE NO. 02 OF 02

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

Signature of Site I/C of subcontractor :

|                                                                                   |                                              |                                                            |
|-----------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|
|  | <b>POWER SECTOR</b>                          | FORMAT NO: HSEP:13-F12<br>REV NO.: 00<br>PAGE NO. 01 OF 02 |
|                                                                                   | <b>INSPECTION OF ELECTRICAL INSTALLATION</b> |                                                            |

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

| Sr. No.  | Contents                                                                                             | Yes/No | Remarks |
|----------|------------------------------------------------------------------------------------------------------|--------|---------|
| <b>A</b> | <b>Cable</b>                                                                                         |        |         |
| 1.       | Whether the condition of cable is checked?                                                           |        |         |
| 2.       | Are cables received from other sites checked for insulation resistance before putting them into use? |        |         |
| 3.       | Are all main cables taken either underground / overhead?                                             |        |         |
| 4.       | Are welding cables routed properly above the ground?                                                 |        |         |
| 5.       | Are welding and electrical cables overlapping?                                                       |        |         |
| 6.       | Is any improper joining of cables/wires prevailing at site?                                          |        |         |
| <b>B</b> | <b>DBs/SDBs</b>                                                                                      |        |         |
| 1.       | Is earth conductor continued 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?                 |        |         |
| <b>C</b> | <b>ELCB</b>                                                                                          |        |         |
| 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

REV NO.: 00

PAGE NO. 02 OF 02

| Sr. No.  | Contents                                                                                                                | Yes/No | Remarks |
|----------|-------------------------------------------------------------------------------------------------------------------------|--------|---------|
| 3.       | Are the ELCB numbered and tested periodically & test results recorded in a logbook countersigned by a competent person? |        |         |
| <b>D</b> | <b>Grounding</b>                                                                                                        |        |         |
| 1.       | Is natural earthing ensured at the source of power (main DB at Generator or Transformer)?                               |        |         |
| 2.       | Whether the continuity and tightness of the earth conductor are checked?                                                |        |         |
| 3.       | Mention the gauge of the earth conductor used at the site.                                                              |        |         |
| 4.       | Mention the value of Earth Resistance.                                                                                  |        |         |
| <b>E</b> | <b>Electrically operated Machines or Accessories.</b>                                                                   |        |         |
| 1.       | Whether the plug top is provided everywhere.                                                                            |        |         |
| 2.       | Are all metal parts of electrical equipment and light fittings / accessories grounded?                                  |        |         |
| 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

PAGE NO. 01 OF 02

**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 Slings 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.

1 Copy to Site Construction Manager(BHEL)

|                                                                                   |                                                                                 |                                                            |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------|
|  | <b>POWER SECTOR- HQ</b>                                                         | FORMAT NO: HSEP:13-F15<br>REV NO.: 00<br>PAGE NO. 01 OF 01 |
|                                                                                   | <b>Incident Report</b><br>(To be submitted within 24 hours of time of incident) |                                                            |

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<br>(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.  | Unwanted 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 and 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: \_\_\_\_\_

(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: \_\_\_\_\_

## 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)

**Original at BHEL site****Second Copy – BHEL SAFETY****Third Copy : Contractor**

| Project |                                                                                                                                                                                                                                                                                                                                    | Vendor         |           |                | Package/Unit                                                                                                                               |                                                           |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                                                                                                          | Classification | Max Score | Score Obtained | Measurement Key/Scheduled date                                                                                                             | Supporting Documents`                                     |
| #1.01   | Cumulative number of days in the month, the nominated Quality Officer or his authorised nominee was not available                                                                                                                                                                                                                  | QUALITY        | 1.5       |                | Quality Officer or his authorised nominee should be available for all the days of working at site                                          | Daily Log Book entry/Incident Registers/letter references |
| #1.02   | Number of instances of non- compliance wrt FQP, Standard Drawings, Specifications, E&C Manuals etc.                                                                                                                                                                                                                                | QUALITY        | 1.5       |                | No deviation from FQP, Standard Drawings, Specifications, E&C Manuals etc. is allowed without BHEL Engineer's approval.                    | Daily Log Book entry/Incident Registers/letter references |
| #1.03   | Percentage submission of test certificates for batches of welding electrodes, cement, sand, aggregate, consumable, Paints etc. as applicable for this month OR In case of MM & MH package, monthly checks for Storage/Preservation of material.                                                                                    | QUALITY        | 1         |                | Submission of 100% Test certificates for materials as per FQP is mandatory. MM & MH package: Storage/Preservation as per manual/procedure. | Daily Log Book entry/Incident Registers/letter references |
| #1.04   | Number of incidences of improper storage & preservation (not in accordance to the guidelines of BHEL MUs or approved FQP) of materials, consumables (viz. gases, welding electrodes & fluxes, fuel etc.) & bought-out items (paints, fasteners etc.) under the custody of the contractor                                           | QUALITY        | 1         |                | Total number of non-compliances                                                                                                            | Daily Log Book entry/Incident Registers/letter references |
| #1.05   | Rework/ Rejection instances in a month necessitated due to deviation from Standard Drawings /Specifications /Manuals /E&C procedures /FQPs or due to Poor Workmanship by contractor                                                                                                                                                | QUALITY        | 2         |                | Reworks/ Rejection should be as minimum as possible. Total number of reworks/ rejections due to reasons attributable to contractor.        | Daily Log Book entry/Incident Registers/letter references |
| #1.06   | Delay in preparation & submission of signed protocols / log sheets / site register / NDT test reports as per approved FQP/ Qualified Welder List along with photocopies of Welder ID cards / Welder Performance Evaluation records etc. in the month OR in case of MM / MH package reconciliation statement / verification report. | QUALITY        | 1         |                | Within 2 days of measurements taken or within first 3 working days of next month, as advised by BHEL Engineer                              | Daily Log Book entry/Incident Registers/letter references |
| #1.07   | Number of instances for Major equipment/product failure due to negligence/improper work/poor workmanship by contractor                                                                                                                                                                                                             | QUALITY        | 1         |                | No such event should happen                                                                                                                | Daily Log Book entry/Incident Registers/letter references |
| #1.08   | Total number of complaints received in the month on the quality of finish / aesthetics                                                                                                                                                                                                                                             | QUALITY        | 1         |                | Total number of non-compliances                                                                                                            | Daily Log Book entry/Incident Registers/letter references |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

| Project |                                                                                                                                                                                                                                                                                                                                                                                                             | Vendor         |           |                | Package/Unit                                                                                                                                                                                                                                                             |                                                           |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                                                                                                                                                                                   | Classification | Max Score | Score Obtained | Measurement Key/Scheduled date                                                                                                                                                                                                                                           | Supporting Documents`                                     |
| #2.01   | Cumulative number of days of delay in submission of Plan FOR THE MONTH supported by deployment plan of Major T&Ps and Manpower (as per Form F-14) and relevant construction/layout drawings - like A4 plan / elevation views of plan status for structures / pressure parts/Civil Works, Piping isometrics for piping, Layout / PID / System reference sketch, Unloading / storage plans etc.as applicable. | PERFORMANCE    | 5         |                | Number of days delayed from second working day of the month                                                                                                                                                                                                              | Daily Log Book entry/Incident Registers/letter references |
| #2.02   | Percentage of timely submission of Daily Reports for Progress of work, Resources, Consumables etc.                                                                                                                                                                                                                                                                                                          | PERFORMANCE    | 1.5       |                | Percentage of timely submission of daily reports/ Scheduled date is successive next day for each day                                                                                                                                                                     | Daily Log Book entry/Incident Registers/letter references |
| #2.03   | Number of days delayed for submission of FQP log sheets / protocols / Monthly Progress Reports for the work executed during the month under measurement                                                                                                                                                                                                                                                     | PERFORMANCE    | 1.5       |                | Number of days delayed/Scheduled date is first 2 working days of next month                                                                                                                                                                                              | Daily Log Book entry/Incident Registers/letter references |
| #2.04   | Shortfall attributable to contractor w.r.t. Plan as per Form-14 for the subject month                                                                                                                                                                                                                                                                                                                       | PERFORMANCE    | 35        |                | Percentage of shortfall to be calculated w.r.t. Total planned target for the month as per part-A of F-14. If more than one work has been planned in a month then Weightages of works shall be assigned at the time of plan to arrive at plan vs achievement calculation. | Progress review formats                                   |
| #2.05   | Number of days delayed in submission of Running bills with complete supporting documents (including updated reconciliation statement of BHEL issued material) for the month                                                                                                                                                                                                                                 | PERFORMANCE    | 2         |                | Number of days delayed / Scheduled date is 7th day of next month                                                                                                                                                                                                         | Daily Log Book entry/Incident Registers/letter references |
| #2.06   | Number of times the Top Management of contractor did not respond to critical issues of site, for the month                                                                                                                                                                                                                                                                                                  | PERFORMANCE    | 1         |                | Total number of instances                                                                                                                                                                                                                                                | Daily Log Book entry/Incident Registers/letter references |
| #2.07   | Cumulative number of days in the month the works were stopped / refused on interpretation of contract clauses/scope due to tendency of taking undue advantage by interpreting contract clauses in their favour                                                                                                                                                                                              | PERFORMANCE    | 2         |                | Cumulative number of days lost                                                                                                                                                                                                                                           | Daily Log Book entry/Incident Registers/letter references |
| #2.08   | Number of times rework was refused by contractor                                                                                                                                                                                                                                                                                                                                                            | PERFORMANCE    | 1         |                | Total number of non-compliances                                                                                                                                                                                                                                          | Daily Log Book entry/Incident Registers/letter references |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

| Project |                                                                                                                                                                                                                                                                                                             | Vendor                        |           |                | Package/Unit                                                                        |                                                           |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|----------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                                                                                   | Classification                | Max Score | Score Obtained | Measurement Key/Scheduled date                                                      | Supporting Documents`                                     |
| #2.09   | Cumulative number of days in the month recording / logging was not done in daily log / history register / hindrance register / soft form in a PC maintained at BHEL Site Office                                                                                                                             | PERFORMANCE                   | 1         |                | Cumulative number of days recording or logging was not done / all days of the month | Daily Log Book entry/Incident Registers/letter references |
| #3.01   | Number of days of non-availability of required Manpower including supporting staff as per plan submitted in F-14 for the month.                                                                                                                                                                             | RESOURCES                     | 7         |                | Cumulative number of days Sufficient Manpower was not available as per Plan in F-14 | Daily Log Book entry/Incident Registers/letter references |
| #3.02   | Number of days of non-availability of required T&P as per plan submitted in F-14 for the month.                                                                                                                                                                                                             | RESOURCES                     | 7         |                | Cumulative number of days Sufficient T&P was not available as per Plan in F-14      | Daily Log Book entry/Incident Registers/letter references |
| #3.03   | Cumulative number of major instances in the month hampering / affecting progress of work due to breakdown or non-availability of major T&P and MME for the work, under the scope of Contractor                                                                                                              | RESOURCES                     | 3         |                | Cumulative number of instances                                                      | Daily Log Book entry/Incident Registers/letter references |
| #3.04   | Cumulative number of major instances in the month hampering / affecting progress of work due to non-availability of Consumables/ use of improper consumables under the scope of contractor                                                                                                                  | RESOURCES                     | 3         |                | Cumulative number of instances                                                      | Daily Log Book entry/Incident Registers/letter references |
| #4.01   | Number of non-compliances during the month for Statutory requirements like validity of Labour Licence, Insurance Policy, Labour Insurance, PF, BOCW Compliance etc. and any other applicable laws/ Regulation, Electrical Licence, T&P fitness certificate, Contractors' All Risk Policy etc. as applicable | SITE INFRASTRUCTURE & SERVICE | 1         |                | Total number of non-compliances                                                     | Daily Log Book entry/Incident Registers/letter references |
| #4.02   | Cumulative number of days in a month poor illumination is reported at storage area, erection area, pre-assembly area and other designated areas by BHEL site.                                                                                                                                               | SITE INFRASTRUCTURE & SERVICE | 0.5       |                | Total number of non-compliances/random checks                                       | Daily Log Book entry/Incident Registers/letter references |
| #4.03   | Cumulative number of days of non-availability of well-maintained toilets facilities for workers (separate for men and women) and non-availability of potable drinking water stations for workers in specified areas.                                                                                        | SITE INFRASTRUCTURE & SERVICE | 1         |                | Total number of non-compliances/random checks                                       | Daily Log Book entry/Incident Registers/letter references |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

| Project |                                                                                                                                                                                                                                                                                                                                                                       | Vendor                        |           |                | Package/Unit                                                                             |                                                                                |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|----------------|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                                                                                                                                             | Classification                | Max Score | Score Obtained | Measurement Key/Scheduled date                                                           | Supporting Documents`                                                          |
| #4.04   | Total number of instances in the month, Housekeeping NOT attended to in spite of instructions by BHEL -i.e. removal / disposal of surplus earth / debris / scrap / unused / surplus cable drums / other electrical items / surplus steel items / packing materials, thrown out scrap like weld butts, cotton waste etc. from the working area to identified locations | SITE INFRASTRUCTURE & SERVICE | 2         |                | Total number of non-compliances/random checks                                            | Daily Log Book entry/Incident Registers/letter references                      |
| #4.05   | Total number of instances in a month, Site Office with reasonably good facilities including enough nos. of computers and printers etc. for use by office and supporting staff was not made available/maintained.                                                                                                                                                      | SITE INFRASTRUCTURE & SERVICE | 0.5       |                | No discrepancy during regular or surprise visits                                         | Photograph and report of the Engineer                                          |
| #5.01   | Number of days delayed in making labour payments for the last month                                                                                                                                                                                                                                                                                                   | SITE FINANCE                  | 2         |                | Number of days delayed / Scheduled date is 7th day of next month                         | Daily Log Book entry/Incident Registers/letter references                      |
| #5.02   | Number of complaints from labour/ sub supplier/ sub-contractor for non-receipt of payments from contractor                                                                                                                                                                                                                                                            | SITE FINANCE                  | 1.5       |                | Total number of complaints or reporting                                                  | Daily Log Book entry/Incident Registers/letter references                      |
| #5.03   | Number of times the site operations were hampered for want of funds at the disposal of site-in-charge.                                                                                                                                                                                                                                                                | SITE FINANCE                  | 1.5       |                | Total number of non-compliances                                                          | Daily Log Book entry/Incident Registers/letter references                      |
| #6.01   | Cumulative number of days in a month the nominated Safety Officer was not available                                                                                                                                                                                                                                                                                   | HSE & SA                      | 1         |                | Safety Officer should be available for all the days                                      | Daily Log Book entry/Incident Registers/letter references                      |
| #6.02   | Shortfall in number of weekly safety meetings in the month conducted or attended by the Safety Officer                                                                                                                                                                                                                                                                | HSE & SA                      | 0.5       |                | Safety meetings to be held every week                                                    | Copy of Minutes of meeting                                                     |
| #6.03   | Level of compliance w.r.t decisions taken in previous Safety meetings                                                                                                                                                                                                                                                                                                 | HSE & SA                      | 0.5       |                | Number of consolidated issues discussed in Safety meetings                               | Copy of Minutes of meeting, Non-compliance intimation documents from BHEL site |
| #6.04   | Delay in submission of monthly report on safety (including electrical safety for equipment & personnel etc.) in the prescribed form                                                                                                                                                                                                                                   | HSE & SA                      | 1         |                | Number of days delayed/Scheduled date is third working day of next month                 | Daily Log Book entry/Incident Registers/letter references                      |
| #6.05   | Number of days taken for lodging FIRs from date of occurrence/notice of incident of theft / accident etc.                                                                                                                                                                                                                                                             | HSE & SA                      | 0.5       |                | Number of days delayed/Scheduled date is within 24 Hrs of occurrence/notice of incidence | Copy of FIR lodged by Contractor                                               |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

| Project |                                                                                                                                                                                                                                                                         | Vendor         |           |                | Package/Unit                                                                 |                                                                   |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|------------------------------------------------------------------------------|-------------------------------------------------------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                                               | Classification | Max Score | Score Obtained | Measurement Key/Scheduled date                                               | Supporting Documents`                                             |
| #6.06   | Number of times written(email, letters etc.) warning issued for non-availability/ use of improper Fall protection and rescue arrangement as lifeline, fall arrestors, safety net, hand-railings, covered floors, man-basket, rescue basket & kit etc. by the contractor | HSE & SA       | 2         |                | Total number of non-compliances                                              | Daily Log Book entry/Incident Registers/letter references         |
| #6.07   | Number of times punitive fines imposed for unsafe practices as per contract like non-availability/use of PPEs as safety shoes, helmets, goggles, gloves, lifeline, safety belts etc.                                                                                    | HSE & SA       | 1         |                | Total number of non-compliances                                              | Non-compliance intimation documents from BHEL site                |
| #6.08   | Percentage compliance to Emergency preparedness and response plan: Portable Fire-extinguishers, Buckets, Fire-wardens, display of emergency numbers, mock-drills, Hazard Identification and Risk Assessment(HIRA) etc.                                                  | HSE & SA       | 1         |                | Compliance should be 100% as per HSE Plan or as finalized in Safety Meetings | Non-compliance intimation documents from BHEL site                |
| #6.09   | Number of times the agency has defaulted on display of safety posters / safety slogans / safety barriers/emergency numbers etc. in identified areas                                                                                                                     | HSE & SA       | 0.5       |                | Total number of instances                                                    | Non-compliance intimation documents from BHEL site                |
| #6.10   | Non compliances observed during HSE and Safety Audit                                                                                                                                                                                                                    | HSE & SA       | 0.5       |                | Total number of non-compliances                                              | Non-compliance intimation documents from BHEL site, Audit Reports |
| #6.11   | Cumulative number of days in the month, non-availability of First Aid Kit, First Aider & Emergency Vehicles/Ambulance.                                                                                                                                                  | HSE & SA       | 0.5       |                | Cumulative number of days                                                    | Non-compliance intimation documents from BHEL site                |
| #6.12   | Number of days taken for submission of Root Cause analysis (RCA) for the accident from the cut-off date intimated by BHEL for submission of RCA                                                                                                                         | HSE & SA       | 0.5       |                | Number of days delayed/Scheduled date is cut-off date intimated by BHEL      | Daily Log Book entry/Incident Registers/letter references         |
| #6.13   | Non conductance of training (induction, job specific, height work etc.), tool box meeting and health check-up as per Contract requirements                                                                                                                              | HSE & SA       | 0.5       |                | Number of incidences of non-conductance during the month                     | Daily Log Book entry/Incident Registers/letter references         |
| Total   |                                                                                                                                                                                                                                                                         |                | 100       |                |                                                                              |                                                                   |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

## MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

Form No.: F-15 (Rev 02)

Page 6 of 6

| Project |                                                                                                                                                                                                                                                   | Vendor         |           |                | Package/Unit                   |                       |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------------|--------------------------------|-----------------------|
| SL      | Parameter for Measurement                                                                                                                                                                                                                         | Classification | Max Score | Score Obtained | Measurement Key/Scheduled date | Supporting Documents` |
|         | Less Deduction in Score Due to Major Accidents (Fatal, Permanent Disability or bodily injury by which person injured is prevented to resume to work within 48 hours or more after accident,, Major Damage to Equipment etc.) @ 3 points/ accident |                |           |                |                                |                       |
|         | Less Deduction in Score Due to Minor Accidents(All Others) @ 1 point/ accident                                                                                                                                                                    |                |           |                |                                |                       |
|         | Less Deduction in Score Due to not Maintaining of Labour Colony (if applicable) as per BHEL HSE policy @2 points in a month on verification any day                                                                                               |                |           |                |                                |                       |
|         | Final Score                                                                                                                                                                                                                                       |                |           |                |                                |                       |

| Performance Score Summary for the Month | Total Score | Score Obtained |
|-----------------------------------------|-------------|----------------|
| QUALITY                                 | 10          |                |
| PERFORMANCE                             | 50          |                |
| RESOURCES                               | 20          |                |
| SITE INFRASTRUCTURE & SERVICE           | 5           |                |
| SITE FINANCE                            | 5           |                |
| HSE & SA                                | 10          |                |
| OTHERS (deductions if any)              | 0           |                |
| <b>TOTAL</b>                            | <b>100</b>  |                |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor



|                                                                                             |                                                  |                           |
|---------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------|
| <br>PSSR | <b>MONTHLY PLAN &amp; REVIEW WITH CONTRACTOR</b> | Page <b>2</b> of <b>6</b> |
| Name of Project                                                                             | Contract No.                                     |                           |
| Name of Work                                                                                | Name of Contractor                               |                           |

**PART- A: Contd.....**

**Note 1: In addition to the work planned as per Col. 'A', Contractor shall also make full efforts to minimize the 'Cumulative shortfall attributable to contractor upto the month' as mentioned in Col. 'B' by enhancing its resources, so as to achieve the completion of activities as per agreed schedule. In case contractor is not able to execute the entire shortfall, then BHEL 'Engineer in-charge', shall decide the priority of work to be executed and it shall be binding on the contractor.**

**Note 2: Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month =  $[(\Sigma E - \Sigma B) / (\Sigma A - \Sigma D)] \times 100$**   
 In case,  $(\Sigma E - \Sigma B)$  is negative, then it shall be treated as zero percent."

**Note 3: Form 14 should include all items being planned in the current month, and all items against which shortfall was attributable to contractor till previous month. However, for practical reason, if it is not possible to mention some of the items in Form-14 being planned to be executed in this month, then also value of such items shall necessarily be included in calculation of Total Value.**

**Note 4: In case reason for shortfall attributable to contractor is w.r.t. T&P and Manpower, it should be in conformity with Part B1 and B2.**

BHEL  
 (Sign with name, designation and date)

CONTRACTOR  
 (Sign with name, designation and date)

|                 |  |                    |
|-----------------|--|--------------------|
| Name of Project |  | Contract No.       |
| Name of Work    |  | Name of Contractor |

**PART – B-1: PLAN/REVIEW OF DEPLOYMENT OF MAJOR T&Ps FOR THE MONTH OF ..... Date of Plan/ Review.....**

**CONTRACTOR'S SCOPE: -**

[illegible]

Note: In case,  $E > B$ , it shall be considered as  $E = B$ . Similarly, in case  $D > A$ , it shall be considered as  $D = A$ .  
Percentage of T&P Deployed =  $\Sigma F \times 100$

**BHIEL SCOPE: -**

| SN. | PLAN                                                       |     |                             | DEPLOYMENT STATUS        |                                    |                                                           |
|-----|------------------------------------------------------------|-----|-----------------------------|--------------------------|------------------------------------|-----------------------------------------------------------|
|     | Major T&P to be deployed as per work planned for the month | QTY | Deployment Period (in days) | Actual Deployed Quantity | Actual Deployment Period (in days) | REMARKS<br>(Works affected due to non-deployment of T&Ps) |
|     |                                                            |     |                             |                          |                                    |                                                           |

**BHEL**  
(Sign with name, designation and date)

CONTRACTOR  
(Sign with name, designation and date)

|                                                                                             |                                                  |                           |
|---------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------|
| <br>PSSR | <b>MONTHLY PLAN &amp; REVIEW WITH CONTRACTOR</b> | Page <b>4</b> of <b>6</b> |
| Name of Project                                                                             | Contract No.                                     |                           |
| Name of Work                                                                                | Name of Contractor                               |                           |

**PART – B-2: PLAN/ REVIEW OF DEPLOYMENT OF MANPOWER FOR THE MONTH OF .....**

Date of Plan/ Review .....

**CONTRACTOR'S SCOPE: -**

| SN. | Area of Work | Category of Labour | No. of Labour required as per category | Deployment Period (in days) | No. of Labour actually deployed | Actual Deployment Period (in days) | REMARKS<br>(Works affected due to non-availability of labour) |
|-----|--------------|--------------------|----------------------------------------|-----------------------------|---------------------------------|------------------------------------|---------------------------------------------------------------|
|     |              |                    | A                                      | B                           | C                               | D                                  |                                                               |
|     |              |                    |                                        |                             |                                 |                                    |                                                               |

 Percentage of Manpower Deployed =  $100 \times \Sigma(CxD) / \Sigma(AxB)$ 

BHEL

(Sign with name, designation and date)

CONTRACTOR

(Sign with name, designation and date)

|                 |  |                    |
|-----------------|--|--------------------|
| Name of Project |  | Contract No.       |
| Name of Work    |  | Name of Contractor |

**PART – C: PLAN(PHYSICAL) FOR THE NEXT MONTH i.e. ....**

[illegible]

Note 1: Planned quantity should be based on available/ expected fronts/ inputs in the next month

Note 2: “Original Planned Quantity” shall be as per latest jointly agreed programme between BHEL and Contractor before commencement of work or at the time of latest Time Extension, as the case may be.

**BHEL**  
(Sign with name, designation and date)

CONTRACTOR  
(Sign with name, designation and date)

|                                                                                             |                                                  |  |                           |
|---------------------------------------------------------------------------------------------|--------------------------------------------------|--|---------------------------|
| <br>PSSR | <b>MONTHLY PLAN &amp; REVIEW WITH CONTRACTOR</b> |  | Page <b>6</b> of <b>6</b> |
|                                                                                             |                                                  |  |                           |

|                 |  |                    |  |
|-----------------|--|--------------------|--|
| Name of Project |  | Contract No.       |  |
| Name of Work    |  | Name of Contractor |  |

**PART – D: REASONS FOR SHORTEALL ATTRIBUTABLE TO BHEL IN RESPECT OF PLAN FOR THE MONTH.....**

| SN. | Description of Work<br>(from Part-A) | Quantities Affected    |                             | Reasons for Shortfall attributable to<br>BHEL | Agency responsible for<br>reasons for Shortfall | Remarks (Supporting Documents in<br>respect of agency responsible) |
|-----|--------------------------------------|------------------------|-----------------------------|-----------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------|
|     |                                      | (Physical<br>Quantity) | Unit of<br>Measu-<br>rement |                                               |                                                 |                                                                    |
| 1   | 2                                    | 3                      | 4                           | 5                                             | 6                                               | 7                                                                  |
|     |                                      |                        |                             |                                               |                                                 |                                                                    |

Note1: Reasons for shortfall shall include non-availability of fronts/ drawings/ materials/ T&P (BHEL Scope)/ clearances etc. and other hindrances for which contractor is not responsible.

Note2: Agency responsible may be BHEL Site/ MUs/ Design Centre/ BHEL Customer/ other Contractors etc.

BHEL  
(Sign with name, designation and date)



POWER SECTOR (FIN.) HQRS

MOST IMPORTANT

FROM: SB Narang  
GM/FINANCE

FOR: AS PER DISTRIBUTION LIST

NO. PW:FM:FAX:T&P HIRE:2017-19  
Dated 1<sup>st</sup> June, 2017

Subject: REVISION OF HIRE CHARGES ON ISSUE OF CAPITAL  
TOOLS & PLANTS

The rates of hire charges for Capital Tools and Plants and Operator's charges circulated vide our letter no. PWR:FM:T&P Hire 2015-17 dated 14.5.2015 were valid up to 31.5.2017. The Rates effective from 1.06.2017 are enclosed as detailed below:

- (i) **Annexure C1 & T1:** Rates of hire charges applicable to contractors working for BHEL.
- (ii) **Annexure C2 & T2:** Rates of hire charges applicable to outside agencies other than contractors working for BHEL.

2. The Crane Operator's charges will be as follows:

- A) If BHEL operator is utilised Rs. 6,300/- (Rupees Sixty-Three Hundred only) per day of 8 hours. For services less than 4 hours, half of per day rate will be charged. For services for 4 hours or more but up to 8 hours, full day rate will be charged. Overtime Allowance (OTA) will be charged at double the rate on hourly basis.
- B) If vendor sourced operator is provided, the rates shall be the actual cost to BHEL with 30% overheads.

- 3. The hire charges of Capital Tools & Plants are exclusive of operating expenses e.g. fuel & consumables. As such all OPERATING EXPENSES WILL BE EXTRA TO USER'S ACCOUNT.
- 4. All other terms and conditions / aspects governing the "Issue of T & P on Hire" will remain the same as already circulated vide our letter of even number dated 22.1.1992 (copy enclosed).
- 5. The revised rates will be effective from 1.06.17 and will remain valid upto 31.5.2019 and will be subject to revision thereafter.
- 6. For any additional item, the rates of hire charges will be worked out jointly by PS-MSX and Finance (HQ) on receipt of specific request (with necessary details) from the Region.

Encl.: As above

  
(SB Narang)  
GM (Fin)

**Annexure C1**

DATE:01/06/2017

**REVISED RATES OF T&P HIRE CHARGES FOR CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS**

| SL NO.    | ITEM DESCRIPTION                                              | Revised rates (Rs./Hour) valid from 01/06/2017 to |
|-----------|---------------------------------------------------------------|---------------------------------------------------|
| <b>I.</b> | <b>CRANES :-</b>                                              |                                                   |
| 1         | Portal Gantry Crane 500T                                      | 20390.00                                          |
| 2         | 100MT Crawler Crane ZOOMLION CRANE-QUY-100                    | 11370.00                                          |
| 3         | Heavy Lift Crawler Crane 600MT Class DEMAG Model CC2800       | 56290.00                                          |
| 4         | PORTAL CRANE, 360T                                            | 15600.00                                          |
| 5         | 600MT Class Crawler Crane- Manitowoc Model 18000-UPGRADED     | 60780.00                                          |
| 6         | 600MT Class Crawler Crane- Liebherr Model LR1600-2 (Upgraded) | 68610.00                                          |
| 7         | CRAWLER CRANE FMC/LINKBELT 718, 250T (WITH RINGER)            | 33990.00                                          |
| 8         | CRAWLER CRANE FMC/LINKBELT 718, 250T (WITH-OUT RINGER)        | 21240.00                                          |
| 9         | MANITOWOC M-250T TRUCK CRANE                                  | 30590.00                                          |
| 10        | 270 MT Class Crawler Crane- Manitowoc Model 2250              | 31660.00                                          |
| 11        | 300MT Crane Crawler Crane LIEBHERR Model LR-1350/1            | 26390.00                                          |
| 12        | 250MT Class Mid range Crawler Crane- Kobelco Model CKE2500-2  | 21920.00                                          |
| 13        | LINKBELT LS- 248H CRAWLER CRANE (180T)                        | 16990.00                                          |
| 14        | MANITOWAC MODEL 888 CRAWLER CRANE (200 MT)                    | 22090.00                                          |
| 15        | CRAWLER CRANE SUMITOMO, 150T                                  | 13490.00                                          |
| 16        | All Terrain Crane, 150MT- Liebherr Model LTM1150              | 15180.00                                          |
| 17        | CRAWLER CRANE, 90 T (1055 BLC)                                | 3500.00                                           |
| 18        | CRAWLER CRANE, 120 T Fushun Model QUY120                      | 10950.00                                          |
| 19(a)     | CRAWLER CRANE 135MT Kobelco Model CK1350- 1F                  | 10720.00                                          |
| 19(b)     | CRAWLER CRANE 135MT Kobelco Model CK1350                      | 13490.00                                          |
| 20        | CRAWLER CRANE 120MT - Tata-Sumitomo Model SCX1200-2           | 11800.00                                          |
| 21        | CRAWLER CRANE 100 T (KH 500)                                  | 10190.00                                          |
| 22        | Hydraulic Crawler Crane 80MT, Fushun Model QUY 80B            | 5470.00                                           |
| 23        | ROUGH TERRAIN CRANE 75T (RT880)                               | 6760.00                                           |
| 24        | CRAWLER CRANE, 75T -Tata Model 955ALC/TFC280                  | 5640.00                                           |
| 25        | Mobile Crane, 55MT (TIL)                                      | 4830.00                                           |
| 26        | CRAWLER CRANE, 25T -Tata Model TFC75                          | 3060.00                                           |
| 27        | MOBILE CRANE, 20MT (TIL)                                      | 2270.00                                           |
| 28        | MOBILE CRANE, 20MT (ESCORTS)                                  | 2270.00                                           |
| 29        | CRAWLER CRANE, 18T (Tata Model 320)                           | 1750.00                                           |
| 30        | MOBILE CRANE ESCORTS- 14MT                                    | 720.00                                            |
| 31        | HYDAULIC PICK & CARRY CRANE, 8/9/10/11/12 MT                  | 390.00                                            |
| 32        | ELECTRIC GANTRY CRANE 3T                                      | 430.00                                            |
| 33        | ELECTRIC GANTRY CRANE 5T                                      | 540.00                                            |
| 34        | ELECTRIC GANTRY CRANE 30T                                     | 3660.00                                           |
| 35        | FORK LIFT 5T                                                  | 720.00                                            |
| 36        | FORK LIFT 3T                                                  | 540.00                                            |
| <b>II</b> | <b>MATERIAL HANDLING VEHICLES:-</b>                           |                                                   |
| 1         | TRACTOR AND TRAILER 30T                                       | 890.00                                            |
| 2         | TRACTOR AND TRAILER 20T                                       | 770.00                                            |
| 3         | TRAILER, 15T                                                  | 270.00                                            |
| 4         | TRAILER, 10T/12T                                              | 270.00                                            |
| 5         | TRACTOR FOR TRAILOR 15T/10T/12T                               | 420.00                                            |
| 6         | TRUCK, 10T/8T                                                 | 360.00                                            |

RATES OF T&P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS

| SL NO. | ITEM DESCRIPTION                                            | Revised rates (Rs./Day) valid from<br>01/06/2017 to 31/5/2019 |
|--------|-------------------------------------------------------------|---------------------------------------------------------------|
| I.     | LIFTING EQUIPMENTS                                          |                                                               |
| 1      | Strand Jack System for Boiler Drum Lifting                  | 24540                                                         |
| 2      | MULTI SHEAVE PULLEY BLOCK 40/50T/60T                        | 310                                                           |
| 3      | MULTI SHEAVE PULLEY BLOCK 100T                              | 630                                                           |
| 4      | MULTI SHEAVE PULLEY BLOCK 150T                              | 1270                                                          |
| 5      | MULTI SHEAVE PULLEY BLOCK 200T                              | 1910                                                          |
| 6      | MULTI SHEAVE PULLEY BLOCK 300T                              | 4470                                                          |
| 7      | ELCTRIC WINCH 1T                                            | 810                                                           |
| 8      | ELCTRIC WINCH 2T                                            | 990                                                           |
| 9      | ELCTRIC WINCH 3T                                            | 1180                                                          |
| 10     | ELCTRIC WINCH 5T                                            | 1360                                                          |
| 11     | ELCTRIC WINCH 8T                                            | 2720                                                          |
| 12     | ELCTRIC WINCH 10T                                           | 8180                                                          |
| 13     | ELECTRIC WINCH 15 T                                         | 9720                                                          |
| 14     | PASSENGER CUM GOODS HOIST 1T                                | 4560                                                          |
| 15     | FURNACE MAINTENANCE PLATFORM                                | 5060                                                          |
| 16     | Gang Operated Hydraulic Jack (Set of 4 Jacks - 175 MT each) | 2110                                                          |
| 17     | HYD.JACKS,GANG OPERATED (SET OF 4) 100T                     | 2040                                                          |
| 18     | HYD.JACKS,GANG OPERATED (SET OF 4) 50T                      | 1460                                                          |
| 19     | HYD.JACKS,GANG OPERATED (SET OF 4) 25T                      | 870                                                           |
| 20     | CHAIN PULLEY BLOCK 20 T                                     | 560                                                           |
| 21     | CHAIN PULLEY BLOCK 10 T                                     | 280                                                           |
| II     | WELDING & HEAT TREATMENT EQUIPMENT                          |                                                               |
| 1      | 125KW, 3KHZ, AIR-COOLED INDUCTION HEATING EQUIPMENT         | 16480                                                         |
| 2      | 75KW, 10 KHZ, COMPACT INDUCTION HEATING EQUIPMENT           | 8240                                                          |
| 3      | WELDING GENERATOR 320/300 A                                 | 430                                                           |
| 4      | WELDING GENERATOR 450/400 A                                 | 520                                                           |
| 5      | WELDING GENERATOR 500/600A                                  | 610                                                           |
| 6      | WELDING RECTIFIER 400A/300A                                 | 520                                                           |
| 7      | WELDING RECTIFIER 600A                                      | 610                                                           |
| 8      | DIESEL WELDING GENERATOR 400A/300A                          | 780                                                           |
| 9      | PROGRAMMABLE TEMP. CONTROLLER                               | 400                                                           |
| 10     | TRANSFORMER,600A                                            | 300                                                           |
| 11     | TRANSFORMER 300/400A                                        | 200                                                           |
| 12     | TEMP. RECORDER,6/12PT 1200C OTHER THAN ILK MAKE             | 200                                                           |
| 13     | TEMP. RECORDER,6/12PT 1200C ILK MAKE                        | 400                                                           |
| 14     | MIG WELDING EQPT. 400A(SEMI AUTOMATIC)                      | 1310                                                          |
| 15     | SUBMERGED ARC WELDING M/C                                   | 1310                                                          |
| 16     | Soldering de-soldering unit                                 | 600                                                           |

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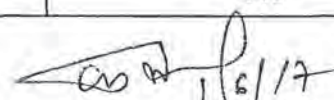
RATES OF T&P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS

| SL NO. | ITEM DESCRIPTION                                                              | Revised rates (Rs./Day) valid from<br>01/06/2017 to 31/5/2019 |
|--------|-------------------------------------------------------------------------------|---------------------------------------------------------------|
| III    | SERVICE PLANTS & ALLIED EQUIPT.                                               |                                                               |
| 1      | 500KVA DIESEL GENERATOR                                                       | 5230                                                          |
| 2      | TRANSFORMER OIL FILTRATION EQUIPMENT 6000LPH CAPACITY<br>WITHOUT STORAGE TANK | 6410                                                          |
| 3      | -DO-, WITH STORAGE TANK                                                       | 7320                                                          |
| 4      | Core Loss Transformer                                                         | 3660                                                          |
| 5      | OIL FILTRATION M/C, 250/500 LPH (OTHER THAN SILICON OIL)                      | 910                                                           |
| 6      | OIL FILTRATION M/C, 250GPH/1000LPH (OTHER THAN SILICON<br>OIL)                | 1370                                                          |
| 7      | OIL FILTRATION M/C, 500GPH/2500LPH (OTHER THAN SILICON<br>OIL)                | 1830                                                          |
| 8      | OIL FILTRATION M/C, 1000GPH/5000LPH (OTHER THAN SILICON<br>OIL)               | 3660                                                          |
| 9      | Portable Lube Oil Purification Unit (Centrifuge M/c) Capacity: 750<br>LPH     | 1270                                                          |
| 10     | Low Vacuum de-hydration unit                                                  | 640                                                           |
| 11     | DIESEL GENERATING SET, 250 KVA                                                | 5230                                                          |
| 12     | DIESEL GENERATING SET, 25 KVA                                                 | 1530                                                          |
| 13     | VACUUM PUMP (ABSOLUTE V.C.)                                                   | 540                                                           |
| 14     | ACID CIRCULATING PUMP WITH MOTOR 120M HEAD, 150T/HR                           | 1090                                                          |
| 15     | ACID TRANSFER PUMP 20/50 T/HR                                                 | 540                                                           |
| 16     | DEWATERING PUMP (Kirloskar make, 11KW/15HP)                                   | 80                                                            |
| 17     | HP Air compressor (32 Kg/Sq. Cm, 150 CFM)                                     | 4260                                                          |
| 18     | AIR COMPRESSORS 250/300/330/360/350 CFM                                       | 2740                                                          |
| 19     | AIR COMPRESSORS 140/150/190/210 CFM                                           | 910                                                           |
| 20     | AIR COMPRESSORS 80 CFM                                                        | 540                                                           |
| 21     | ACID CIRCULATING PUMP WITH MOTOR & STARTER, 200T/HR,<br>150M, 220 HP          | 1830                                                          |
| 22     | AIR COMPRESSOR 400 cfm                                                        | 2010                                                          |
| 23     | Rectifier                                                                     | 2190                                                          |
| 24     | Industrial Blower 2000CFM                                                     | 1450                                                          |
| 25     | Air Leak Test Blower (Flow: 40000 m³/Hr)                                      | 1170                                                          |
| 26     | Air Blower (Flow: 20000 m³/Hr)                                                | 940                                                           |
| IV     | METAL FORMING /CUTTING EQUIPMENT                                              |                                                               |
| 1      | TUBE EXPANDING MACHINE, HYDRAULIC (HYDRIVE 60-100 MM)-<br>Indian              | 630                                                           |
| 2      | TUBE EXPANDING MACHINE, HYDRAULIC (HYDRIVE 60-100 MM)-<br>Imported            | 4130                                                          |
| 3      | TUBE EXPANDING M/C ELECTRIC/ELECTRONIC 20-30 MM,<br>IMPORTED                  | 1460                                                          |
| 4      | TUBE EXPANDING M/C ELECTRIC/ELECTRONIC 20-30 MM,<br>INDIGENOUS                | 290                                                           |
| 5      | TUBE EXPANDING M/C PNEUMATIC 20-30 MM                                         | 480                                                           |

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RATES OF T&P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS

| SL NO. | ITEM DESCRIPTION                                     | Revised rates (Rs./Day) valid from<br>01/06/2017 to 31/5/2019 |
|--------|------------------------------------------------------|---------------------------------------------------------------|
| 6      | TUBE EXPANDING M/C PNEUMATIC 60-100 MM               | 700                                                           |
| 7      | ELECTRO HYDRAULIC PIPE BENDING M/C 4"                | 1640                                                          |
| 8      | Hydraulic Pipe bending m/c 4" -Indigenous            | 590                                                           |
| 9      | PIPE CUTTING M/C (IMPORTED)RA-4                      | 1000                                                          |
| 10     | PIPE CUTTING M/C (IMPORTED)RA-6                      | 1460                                                          |
| 11     | ALCOA/AVLOCK BOLTING MACHINE                         | 3630                                                          |
| 12     | -do- Gun with nose Assembly only                     | 900                                                           |
| 13     | E/O PIPE CUTTING /BEV.M/C 230 mm                     | 2560                                                          |
| V      | TESTING/INSPECTION EQUIPMENT                         |                                                               |
|        | DATA LOGGER for PG TESTING                           | 42110                                                         |
| 2      | MOTORISED HYDRAULIC TEST PUMP 250kg/cmsq             | 800                                                           |
| 3      | MOTORISED HYDRAULIC TEST PUMP 400-450kg/cmsq         | 1520                                                          |
| 4      | MOTORISED HYDRAULIC TEST PUMP 600 KG/CMSQ            | 2020                                                          |
| 5      | HYDRAULIC TEST PUMP 800 KG/CMSQ                      | 1330                                                          |
| 6      | HYDRAULIC TEST PUMP 1000 KG/CMSQ                     | 2650                                                          |
| 7      | BOLT TENSION METER/TORQUE WRENCH CALIBRATOR          | 1280                                                          |
| 8      | BOLT STRETCHING DEVICE                               | 910                                                           |
| 9      | MICRO HEAD COMMUNICATING WATER LEVEL                 | 180                                                           |
| 10     | MICROMETRIC ADJUSTABLE SPIRIT LEVEL                  | 180                                                           |
| 11     | TORQUE WRENCH 400 KG-M                               | 450                                                           |
| 12     | TORQUE WRENCH 800 KG-M                               | 540                                                           |
| 13     | BOROSCOPE/FIBROSCOPE FLEXIBLE TYPE (FLEXUX) IMPORTED | 4820                                                          |
| 14     | ULTRASONIC FLAW DETECTOR                             | 2740                                                          |
| 15     | MPI TEST KIT                                         | 360                                                           |
| 16     | GAS LEAK DETECTOR                                    | 270                                                           |
| 17     | VIBRATION/SOUND LEVEL METER IRD-306                  | 360                                                           |
| 18     | VIBRATION/SOUND LEVEL METER IRD-308                  | 360                                                           |
| 19     | VIBRATION ANALYSER/DYNAMIC BALANCING M/C IRD 350     | 1460                                                          |
| 20     | VIBRATION ANALYSER/DYNAMIC BALANCING M/C IRD 360     | 2560                                                          |
| 21     | SHOCK PULSE METER                                    | 640                                                           |
| 22     | HV.DC TEST KIT UPTO 50 KV                            | 540                                                           |
| 23     | HV.DC TEST KIT ABOVE 50 KV                           | 1000                                                          |
| 24     | HV.AC TEST KIT UPTO 50KV                             | 820                                                           |
| 25     | HV.AC TEST KIT ABOVE 50KV                            | 2930                                                          |
| 26     | MOTORISED MEGGER 2.5KV                               | 1090                                                          |
| 27     | MOTORISED MEGGAR 5KV                                 | 2180                                                          |
| 28     | OSCILLOSCOPE-DUAL BEAM INDIGENOUS                    | 450                                                           |
| 29     | OSCILLOSCOPE-DUAL BEAM IMPORTED                      | 1670                                                          |
| 30     | WAVEFORM ANALYSER                                    | 910                                                           |

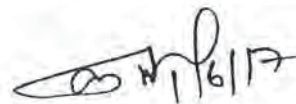


RATES OF T&P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS

| SL NO. | ITEM DESCRIPTION                                                                    | Revised rates (Rs./Day) valid from<br>01/06/2017 to 31/5/2019 |
|--------|-------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 31     | OSCILLOGRAPH/UV RECORDER 24 CHANNEL                                                 | 1670                                                          |
| 32     | OSCILLOGRAPH/UV RECORDER 12 CHANNEL                                                 | 1140                                                          |
| 33     | OSCILLOGRAPH/UV RECORDER 6 CHANNEL                                                  | 910                                                           |
| 34     | DIGITAL LOW RESISTANCE METER                                                        | 640                                                           |
| 35     | DC POTENTIOMETER                                                                    | 180                                                           |
| 36     | PRECISION DEAD WEIGHT TESTER                                                        | 1000                                                          |
| 37     | OPTICAL ALIGNMENT KIT                                                               | 1390                                                          |
| 38     | BOROSCOPE/FIBROSCOPE(NON FLEXIBLE)                                                  | 1200                                                          |
| 39     | VERNIER THEODOLITE,PRECISION                                                        | 1200                                                          |
| 40     | VERNIER THEODOLITE,ORDINARY                                                         | 200                                                           |
| 41     | ENGINEERS PRECISION LEVEL/DUMPY LEVEL                                               | 120                                                           |
| 42     | ISKAMATIC 'A'                                                                       | 3220                                                          |
| 43     | CALIBRATOR '03'                                                                     | 1000                                                          |
| 44     | 48 POLE EXTENDER CARD                                                               | 200                                                           |
| 45     | MULTIJET NPM                                                                        | 400                                                           |
| 46     | OSCILLOMETER                                                                        | 10260                                                         |
| 47     | VOC EQUIPMENT                                                                       | 1410                                                          |
| 48     | BINARY SIGNAL GENERATOR                                                             | 290                                                           |
| 49     | ELECTRIC COUNTER                                                                    | 690                                                           |
| 50     | FREQUENCY GENERATOR                                                                 | 1000                                                          |
| 51     | DBF 3 VIBRATION RECORDER/ANALYSER                                                   | 3290                                                          |
| 52     | L&T GOULD OSCILLOGRAPH 2-CHANNEL                                                    | 490                                                           |
| 53     | L&T GOULD OSCILLOGRAPH 6-CHANNEL                                                    | 1190                                                          |
| 54     | VIBROPORT 41/FFT ANALYSER                                                           | 5490                                                          |
| 55     | ELCID kit                                                                           | 10070                                                         |
| 56     | UNIVERSAL CALIBRATION SYSTEM                                                        | 2740                                                          |
| 57     | NATURAL FREQUENCY TESTER                                                            | 2930                                                          |
| 58     | DIGITAL HARDNESS TESTER                                                             | 360                                                           |
| 59     | ADRE 208 VIBRATION ANALYSER                                                         | 7320                                                          |
| 60     | PCB DIAGNOSTIC REPAIR KIT                                                           | 2010                                                          |
| 61     | SECONDARY INJECTION RELAY TEST KIT                                                  | 5310                                                          |
| 62     | MICRO OHM METER                                                                     | 1460                                                          |
| 63     | DIGITAL MICRO OHM METER<br>MEASURING RANGE: 200 $\mu\Omega$ TO 20K $\Omega$         | 3260                                                          |
| 64     | PMI Machine OLYMPUS make                                                            | 3350                                                          |
| 65     | Mobile Lighting Mast -<br>9 metres (4X400 W)                                        | 860                                                           |
| 66     | 10KVA RESISTANCE BRAZING MACHINE                                                    | 140                                                           |
| 67     | RECURRENT SURGE OSCILLOGRAPH (RSO) TEST KIT WITH<br>PORTABLE HANDHELD OSCILLOSCOPE. | 460                                                           |
| 68     | HYDROGEN GAS LEAK DETECTOR                                                          | 50                                                            |
| 69     | STATOR WEDGE ANALYZER KIT WITH COMPLETE ACCESSORIES                                 | 4980                                                          |
| 70     | WEDGE DEFLECTION KIT                                                                | 80                                                            |

RATES OF T&P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILERS ETC. FOR  
SUB-CONTRACTORS WORKING FOR BHEL FOR DOING BHEL JOBS

| SL NO. | ITEM DESCRIPTION                                                                                         | Revised rates (Rs./Day) valid from<br>01/06/2017 to 31/5/2019 |
|--------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|
| 71     | TILE PRESSING MACHINE FOR GAS TURBINE                                                                    | 270                                                           |
| 72     | INDUCTION BRAZING MACHINE                                                                                | 4870                                                          |
| 73     | MAGNETIC COHESIVE FORCE (MCF) EQUIPMENT                                                                  | 3640                                                          |
| 74     | ULTRASONIC FLOW METER                                                                                    | 180                                                           |
| 75     | PORTABLE VIBRATION ANALYSER (MODEL 811T)                                                                 | 40                                                            |
| 76     | CENTRIFUGAL PUMP SET FOR ACID CLEANING (WITH MOTOR AND<br>PANEL) : PRESSURE -14KG/SQ CM. ; FLOW 60 M3/HR | 470                                                           |
| 77     | CENTRIFUGAL PUMP SET FOR ACID CLEANING (WITH MOTOR AND<br>PANEL) : PRESSURE -30KG/SQ CM. ; FLOW 15 M3/HR | 430                                                           |
| 78     | HI SPEED MEMORY RECORDER, MAKE -YOKOGAWA, MODEL<br>DL850E-Q-HE/B5/HD1                                    | 1810                                                          |
| 79     | TROLLEY MOUNTED HYDRAULIC JACK (100 MT)                                                                  | 1260                                                          |

 01/6/17

**Annexure C2**

DATE:01/06/2017

**REVISED RATES OF T&P HIRE CHARGES FOR CRANES & TRAILERS ETC. FOR  
OUTSIDE AGENCIES**

| SL NO.    | ITEM DESCRIPTION                                                         | Revised rates (Rs./Hour)<br>valid from 01/06/2017 to<br>31/5/2019. |
|-----------|--------------------------------------------------------------------------|--------------------------------------------------------------------|
| <b>I.</b> | <b>CRANES :-</b>                                                         |                                                                    |
| 1         | Portal Gantry Crane 500T                                                 | 22660.00                                                           |
| 2         | 100MT Crawler Crane ZOOMLION CRANE-QUY-100                               | 12630.00                                                           |
| 3         | Heavy Lift Crawler Crane 600MT Class DEMAG Model CC2800                  | 62550.00                                                           |
| 4         | PORTAL CRANE, 360T                                                       | 17330.00                                                           |
| 5         | 600MT Class Crawler Crane- Manitowoc Model 18000-                        | 67530.00                                                           |
| 6         | 600MT Class Crawler Crane- Liebherr Model LR1600-2<br>(Upgraded version) | 76230.00                                                           |
| 7         | CRAWLER CRANE FMC/LINKBELT 718, 250T (WITH RINGER)                       | 37770.00                                                           |
| 8         | CRAWLER CRANE FMC/LINKBELT 718, 250T (WITH-OUT<br>RINGER)                | 23600.00                                                           |
| 9         | MANITOWOC M-250T TRUCK CRANE                                             | 33990.00                                                           |
| 10        | 270 MT Class Crawler Crane- Manitowoc Model 2250                         | 35180.00                                                           |
| 11        | 300MT Crane Crawler Crane LIEBHERR Model LR-1350/1                       | 29320.00                                                           |
| 12        | 250MT Class Mid range Crawler Crane- Kobelco Model                       | 24360.00                                                           |
| 13        | LINKBELT LS- 248H CRAWLER CRANE (180T)                                   | 18880.00                                                           |
| 14        | MANITOWAC MODEL 888 CRAWLER CRANE (200 MT)                               | 24550.00                                                           |
| 15        | CRAWLER CRANE SUMITOMO, 150T                                             | 14990.00                                                           |
| 16        | All Terrain Crane, 150MT- Liebherr Model LTM1150                         | 16860.00                                                           |
| 17        | CRAWLER CRANE, 90 T (1055 BLC)-                                          | 3890.00                                                            |
| 18        | CRAWLER CRANE, 120 T Fushun Model QUY120                                 | 12170.00                                                           |
| 19 (a)    | CRAWLER CRANE 135MT Kobelco Model CK1350- 1F                             | 11910.00                                                           |
| 19(b)     | CRAWLER CRANE 135MT Kobelco Model CK1350                                 | 14990.00                                                           |
| 20        | CRAWLER CRANE 120MT - Tata-Sumitomo Model SCX1200-2                      | 13120.00                                                           |
| 21        | CRAWLER CRANE 100 T (KH 500)                                             | 11330.00                                                           |
| 22        | Hydraulic Crawler Crane 80MT, Fushun Model QUY 80B                       | 6080.00                                                            |
| 23        | ROUGH TERRAIN CRANE 75T (RT880)                                          | 7510.00                                                            |
| 24        | CRAWLER CRANE, 75T -Tata Model 955ALC/TFC280                             | 6270.00                                                            |
| 25        | Mobile Crane, 55MT (TIL)                                                 | 5360.00                                                            |
| 26        | CRAWLER CRANE, 25T -Tata Model TFC75                                     | 3400.00                                                            |
| 27        | MOBILE CRANE, 20MT (TIL)                                                 | 2520.00                                                            |
| 28        | MOBILE CRANE, 20MT (ESCORTS)                                             | 2520.00                                                            |
| 29        | CRAWLER CRANE, 18T (Tata Model 320)                                      | 1940.00                                                            |
| 30        | MOBILE CRANE ESCORTS- 14MT                                               | 800.00                                                             |
| 31        | HYDAULIC PICK & CARRY CRANE, 8/9/10/11/12 MT                             | 430.00                                                             |
| 32        | ELECTRIC GANTRY CRANE 3T                                                 | 480.00                                                             |
| 33        | ELECTRIC GANTRY CRANE 5T                                                 | 610.00                                                             |
| 34        | ELECTRIC GANTRY CRANE 30T                                                | 4070.00                                                            |
| 35        | FORK LIFT 5T                                                             | 800.00                                                             |
| 36        | FORK LIFT 3T                                                             | 610.00                                                             |
| <b>II</b> | <b>MATERIAL HANDLING VEHICLES:-</b>                                      |                                                                    |
| 1         | TRACTOR AND TRAILER 30T                                                  | 990.00                                                             |
| 2         | TRACTOR AND TRAILER 20T                                                  | 850.00                                                             |
| 3         | TRAILER, 15T                                                             | 300.00                                                             |
| 4         | TRAILER, 10T/12T                                                         | 300.00                                                             |
| 5         | TRACTOR FOR TRAILOR 15T/10T/12T                                          | 470.00                                                             |
| 6         | TRUCK, 10T/8T                                                            | 400.00                                                             |

**RATES OF T & P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILLERS  
ETC. FOR OUTSIDE AGENCIES**

| SL NO. | ITEM DESCRIPTION                                            | REVISED RATES (Rs./ Day)<br>VALID FROM 01/06/2017 TO<br>31/05/2019 |
|--------|-------------------------------------------------------------|--------------------------------------------------------------------|
| I.     | LIFTING EQUIPMENTS                                          |                                                                    |
| 1      | Strand Jack System for Boiler Drum Lifting                  | 27260                                                              |
| 2      | MULTI SHEAVE PULLEY BLOCK 40/50T/60T                        | 350                                                                |
| 3      | MULTI SHEAVE PULLEY BLOCK 100T                              | 710                                                                |
| 4      | MULTI SHEAVE PULLEY BLOCK 150T                              | 1420                                                               |
| 5      | MULTI SHEAVE PULLEY BLOCK 200T                              | 2130                                                               |
| 6      | MULTI SHEAVE PULLEY BLOCK 300T                              | 4970                                                               |
| 7      | ELCTRIC WINCH 1T                                            | 900                                                                |
| 8      | ELCTRIC WINCH 2T                                            | 1110                                                               |
| 9      | ELCTRIC WINCH 3T                                            | 1310                                                               |
| 10     | ELCTRIC WINCH 5T                                            | 1510                                                               |
| 11     | ELCTRIC WINCH 8T                                            | 3020                                                               |
| 12     | ELCTRIC WINCH 10T                                           | 9080                                                               |
| 13     | ELECTRIC WINCH 15 T                                         | 9720                                                               |
| 14     | PASSENGER CUM GOODS HOIST 1T                                | 4630                                                               |
| 15     | FURNACE MAINTENANCE PLATFORM                                | 5620                                                               |
| 16     | Gang Operated Hydraulic Jack (Set of 4 Jacks - 175 MT each) | 2340                                                               |
| 17     | HYD.JACKS,GANG OPERATED (SET OR 4) 100T                     | 2270                                                               |
| 18     | HYD.JACKS,GANG OPERATED (SET OF 4) 50T                      | 1620                                                               |
| 19     | HYD.JACKS,GANG OPERATED (SET OF 4) 25T                      | 970                                                                |
| 20     | CHAIN PULLEY BLOCK 20 T                                     | 620                                                                |
| 21     | CHAIN PULLEY BLOCK 10 T                                     | 310                                                                |
| II     | WELDING & HEAT TREATMENT EQUIPMENT                          |                                                                    |
| 1      | 125KW, 3KHZ, AIR-COOLED INDUCTION HEATING EQUIPMENT         | 18320                                                              |
| 2      | 75KW, 10 KHZ, COMPACT INDUCTION HEATING EQUIPMENT           | 9160                                                               |
| 3      | WELDING GENERATOR 320/300 A                                 | 480                                                                |
| 4      | WELDING GENERATOR 450/400 A                                 | 580                                                                |
| 5      | WELDING GENERATOR 500/600A                                  | 680                                                                |
| 6      | WELDING RECTIFIER 400A/300A                                 | 580                                                                |
| 7      | WELDING RECTIFIER 600A                                      | 680                                                                |
| 8      | DIESEL WELDING GENERATOR 400A/300A                          | 920                                                                |
| 9      | PROGRAMMABLE TEMP. CONTROLLER                               | 440                                                                |
| 10     | TRANSFORMER,600A                                            | 330                                                                |
| 11     | TRANSFORMER 300/400A                                        | 220                                                                |
| 12     | TEMP. RECORDER,6/12PT 1200C OTHER THAN ILK MAKE             | 220                                                                |
| 13     | TEMP. RECORDER,6/12PT 1200C ILK MAKE                        | 440                                                                |
| 14     | MIG WELDING EQPT. 400A(SEMI AUTOMATIC)                      | 1450                                                               |
| 15     | SUBMERGED ARC WELDING M/C                                   | 1450                                                               |

**RATES OF T & P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILLERS  
ETC. FOR OUTSIDE AGENCIES**

| SL NO. | ITEM DESCRIPTION                                                              | REVISED RATES (Rs./ Day)<br>VALID FROM 01/06/2017 TO<br>31/05/2019 |
|--------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 16     | Soldering de-soldering unit                                                   | 670                                                                |
| III    | SERVICE PLANTS & ALLIED EQUIPT.                                               |                                                                    |
| 1      | 500KVA DIESEL GENERATOR                                                       | 7720                                                               |
| 2      | TRANSFORMER OIL FILTRATION EQUIPMENT 6000LPH<br>CAPACITY WITHOUT STORAGE TANK | 7120                                                               |
| 3      | -DO-, WITH STORAGE TANK                                                       | 8140                                                               |
| 4      | Core Loss Transformer                                                         | 4070                                                               |
| 5      | OIL FILTRATION M/C, 250/500 LPH (OTHER THAN SILICON OIL)                      | 1010                                                               |
| 6      | OIL FILTRATION M/C, 250GPH/1000LPH (OTHER THAN SILICON OIL)                   | 1520                                                               |
| 7      | OIL FILTRATION M/C, 500GPH/2500LPH (OTHER THAN SILICON OIL)                   | 2030                                                               |
| 8      | OIL FILTRATION M/C, 1000GPH/5000LPH (OTHER THAN SILICON OIL)                  | 4070                                                               |
| 9      | Portable Lube Oil Purification Unit (Centrifuge M/c) Capacity: 750 LPH        | 1410                                                               |
| 10     | Low Vacuum de-hydration unit                                                  | 710                                                                |
| 11     | DIESEL GENERATING SET, 250 KVA                                                | 7720                                                               |
| 12     | DIESEL GENERATING SET, 25 KVA                                                 | 1700                                                               |
| 13     | VACUUM PUMP (ABSOLUTE V.C.)                                                   | 610                                                                |
| 14     | ACID CIRCULATING PUMP WITH MOTOR, 120M HEAD, 150T/HR                          | 1220                                                               |
| 15     | ACID TRANSFER PUMP 20/50 T/HR                                                 | 610                                                                |
| 16     | DEWATERING PUMP (Kirloskar make, 11KW/15HP)                                   | 90                                                                 |
| 17     | HP Air compressor (32 Kg/Sq. Cm, 150 CFM)                                     | 4740                                                               |
| 18     | AIR COMPRESSORS 250/300/330/360/350 CFM                                       | 3050                                                               |
| 19     | AIR COMPRESSORS 140/150/190/210 CFM                                           | 1010                                                               |
| 20     | AIR COMPRESSORS 80 CFM                                                        | 610                                                                |
| 21     | ACID CIRCULATING PUMP WITH MOTOR & STARTER, 200T/HR, 150M, 220 HP             | 2030                                                               |
| 22     | AIR COMPRESSOR 400 cfm                                                        | 2230                                                               |
| 23     | Rectiformer                                                                   | 2440                                                               |
| 24     | Industrial Blower 2000CFM                                                     | 1610                                                               |
| 25     | Air Leak Test Blower (Flow: 40000 m <sup>3</sup> /Hr)                         | 1300                                                               |
| 26     | Air Blower (Flow: 20000 m <sup>3</sup> /Hr)                                   | 1040                                                               |
| IV     | METAL FORMING /CUTTING EQUIPMENT                                              |                                                                    |
| 1      | TUBE EXPANDING MACHINE, HYDRAULIC (HYDRIVE 60-100 MM)-<br>Indian              | 700                                                                |
| 2      | TUBE EXPANDING MACHINE, HYDRAULIC (HYDRIVE 60-100 MM)-<br>Imported            | 4590                                                               |
| 3      | TUBE EXPANDING M/C ELECTRIC/ELECTRONIC 20-30 MM,<br>IMPORTED                  | 1620                                                               |
| 4      | TUBE EXPANDING M/C ELECTRIC/ELECTRONIC 20-30 MM,<br>INDIGENOUS                | 300                                                                |

*[Signature]*  
01/06/17

**RATES OF T & P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILLERS  
ETC. FOR OUTSIDE AGENCIES**

| SL NO. | ITEM DESCRIPTION                                     | REVISED RATES (Rs./ Day)<br>VALID FROM 01/06/2017 TO<br>31/05/2019 |
|--------|------------------------------------------------------|--------------------------------------------------------------------|
| 5      | TUBE EXPANDING M/C PNEUMATIC 20-30 MM                | 530                                                                |
| 6      | TUBE EXPANDING M/C PNEUMATIC 60-100 MM               | 760                                                                |
| 7      | ELECTRO HYDRAULIC PIPE BENDING M/C 4"                | 1830                                                               |
| 8      | Hydraulic Pipe bending m/c 4" -Indigenous            | 660                                                                |
| 9      | PIPE CUTTING M/C (IMPORTED)RA-4                      | 1110                                                               |
| 10     | PIPE CUTTING M/C (IMPORTED)RA-6                      | 1620                                                               |
| 11     | ALCOA/AVLOCK BOLTING MACHINE                         | 4030                                                               |
| 12     | -do- Gun with nose Assembly only                     | 1000                                                               |
| 13     | E/O PIPE CUTTING /BEV.M/C 230 mm                     | 2850                                                               |
| V      | TESTING/INSPECTION EQUIPMENT                         |                                                                    |
| 1      | DATA LOGGER for PG TESTING                           | 46790                                                              |
| 2      | MOTORISED HYDRAULIC TEST PUMP 250kg/cmsq             | 890                                                                |
| 3      | MOTORISED HYDRAULIC TEST PUMP 400-450kg/cmsq         | 1560                                                               |
| 4      | MOTORISED HYDRAULIC TEST PUMP 600 KG/CMSQ            | 2220                                                               |
| 5      | HYDRAULIC TEST PUMP 800 KG/CMSQ                      | 1480                                                               |
| 6      | HYDRAULIC TEST PUMP 1000 KG/CMSQ                     | 2950                                                               |
| 7      | BOLT TENSION METER/TORQUE WRENCH CALIBRATOR          | 1420                                                               |
| 8      | BOLT STRETCHING DEVICE                               | 1010                                                               |
| 9      | MICRO HEAD COMMUNICATING WATER LEVEL                 | 200                                                                |
| 10     | MICROMETRIC ADJUSTABLE SPIRIT LEVEL                  | 200                                                                |
| 11     | TORQUE WRENCH 400 KG-M                               | 500                                                                |
| 12     | TORQUE WRENCH 800 KG-M                               | 610                                                                |
| 13     | BOROSCOPE/FIBROSCOPE FLEXIBLE TYPE (FLEXUX) IMPORTED | 5360                                                               |
| 14     | ULTRASONIC FLAW DETECTOR                             | 3050                                                               |
| 15     | MPI TEST KIT                                         | 400                                                                |
| 16     | GAS LEAK DETECTOR                                    | 300                                                                |
| 17     | VIBRATION/SOUND LEVEL METER IRD-306                  | 400                                                                |
| 18     | VIBRATION/SOUND LEVEL METER IRD-308                  | 400                                                                |
| 19     | VIBRATION ANALYSER/DYNAMIC BALANCING M/C IRD 350     | 1620                                                               |
| 20     | VIBRATION ANALYSER/DYNAMIC BALANCING M/C IRD 360     | 2850                                                               |
| 21     | SHOCK PULSE METER                                    | 710                                                                |
| 22     | HV.DC TEST KIT UPTO 50 KV                            | 610                                                                |
| 23     | HV.DC TEST KIT ABOVE 50 KV                           | 1110                                                               |
| 24     | HV.AC TEST KIT UPTO 50KV                             | 910                                                                |
| 25     | HV.AC TEST KIT ABOVE 50KV                            | 3250                                                               |
| 26     | MOTORISED MEGGER 2.5KV                               | 1210                                                               |
| 27     | MOTORISED MEGGAR 5KV                                 | 2420                                                               |

*[Signature]*  
16/17

**RATES OF T & P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILLERS  
ETC. FOR OUTSIDE AGENCIES**

| SL NO. | ITEM DESCRIPTION                                                            | REVISED RATES (Rs./ Day)<br>VALID FROM 01/06/2017 TO<br>31/05/2019 |
|--------|-----------------------------------------------------------------------------|--------------------------------------------------------------------|
| 28     | OSCILLOSCOPE-DUAL BEAM INDIGENOUS                                           | 500                                                                |
| 29     | OSCILLOSCOPE-DUAL BEAM IMPORTED                                             | 1820                                                               |
| 30     | WAVEFORM ANALYSER                                                           | 1010                                                               |
| 31     | OSCILLOGRAPH/UV RECORDER 24 CHANNEL                                         | 1830                                                               |
| 32     | OSCILLOGRAPH/UV RECORDER 12 CHANNEL                                         | 1220                                                               |
| 33     | OSCILLOGRAPH/UV RECORDER 6 CHANNEL                                          | 1010                                                               |
| 34     | DIGITAL LOW RESISTANCE METER                                                | 710                                                                |
| 35     | DC POTENTIOMETER                                                            | 200                                                                |
| 36     | PRECISION DEAD WEIGHT TESTER                                                | 1110                                                               |
| 37     | OPTICAL ALIGNMENT KIT                                                       | 1520                                                               |
| 38     | BOROSCOPE/FIBROSCOPE(NON FLEXIBLE)                                          | 1340                                                               |
| 39     | VERNIER THEODOLITE,PRECISION                                                | 1340                                                               |
| 40     | VERNIER THEODOLITE,ORDINARY                                                 | 220                                                                |
| 41     | ENGINEERS PRECISION LEVEL/DUMPY LEVEL                                       | 130                                                                |
| 42     | ISKAMATIC 'A'                                                               | 3580                                                               |
| 43     | CALIBRATOR '03'                                                             | 1110                                                               |
| 44     | 48 POLE EXTENDER CARD                                                       | 220                                                                |
| 45     | MULTIJET NPM                                                                | 440                                                                |
| 46     | OSCILLOMETER                                                                | 11400                                                              |
| 47     | VOC EQUIPMENT                                                               | 1560                                                               |
| 48     | BINARY SIGNAL GENERATOR                                                     | 320                                                                |
| 49     | ELECTRIC COUNTER                                                            | 770                                                                |
| 50     | FREQUENCY GENERATOR                                                         | 1110                                                               |
| 51     | DBF 3 VIBRATION RECORDER/ANALYSER                                           | 3660                                                               |
| 52     | L&T GOULD OSCILLOGRAPH 2-CHANNEL                                            | 540                                                                |
| 53     | L&T GOULD OSCILLOGRAPH 6-CHANNEL                                            | 1320                                                               |
| 54     | VIBROPORT 41/FFT ANALYSER                                                   | 6100                                                               |
| 55     | ELCID kit                                                                   | 11190                                                              |
| 56     | UNIVERSAL CALIBRATION SYSTEM                                                | 3050                                                               |
| 57     | NATURAL FREQUENCY TESTER                                                    | 3250                                                               |
| 58     | DIGITAL HARDNESS TESTER                                                     | 400                                                                |
| 59     | ADRE 208 VIBRATION ANALYSER                                                 | 8140                                                               |
| 60     | PCB DIAGNOSTIC REPAIR KIT                                                   | 2230                                                               |
| 61     | SECONDARY INJECTION RELAY TEST KIT                                          | 5900                                                               |
| 62     | MICRO OHM METER                                                             | 1620                                                               |
| 63     | DIGITAL MICRO OHM METER<br>MEASURING RANGE: 200 $\mu\Omega$ TO 20K $\Omega$ | 3620                                                               |
| 64     | PMI Machine OLYMPUS make                                                    | 3730                                                               |
| 65     | Mobile Lighting Mast -<br>9 metres (4X400 W)                                | 960                                                                |
| 66     | 10KVA RESISTANCE BRAZING MACHINE                                            | 160                                                                |

**RATES OF T & P HIRE CHARGES FOR ITEMS OTHER THAN CRANES & TRAILLERS  
ETC. FOR OUTSIDE AGENCIES**

| SL NO. | ITEM DESCRIPTION                                                                                         | REVISED RATES (Rs./ Day)<br>VALID FROM 01/06/2017 TO<br>31/05/2019 |
|--------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| 67     | RECURRENT SURGE OSCILLOGRAPH (RSO) TEST KIT WITH<br>PORTABLE HANDHELD OSCILLOSCOPE.                      | 510                                                                |
| 68     | HYDROGEN GAS LEAK DETECTOR                                                                               | 60                                                                 |
| 69     | STATOR WEDGE ANALYZER KIT WITH COMPLETE<br>ACCESSORIES                                                   | 5530                                                               |
| 70     | WEDGE DEFLECTION KIT                                                                                     | 90                                                                 |
| 71     | TILE PRESSING MACHINE FOR GAS TURBINE                                                                    | 300                                                                |
| 72     | INDUCTION BRAZING MACHINE                                                                                | 5410                                                               |
| 73     | MAGNETIC COHESIVE FORCE (MCF) EQUIPMENT                                                                  | 4040                                                               |
| 74     | ULTRASONIC FLOW METER                                                                                    | 200                                                                |
| 75     | PORTABLE VIBRATION ANALYSER (MODEL 811T)                                                                 | 50                                                                 |
| 76     | CENTRIFUGAL PUMP SET FOR ACID CLEANING (WITH MOTOR<br>AND PANEL) : PRESSURE -14KG/SQ CM. ; FLOW 60 M3/HR | 520                                                                |
| 77     | CENTRIFUGAL PUMP SET FOR ACID CLEANING (WITH MOTOR<br>AND PANEL) : PRESSURE -30KG/SQ CM. ; FLOW 15 M3/HR | 480                                                                |
| 78     | HI SPEED MEMORY RECORDER, MAKE -YOKOGAWA, MODEL<br>DL850E-Q-HE/B5/HD1                                    | 2010                                                               |
| 79     | TROLLEY MOUNTED HYDRAULIC JACK (100 MT)                                                                  | 1400                                                               |

  
11/6/17

# PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY

(On non-Judicial paper of appropriate value)

Bank Guarantee No.....

Date.....

To  
(Employer's Name and Address)

.....

Dear Sirs,

In accordance with the terms and conditions of your Invitation for Bids / Notice Inviting Tender No.....<sup>1</sup>(Tender Conditions) M/s.....  
..... having its registered office at .....<sup>2</sup>  
(hereinafter referred to as the 'Tenderer'), is submitting its bid for the work of..... for.....<sup>3</sup>(name of the Employer) at .....<sup>4</sup>. The Tender Conditions provide that the Tenderer shall pay a sum of Rs..... as Earnest Money Deposit in the form therein mentioned. The form of payment of Earnest Money Deposit includes Bank Guarantee executed by a Scheduled Bank.

In lieu of the stipulations contained in the aforesaid Tender Conditions that an irrevocable and unconditional Bank Guarantee against Earnest Money Deposit for an amount of .....<sup>5</sup> ..... is required to be submitted by the Tenderer as a condition precedent for participation in the said Tender and the Tenderer having approached us for giving the said Guarantee,

we, the .....[Name & address of the Bank] ..... having our Head Office at .....(hereinafter referred to as the Bank) being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer without any demur, merely on your first demand any sum or sums of Rs. ....<sup>5</sup> .....(\*)..... without any reservation, protest, and recourse and without the beneficiary needing to prove or demonstrate reasons for its such demand. Any such demand made by the 'Employer' shall be conclusive and binding on us irrespective of any dispute or difference raised by the Tenderer.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment hereunder and the Tenderer shall have no claim against us for making such payment.

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

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Tenderer and notwithstanding any security or other guarantee that the Employer may have in relation to the Tenderer's liabilities.

This Guarantee shall be irrevocable and shall remain in force upto and including .....<sup>6</sup> and shall be extended from time to time for such period as may be desired by the Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Tenderer but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms hereof. However, unless a demand or claim under this Guarantee is made on us in writing on or before the .....<sup>7</sup> we shall be discharged from all liabilities under this Guarantee.

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

Notwithstanding anything to the contrary contained hereinabove:

a) The liability of the Bank under this Guarantee shall not exceed.....<sup>5</sup>.....

b) This Guarantee shall be valid up to .....<sup>6</sup>

c) Unless the Bank is served a written claim or demand on or before \_\_\_\_\_<sup>7</sup> all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank

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

For and on behalf of  
(Name and seal of the Bank)

Date.....

Place of Issue.....

<sup>1</sup> *Details of the Invitation to Bid / Notice Inviting Tender*

<sup>2</sup> *Name and Address of the Tenderer*

<sup>3</sup> *Details of the Work*

<sup>4</sup> *Name and Address of BHEL Unit / Division / Region*

<sup>5</sup> *BG Amount in words and Figures*

<sup>6</sup> *Validity Date:*

<sup>7</sup> *Date of Expiry of Claim Period.*

**Note:**

1. The Bank Guarantee shall be valid for atleast six months and claim period shall be two months after validity date. In case the BG is submitted without claim period then the validity shall be for eight months.
2. Provide the Contact address, phone no and email id of the Bank

**INTEGRITY PACT****Between**

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

**and**

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

**Preamble**

The Principal intends to award, under laid-down organizational procedures, contract/s for BHEL: PSSR: SCT: 1827 - Murrum Blanketing works at 2X660MW Ennore SEZ STPP (on the ash dyke of NCTPS). The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

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

**Section 1- Commitments of the Principal**

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

- 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- 1.1.3 The Principal will exclude from the process all known prejudiced persons.

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

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

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

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

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

### **Section 4 - Compensation for Damages**

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the

contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

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

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

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

- 6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.
- 6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

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

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

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

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be

understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.
- 8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.
- 8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.
- 8.12 The word 'Monitor' would include both singular and plural.

## **Section 9 - Pact Duration**

- 9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.
- 9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

## **Section 10 - Other Provisions**

- 10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.
- 10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.



- 10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- 10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.



For & On behalf of the Principal

**संदीपन बिस्वास**

(Office Seal) **SANDIPAN BISWAS**

अपर महाप्रबंधक / उप संविदा

Addl. General Manager / Sub Contracting

बी.एच.ई.एल.-पी.एस.एस.आर / BHEL - P.S.S.R.

पेरियार ई.वी.आर.बिल्डिंग, / Periyar EVR Building

Place 690, अन्ना सालाई, नन्दनम, चेन्नई - 600 035.

690, Anna Salai, Nandanam, Chennai - 35.

Date-----

For & On behalf of the Bidder/

Contractor

(Office Seal)

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

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

\_\_\_\_\_

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

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

\_\_\_\_\_

**PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS**

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

- 7.** The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case within 1 month from the date of conclusion of the last hearing.
- 8.** Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.
- 9.** In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
- 10.** Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
- 11.** When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
- 12.** In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
- 13.** Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.
- 14.** In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after

seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.

- 15.** The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
- 16.** Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.
- 17.** In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
- 18.** A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
- 19.** The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
- 20.** Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.
- 21.** Unless otherwise provided for in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged

absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.

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

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

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

| <b>Sl No</b> | <b>Particulars</b>                       | <b>Amount</b>                                                                                                                                                                                                                             |
|--------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b>     | Sitting fees                             | Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.                                                                                                             |
| <b>2</b>     | Towards drafting of settlement agreement | In cases involving claim and/or counter-claim of up to Rs 5crores.<br>Rs 50,000/- (Sole Conciliator)<br>In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores.<br>Rs 75,000 (per Conciliator) |

| <b>Sl No</b> | <b>Particulars</b>                                                                                                                                                          | <b>Amount</b>                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                                                                                                                                                             | <p>In cases involving claim and/or counter-claim of more than Rs 10 crores.</p> <p>Rs 1,00,000/- (per Conciliator)</p> <p>Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on the,</p> <p>Signing of the Settlement Agreement after approval of the Competent Authority</p> <p>or</p> <p>Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.</p> |
| <b>3</b>     | Secretarial expenses                                                                                                                                                        | <p>Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC.</p> <p>Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC</p>                                                                                                                                                                                                                   |
| <b>4</b>     | Travel and transportation and stay at outstation Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL) | As per entitlement of the equivalent officer (pay scale wise) in BHEL.                                                                                                                                                                                                                                                                                                                                             |
|              | Others                                                                                                                                                                      | <p>As per the extant entitlement of whole time Functional Directors in BHEL.</p> <p>Ordinarily, the IEC Member(s) would be entitled to travel by air Economy Class.</p>                                                                                                                                                                                                                                            |
| <b>5</b>     | Venue for meeting                                                                                                                                                           | Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region /                                                                                                                                                                                                         |

| <b>Sl No</b> | <b>Particulars</b> | <b>Amount</b>                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                    | Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately. |

- 24.** The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.
- 25.** If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.
- 26.** The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.
- 27.** Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.
- 28.** The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 4 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.
- 29.** The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement,

except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.

- 30.** The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
- a.** Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
  - b.** admissions made by the other party in the course of the Conciliator proceedings;
  - c.** proposals made by the Conciliator;
  - d.** The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
- 31.** The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
- 32.** None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
- 33.** The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.
- 34.** The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.

**STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE  
IEC BY BOTH THE PARTIES**

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

| <b>SI. No.</b> | <b>Description of<br/>claim(s)/Counter Claim</b> | <b>Amount (in<br/>INR)Or currency<br/>applicable in the<br/>contract</b> | <b>Relevant<br/>contract<br/>clause</b> |
|----------------|--------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|
|                |                                                  |                                                                          |                                         |
|                |                                                  |                                                                          |                                         |
|                |                                                  |                                                                          |                                         |

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

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

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

To,

M/s. (Stakeholder's name)

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

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

Dear Sir/Madam,

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

| Sl. No. | Claim description | Amount involved |
|---------|-------------------|-----------------|
|         |                   |                 |

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

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

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

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

Thanking you  
Yours faithfully

**Representative of BHEL**

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

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

To,

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

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

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

Dear Sir/Madam,

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

| Sl.<br>No. | Claim description | Amount involved |
|------------|-------------------|-----------------|
|            |                   |                 |

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

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

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

Thanking you  
Yours faithfully

**Representative of the Stakeholder**

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

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

To,

M/s. (Stakeholder's name)

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

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

Sir,

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

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

Name and contact details of Conciliator(s)

a) .....

b) .....

c) .....

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

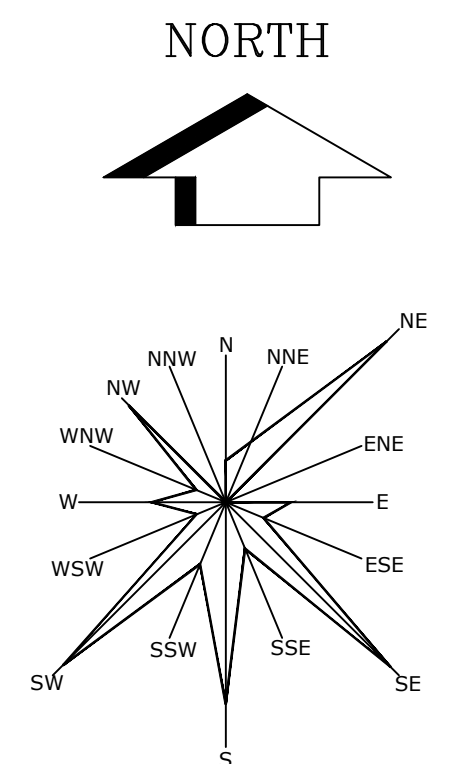
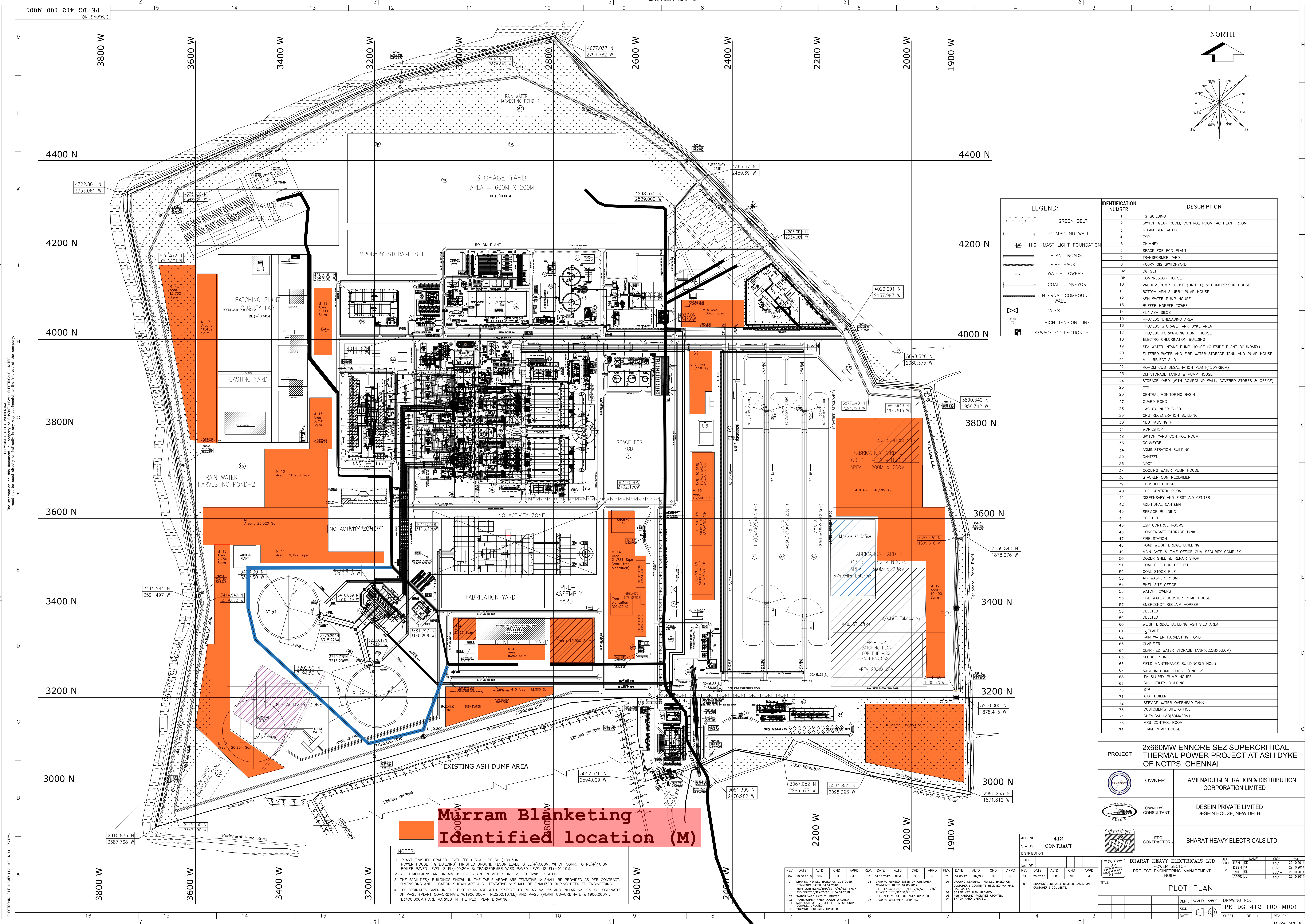
Yours faithfully,

**Representative of BHEL**

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

Encl: As above

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



**LEGEND:**

- GREEN BELT
- COMPOUND WALL
- HIGH MAST LIGHT FOUNDATION
- PLANT ROADS
- PIPE RACK
- WATCH TOWERS
- COAL CONVEYOR
- INTERNAL COMPOUND WALL
- GATES
- HIGH TENSION LINE
- SEWAGE COLLECTION PIT

| IDENTIFICATION NUMBER | DESCRIPTION                                                |
|-----------------------|------------------------------------------------------------|
| 1                     | TG BUILDING                                                |
| 2                     | SWITCH GEAR ROOM, CONTROL ROOM, AC PLANT ROOM              |
| 3                     | STEAM GENERATOR                                            |
| 4                     | ESP                                                        |
| 5                     | CHIMNEY                                                    |
| 6                     | SPACE FOR FGD PLANT                                        |
| 7                     | TRANSFORMER YARD                                           |
| 8                     | 400KV GIS SWITCHYARD                                       |
| 9a                    | DG SET                                                     |
| 9b                    | COMPRESSOR HOUSE                                           |
| 10                    | VACUUM PUMP HOUSE (UNIT-1) & COMPRESSOR HOUSE              |
| 11                    | BOTTOM ASH SLURRY PUMP HOUSE                               |
| 12                    | ASH WATER PUMP HOUSE                                       |
| 13                    | BUFFER HOPPER TOWER                                        |
| 14                    | FLY ASH SILOS                                              |
| 15                    | HFO/LDO UNLOADING AREA                                     |
| 16                    | HFO/LDO STORAGE TANK DYKE AREA                             |
| 17                    | HFO/LDO FORWARDING PUMP HOUSE                              |
| 18                    | ELECTRO CHLORINATION BUILDING                              |
| 19                    | SEA WATER INTAKE PUMP HOUSE (OUTSIDE PLANT BOUNDARY)       |
| 20                    | FILTERED WATER AND FIRE WATER STORAGE TANK AND PUMP HOUSE  |
| 21                    | MILL REJECT SILO                                           |
| 22                    | RO-DM CUM DESALINATION PLANT(150Mx80M)                     |
| 23                    | DM STORAGE TANKS & PUMP HOUSE                              |
| 24                    | STORAGE YARD (WITH COMPOUND WALL, COVERED STORES & OFFICE) |
| 25                    | ETP                                                        |
| 26                    | CENTRAL MONITORING BASIN                                   |
| 27                    | GUARD POND                                                 |
| 28                    | GAS CYLINDER SHED                                          |
| 29                    | CPU REGENERATION BUILDING                                  |
| 30                    | NEUTRALISING PIT                                           |
| 31                    | WORKSHOP                                                   |
| 32                    | SWITCH YARD CONTROL ROOM                                   |
| 33                    | CONVEYOR                                                   |
| 34                    | ADMINISTRATION BUILDING                                    |
| 35                    | CANTEEN                                                    |
| 36                    | NDCT                                                       |
| 37                    | COOLING WATER PUMP HOUSE                                   |
| 38                    | STACKER CUM RECLAIMER                                      |
| 39                    | CRUSHER HOUSE                                              |
| 40                    | CHP CONTROL ROOM                                           |
| 41                    | DISPENSARY AND FIRST AID CENTER                            |
| 42                    | ADDITIONAL CANTEN                                          |
| 43                    | SERVICE BUILDING                                           |
| 44                    | DELETED                                                    |
| 45                    | ESP CONTROL ROOMS                                          |
| 46                    | CONDENSATE STORAGE TANK                                    |
| 47                    | FIRE STATION                                               |
| 48                    | ROAD WEIGH BRIDGE BUILDING                                 |
| 49                    | MAIN GATE & TIME OFFICE CUM SECURITY COMPLEX               |
| 50                    | DOZER SHED & REPAIR SHOP                                   |
| 51                    | COAL PILE RUN OFF PIT                                      |
| 52                    | COAL STOCK PILE                                            |
| 53                    | AIR WASHER ROOM                                            |
| 54                    | BHEL SITE OFFICE                                           |
| 55                    | WATCH TOWERS                                               |
| 56                    | FIRE WATER BOOSTER PUMP HOUSE                              |
| 57                    | EMERGENCY RECLAIM HOPPER                                   |
| 58                    | DELETED                                                    |
| 59                    | DELETED                                                    |
| 60                    | WEIGH BRIDGE BUILDING ASH SILO AREA                        |
| 61                    | H <sub>2</sub> PLANT                                       |
| 62                    | RAIN WATER HARVESTING POND                                 |
| 63                    | CLARIFIER                                                  |
| 64                    | CLARIFIED WATER STORAGE TANK(62.5MX33.0M)                  |
| 65                    | SLUDGE SUMP                                                |
| 66                    | FIELD MAINTENANCE BUILDINGS(3 Nos.)                        |
| 67                    | VACUUM PUMP HOUSE (UNIT-2)                                 |
| 68                    | TA SLURRY PUMP HOUSE                                       |
| 69                    | SILO UTILITY BUILDING                                      |
| 70                    | STP                                                        |
| 71                    | AUX. BOILER                                                |
| 72                    | SERVICE WATER OVERHEAD TANK                                |
| 73                    | CUSTOMER'S SITE OFFICE                                     |
| 74                    | CHEMICAL LAB(30MX20M)                                      |
| 75                    | MRS CONTROL ROOM                                           |
| 76                    | FOAM PUMP HOUSE                                            |

- NOTES:**
1. PLANT FINISHED GRADED LEVEL (FGL) SHALL BE RL (+)9.50M. POWER HOUSE (TG BUILDING) FINISHED GROUND FLOOR LEVEL IS EL(+10.00M, WHICH CORR. TO RL(+10.00M. BOILER PAVED LEVEL IS EL(+10.20M & TRANSFORMER YARD PAVED LEVEL IS EL(+10.10M.
  2. ALL DIMENSIONS ARE IN MM & LEVELS ARE IN METER UNLESS OTHERWISE STATED.
  3. THE FACILITIES/ BUILDINGS SHOWN IN THE TABLE ABOVE ARE TENTATIVE & SHALL BE PROVIDED AS PER CONTRACT. DIMENSIONS AND LOCATION SHOWN ARE ALSO TENTATIVE & SHALL BE FINALIZED DURING DETAILED ENGINEERING.
  4. CO-ORDINATES GIVEN IN THE PLOT PLAN ARE WITH RESPECT TO PILLAR No. 25 AND PILLAR No. 26. CO-ORDINATES OF P-25 (PLANT CO-ORDINATE W:1900.00M., N:3200.107M.) AND P-26 (PLANT CO-ORDINATE W:1900.00M., N:3400.00M.) ARE MARKED IN THE PLOT PLAN DRAWING.

| REV. | DATE       | ALTO | CHD | APPO | REV. | DATE       | ALTO | CHD | APPO | REV. | DATE     | ALTO | CHD | APPO |
|------|------------|------|-----|------|------|------------|------|-----|------|------|----------|------|-----|------|
| 01   | 10.08.2014 | CHD  | SK  | SK   | 01   | 04.10.2017 | CHD  | SK  | SK   | 01   | 07.03.17 | CHD  | SK  | SK   |
| 02   | 10.08.2014 | CHD  | SK  | SK   | 02   | 04.10.2017 | CHD  | SK  | SK   | 02   | 07.03.17 | CHD  | SK  | SK   |
| 03   | 10.08.2014 | CHD  | SK  | SK   | 03   | 04.10.2017 | CHD  | SK  | SK   | 03   | 07.03.17 | CHD  | SK  | SK   |
| 04   | 10.08.2014 | CHD  | SK  | SK   | 04   | 04.10.2017 | CHD  | SK  | SK   | 04   | 07.03.17 | CHD  | SK  | SK   |
| 05   | 10.08.2014 | CHD  | SK  | SK   | 05   | 04.10.2017 | CHD  | SK  | SK   | 05   | 07.03.17 | CHD  | SK  | SK   |

|              |          |
|--------------|----------|
| JOB NO.      | 412      |
| STATUS       | CONTRACT |
| DISTRIBUTION |          |
| TO           |          |
| BY           |          |
| DATE         |          |
| REV.         |          |
| DATE         |          |
| REV.         |          |
| DATE         |          |
| REV.         |          |
| DATE         |          |

**PROJECT** 2x660MW ENNORE SEZ SUPERCRITICAL THERMAL POWER PROJECT AT ASH DYKE OF NCTPS, CHENNAI

|  |                                                                          |
|--|--------------------------------------------------------------------------|
|  | <b>OWNER</b> TAMILNADU GENERATION & DISTRIBUTION CORPORATION LIMITED     |
|  | <b>OWNER'S CONSULTANT</b> DESEIN PRIVATE LIMITED DESEIN HOUSE, NEW DELHI |
|  | <b>EPC CONTRACTOR</b> BHARAT HEAVY ELECTRICALS LTD.                      |

**BARHAT HEAVY ELECTRICALS LTD**  
POWER SECTOR  
PROJECT ENGINEERING MANAGEMENT  
NOIDA

| DEPT   | NAME | SIGN | DATE       |
|--------|------|------|------------|
| DESIGN | SK   | sd/- | 28.10.2014 |
| DESIGN | SK   | sd/- | 28.10.2014 |
| DESIGN | SK   | sd/- | 28.10.2014 |
| DESIGN | SK   | sd/- | 28.10.2014 |

**PLOT PLAN**

DEPT. SCALE: 1:2500  
SIGN  
DATE

DRAWING NO. PE-DG-412-100-M001  
SHEET 1 OF 1  
REV. 04

FORMAT SIZE A0