

# **TENDER SPECIFICATION NO. BHE/PW/PUR/KNT-SHED/646**

**FOR  
CONSTRUCTION OF TWO CLOSED STORAGE SHEDS AND ITS  
ELECTRIFICATION FOR STATION, C&I PACKAGE**

**AT**

**NTPC KORBA 1X500MW STPS KORBA**

## **Part- I -- TECHNICAL BID**

**( Volume-I )**

**SPECIAL & GENERAL CONDITIONS OF  
CONTRACT,QR,NIT**

BOOK NO.



**BHARAT HEAVY ELECTRICALS LIMITED**  
(A GOVERNMENT OF INDIA UNDERTAKING)  
POWER SECTOR - WESTERN REGION  
SHREEMOHINI COMPLEX  
345, KINGS WAY - NAGPUR 440 001

<b>C o n t e n t s</b>			
<b>SN</b>	<b>Description</b>	<b>Section/ Appendix No.</b>	<b>No. of Pages</b>
1.	Tender Specification issue details	--	1
2.	Procedure For Submission of Sealed Tender	--	2
3.	Project Information	--	1
4.	Check List	--	2
5.	Declaration by Bidder's Authorized Representative	--	1
6.	Certificate of <b>No-Deviation</b>	--	1
7.	Notice Inviting Tender (includes Qualification Requirements etc.)	--	<b>\$</b>
8.	General Conditions of Contract #	Sections-1 & 2	<b>#</b>
9.	Offer of Bidder	Section-3	1
<b>Special Conditions of Contract</b>			
10.	Scope of Work	Section-4	5
11.	Obligations Of The Contractor (Tools, Tackles, Consumables etc.)	Section-5	7
12.	Contractor's Obligations in Regard to Employment of Supervisory Staff and Workmen	Section-6	2
13.	Obligations of BHEL	Section-7	2
14.	Inspection/Quality Assurance/Quality Control/Statutory Inspection	Section-8	3
15.	Safety, Occupational Health and Environmental Management	Section-9	15
16.	Drawings And Documents	Section-10	1
17.	Time Schedule/Mobilization/ Progress Monitoring/ Overrun.	Section-11	4
18.	Terms of Payment	Section-12	2
19.	Details to be furnished by Bidder	Section-13	1
20.	Insurance	Section-14	1
21	Earnest Money Deposit and Security Deposit	Section-15	2
<b>Appendices</b>			
22	LIST OF T&P TO BE PROVIDED BY BHEL	APPENDIX-I	1

<b>C o n t e n t s</b>			
<b>SN</b>	<b>Description</b>	<b>Section/ Appendix No.</b>	<b>No. of Pages</b>
23	LIST OF T&PS TO BE PROVIDED BY CONTRACTOR	APPENDIX-II	2
24	ANALYSIS OF UNIT RATES QUOTED	APPENDIX-III	1
25	MONTH WISE MANPOWER DEPLOYMENT PLAN	APPENDIX-IV	1
26	CONTRACTOR'S T&P DEPLOYMENT PLAN	APPENDIX-V	1
27	DETAILS OF CONCURRENT COMMITMENT	APPENDIX-VI	1
28	DETAILS OF SIMILAR JOBS EXECUTED IN LAST SEVEN YEARS	APPENDIX-VII	1
29	DETAILS OF DRAWINGS	APPENDIX-VIII	#
30	Part-II (Price Bid)		@
31	Drawings for civil work for tender purpose		#

#### **LEGEND:**

**\$:** PLACED BEFORE 'GENERAL CONDITIONS OF CONTRACT' IN BOTH HARD AND SOFT COPY DOCUMENTS.

**#:** ATTACHED AT THE END OF HARD COPY OF TENDER SPECS. PART-I (TECHNICAL BID) AND AS A SEPARATE FILE TITLED 'WEB\_NIT\_GCC' AS SOFT COPY HOSTED IN WEB PAGE.

**@:** ISSUED AS SEPARATE BOOKLET IN HARD COPY AS 'PRICE\_BID'. SOFT COPY HOSTED IN WEB PAGE.

**NOTE:** Bidders must Visit BHEL web site [www.bhel.com](http://www.bhel.com) for NIT, Qualifying Requirement of this work( QR ), GCC etc. Further all corrigenda, addenda, amendments and clarifications to Tender Specifications will be hosted in this web page. Bidders shall keep themselves updated with all such amendments.

## **BHARAT HEAVY ELECTRICALS LIMITED**

(A GOVERNMENT OF INDIA UNDERTAKING)

POWER SECTOR - WESTERN REGION

345, KINGS WAY - NAGPUR 440 001

### **TENDER SPECIFICATION NO. : BHE/PW/PUR/KNT-SHED/646**

**NAME OF WORK:** CONSTRUCTION OF TWO CLOSED STORAGE SHEDS AND ITS ELECTRIFICATION FOR STATION, C&I PACKAGE AT 1X500 MW STPS NTPC KORBA.

**EARNEST MONEY DEPOSIT:** EMD IS RS 1,50,000/- Please see Section-15 of Special Conditions of Contract.

LAST DATE AND TIME FOR

RECEIPT OF OFFERS:

Please visit web page [www.bhel.com](http://www.bhel.com) -> “Tender Notification” and “View Corrigendum”

THESE TENDER DOCUMENTS CONTAINING PART-I TECHNICAL BID VOL –I AND PART- II (VOL-II) PRICE BID, ARE ISSUED TO:

M/s. ....

.....

#### **PLEASE NOTE:**

- 1) THESE TENDER DOCUMENTS ARE NOT TRANSFERABLE.
- 2) TENDERER SHALL NOTE THAT THEIR OFFER WILL BE CONSIDERED SUBJECT TO THE APPROVAL OF BHEL'S CUSTOMER M/s NTPC.

For Bharat Heavy Electricals Limited

SR MANAGER (PURCHASE)

PLACE: NAGPUR

DATE:

BHARAT HEAVY ELECTRICALS LIMITED  
(A Government of India Undertaking)  
POWER SECTOR - WESTERN REGION-SAS  
345, KINGS WAY - NAGPUR 440 001  
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**Procedure for Submission of Sealed Tenders & Instructions to Bidders**

The bidder must submit their tenders as required in two parts in separate sealed covers prominently super scribed as part-I technical bid and part-II price bid and also indicating on each of the covers the tender specification number and due date and time as mentioned in the tender notice.

**Part-I (Technical Bid) Cover-I:**

Excepting rate schedule, all other schedules, data sheets and details called for in the specification shall be enclosed in part-I "Technical Bid" only.

**EARNEST MONEY DEPOSIT (EMD)**

**EMD of Rs. 1.50 lakh (Rupees One Lakhs Fifty thousand only)** shall be included in the Technical Bid. **EMD shall be paid by bidders only in the manner specified in Section-15 Special Conditions of Contract.** No other mode of payment of EMD shall be acceptable. Provisions under clause no. 1.4 of the General Conditions of Contract shall not be applicable for this tender.

Bidder may opt to deposit "One Time EMD" of Rs. 2.0 lacks with this office (BHEL:PSWR: Nagpur) which will enable them to participate in the present and all the future tender enquiries in respect of Erection and Commissioning services issued from this office. Interested bidders may send their explicit consent for converting the present EMD into a "One Time EMD" in their offer.

Bidders who have already submitted such "One Time EMD" will be exempted from submission of any EMD for this tender. However bidder shall furnish details of the "One Time EMD" in his offer including the Check List furnished herein.

**Part-II (Price Bid) Cover-II:**

All indications of price shall be given in this part-II "Price Bid". **EMD shall not be included in this cover.**

These two separate covers-I and II (part-I and part-II) shall together be enclosed in a third envelope (cover-III) along with requisite EMD as indicated earlier and this sealed cover shall be super scribed and submitted to Addl. Gen Manager (Purchase) at the above-mentioned address on or before the due date as indicated.

The qualified bidder will be intimated separately about the status of their offer.

Bidders are requested to make specific note of the following conditions:

Contractor should have adequate resources including major T&P at his disposal for this job.

Contractor should have sound financial stability.

Bidder should meet quality requirement regarding workmanship, deployment of personnel, erection tools and necessary inspection, measurement & testing instruments.

All information as called for in various appendices and clauses of tender specification should be furnished in completeness. Please refer the checklist.

The bidder, if any, shall obtain clarification on Tender Specifications, before submitting their offer.

**Offers must be submitted without any deviation.**

Offers received with any deviation or without relevant information as described above are liable to be rejected. **Price bids received in the form other than specified in Part-II (price bid) are liable to be rejected.**

**Bidder must sign & stamp all pages of this tender specification as an acceptance of tender conditions.**

**Bidder shall note that their offer will be considered subject to the approval of BHEL's customer.**

## **PROJECT INFORMATION**

### **1.00.00 BACKGROUND**

Korba Super Thermal Power Project, Stage-III (1x500MW), a pit head coal based thermal Power Project, is located in Korba district of Chhattisgarh State. Stage-I (3x200 MW) and Stage-II (3x500 MW) of the project are under commercial operation. Basic inputs i.e, coal, water and land have already been tied up. The project is proposed to be implemented as Merchant Plant for the benefits of States and UTs of Western Region.

### **1.01.00 Location and Approach**

The site is located on the western bank of river Hasdeo near Korba town in Korba District of Chhattisgarh State. The site is contiguous to the Right Bank Irrigation Canal originating from Hasdeo Barrage. BALCO's aluminium plant and two power stations are already located on both the banks of Hasdeo river in the vicinity.

Korba town is a broad gauge railhead 37 kms. Away from Champa railway station on Calcutta-Nagpur main line of South-Eastern Central Railway and is approximately 510 kms. From Nagpur by rail. The site is very close to all weather road between Kotghora & Korba and is approximately 110 kms from Bilaspur and 10 kms from Korba town. The nearest airport is Raipur located at a distance of approximately 250 kms. From the project site.

CHECK LIST		
(VIDE PARA 1.3 OF SECTION-I - GENERAL CONDITIONS OF CONTRACT)		
1	Name of the Bidder with Postal Address for Correspondence	
2	Name of Contact Person with Telephone & Fax No.	Mr./Ms Tel No. Fax No.
3	Nature of the firm	PROPRIETARY / PARTNERSHIP / LIMITED CO.
4	Details of EMD Please Indicate whether 1) One Time EMD or, 2) Only for this Tender	DD No. .... DD Date..... Name of Bank..... Amount: Rs.....
5	Validity of Offer (BHEL's Requirement: 180 days from Last Date for tender submission)	
6	Mobilization Time (Please refer Section-11 of SCC)	
7	Whether Bidder has visited the project site and acquainted themselves with the local conditions and situations.	YES/NO
8	Whether "Certificate of No-Deviation" Furnished	YES/NO
9	Details of similar jobs executed during the last SEVEN years as in " <b>Appendix-VII</b> " enclosed	YES/NO
10	Whether copies of previous Work Orders (with detailed BOQ and total order value) and Completion Certificates in support of above furnished	YES/NO
11	Details of Concurrent Jobs Furnished in " <b>Appendix-VI</b> " furnished	YES/NO
12	Headquarter Organization Chart furnished	YES/NO
13	Names & Particulars of Directors/Partners/Proprietor Furnished	YES/NO
14	Proposed Site Organization Chart indicating executives and supervisors furnished	YES/NO



CHECK LIST		
(VIDE PARA 1.3 OF SECTION-I - GENERAL CONDITIONS OF CONTRACT)		
15	Financial Viability furnished as in <b>Annexure-I of GCC</b>	YES/NO
16	Profit & Loss account for the preceding three financial years furnished	YES/NO
17	Copy of Latest <b>Solvency Certificate from Govt. Authority or Certification by Bidder's Banker on Overdraft &amp; BG Limits</b> is Furnished (Certificate shall not be older than six months from the Last Date for offer submission)	YES/NO
18	Latest <b>Income Tax Clearance Certificate or copy of IT Return along with copy of PAN Card</b> is Furnished	YES/NO
19	Monthly Manpower Deployment plan as in ' <b>Appendix-IV</b> ' enclosed	YES/NO
20	Deployment plan for major T&P and MMD enclosed as in ' <b>Appendix-V</b> '	YES/NO
21	Month-wise Erection & Commissioning plan enclosed	YES/NO
22	Analysis of Unit Rate Quoted as in ' <b>Appendix-III</b> ' furnished	YES/NO
23	List of other tools and plants/tackles/ instruments contractor proposes to deploy for the work and special tools and instruments in his possession.	ENCLOSED / NOT ENCLOSED
24	Whether the bidder has left any job unfinished? If so, give reasons.	YES/NO
25	Whether any client has terminated the contractor's work before completion? If so, furnish reasons for the same	YES/NO
26	Whether the bidder has understood all Quality Control & Quality Assurance requirements?	YES/NO
27	Whether the bidder is aware of all safety rules/codes? Whether the list of safety equipments proposed to be employed for this work is enclosed.	YES/NO
28	Whether Power of Attorney in favour of the person making this offer enclosed?	YES/NO
29	Whether all the pages are read, understood and signed and the signed copy of tender book submitted?	YES/NO
29	<b>BIDDER MUST FURNISH HERE THE FOLLOWING DETAIL FOR RELEASING EMD AND OTHER PAYMENTS DULY ENDORSED BY BANK ( IE SIGN &amp; STAMP BY BANK ).</b>  1 Name of the Company----- 2 Name of Bank----- 3 Name of Bank Branch----- 4 City/Place----- 5 Account Number----- 6 Account type----- 7 IFSC code of the Bank Branch----- 8. MICR Code of the Bank Branch-----	YES/NO

Note: strike off 'yes' or 'no' as applicable

Date:

Signature of Bidder

### DECLARATION BY BIDDER'S AUTHORIZED REPRESENTATIVE

I, \_\_\_\_\_ HEREBY CERTIFY THAT ALL THE INFORMATION AND DATA FURNISHED BY ME WITH REGARD TO THE TENDER SPECIFICATION NO. **BHE/PW/PUR/KNT-SHED/646** ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I HAVE GONE THROUGH THE SPECIFICATIONS, CONDITIONS AND STIPULATIONS IN DETAIL AND AGREE TO COMPLY WITH THE REQUIREMENTS AND INTENT OF THE SPECIFICATION. I FURTHER CERTIFY THAT I AM DULY AUTHORIZED REPRESENTATIVE OF THE UNDER-MENTIONED TENDERER AND A VALID POWER OF ATTORNEY TO THIS EFFECT IS ALSO ENCLOSED.

AUTHORISED REPRESENTATIVE'S SIGNATURE WITH  
NAME AND ADDRESS

DATE:

TENDERER'S NAME AND ADDRESS

## CERTIFICATE OF NO DEVIATION

**TENDER SPECIFICATION NO.**

**BHE/PW/PUR/KNT-SHED/646**

**I/WE, M/s .....**

HEREBY CERTIFY THAT NOTWITHSTANDING ANY CONTRARY INDICATIONS/ CONDITIONS ELSEWHERE IN OUR OFFER DOCUMENTS, I/WE HAVE NEITHER SET ANY TERMS AND CONDITIONS NOR THERE IS ANY DEVIATION TAKEN FROM THE CONDITIONS OF BHEL'S TENDER SPECIFICATIONS, EITHER TECHNICAL OR COMMERCIAL, AND I/WE AGREE TO ALL THE TERMS AND CONDITIONS MENTIONED IN BHEL'S TENDER SPECIFICATION WITH ASSOCIATED AMENDMENTS AND CLARIFICATIONS.

DATE:

SIGNATURE OF BIDDER

**SECTION-3**  
**OFFER OF THE BIDDER**

To,  
SR. MANAGER (PURCHASE)  
BHARAT HEAVY ELECTRICALS LIMITED  
POWER SECTOR - WESTERN REGION  
SHREEMOHINI COMPLEX  
345, KINGS WAY  
NAGPUR 440 001

DEAR SIR,

I/WE HEREBY OFFER TO CARRY OUT THE WORK DETAILED IN TENDER SPECIFICATION NO. **BHE/PW/PUR/KNT-SHED/646** FOR 500 MW, UNIT # 7 **NTPC, KORBA THERMAL POWER PLANT**, ISSUED BY BHARAT HEAVY ELECTRICALS LIMITED, POWER SECTOR-WESTERN REGION, NAGPUR, IN ACCORDANCE WITH THE TERMS AND CONDITIONS THEREOF.

I/WE HAVE CAREFULLY PERUSED THE FOLLOWING DOCUMENTS CONNECTED WITH THE ABOVE WORK AND AGREE TO ABIDE BY THE SAME.

1. INSTRUCTIONS TO TENDERERS
2. GENERAL CONDITIONS OF CONTRACT
3. SPECIAL CONDITIONS OF CONTRACT
4. OTHER SECTIONS, APPENDICES, SCHEDULES AND DRAWINGS.

I/WE HAVE DEPOSITED / FORWARDED HERewith THE EARNEST MONEY DEPOSIT AS SPECIFIED IN THE TENDER SPECIFICATION. DETAILS OF EMD PAYMENT ARE FURNISHED IN THE CHECK LIST.

EMD SHALL BE REFUNDED SHOULD OUR OFFER NOT BE ACCEPTED / EMD **NEED NOT BE REFUNDED AND THE AMOUNT MAY BE TREATED AS "ONE TIME EMD" FOR ERECTION AND COMMISSIONING TENDERS OF BHEL-PSWR, NAGPUR.** SHOULD OUR OFFER BE ACCEPTED, I/WE FURTHER AGREE TO DEPOSIT SECURITY DEPOSIT FOR THE WORK AS PROVIDED FOR IN THE TENDER SPECIFICATION WITHIN THE STIPULATED TIME AS MAY SBE INDICATED BY BHEL, POWER SECTOR-WESTERN REGION, NAGPUR.

OR,

WE HAVE ALREADY DEPOSITED ONE TIME EMD OF Rs. 2,00,000/- (RUPEES TWO LACS ONLY), DETAILS OF WHICH ARE FURNISHED IN THE CHECK LIST.

I/WE FURTHER AGREE TO EXECUTE ALL THE WORKS REFERRED TO IN THE SAID DOCUMENTS UPON THE TERMS AND CONDITIONS CONTAINED OR REFERRED TO THEREIN AND AS DETAILED IN THE APPENDICES ANNEXED THERETO.

PLACE:

SIGNATURE OF TENDERER:

DATE:

ADDRESS:

WITNESSES WITH THEIR ADDRESS

SIGNATURE

NAME

ADDRESS

1.

2.

**SECTION - 4**  
**SPECIAL CONDITIONS OF CONTRACT**

**4.0 SCOPE OF WORK**

**A)**

1. Civil works related to construction of Closed storage sheds of size-60M x 15M – 2 Nos.
2. Electrification of storage sheds.

Contractor if required may visit the NTPC KORBA site to get acquainted with site conditions, local rules & regulations and type of store sheds/structural materials. No any extra claim of above ground shall be entertained.

**4.1 Responsibility of the Contractor**

The contractor shall engage all the unskilled, skilled and especially skilled labour including fabricators, welders and fitters etc. and supervisory staff. Only trained and competent personnel with previous experience in the job shall be employed. However, BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor. BHEL reserves the right to insist on removal of any employee of the contractor at any time, if they found him unsuitable. The contractor shall be bound to follow the instruction of BHEL.

**4.1.2**

All the materials like steel, ventilators, rolled shutters, trusses, structural members, foundation bolts, MS bars, painting materials, AC Sheets, MS square bar and necessary electric goods etc. shall be supplied by the contractor as per the specification mentioned in the tender/Indian standard specification. The contractor is required to quote their rates inclusive of cost of all materials, labor, etc. BHEL reserves the right to inspect and reject any material not found satisfactory.

**4.1.3 General**

**4.1.3.1**

During execution of the job, it is very essential that proper and adequate inspection should be made constantly by the contractor to maintain quality of workmanship and to ensure that deviations from Indicative BHEL drawings not exceed the permissible limits, which shall be approved by BHEL. The contractor shall submit test reports of all materials being procured by them for the job and also offer for inspection by BHEL. All the testing charges shall be borne by the contractor. BHEL engineer shall carry out the inspection of quality of material being purchased/ arranged, quality/composition of materials used during construction work and workmanship. Decision of BHEL engineer shall be binding on the contractor.

Contractor shall furnish the manufacturers test certificate for the steel & cement procured by them. Apart from this all the field test shall be arranged by contractor for cement, bricks, coarse & fine aggregates either at site or near by Field Quality Lab. approved by BHEL if so desired by BHEL's engineer. All the expenses in these regards shall be borne by contractor.

Contractor shall procure reinforced/ structural steel & cement from reputed manufacturer & approval for the same shall be obtained from BHEL well in advance before ordering for the materials.

**4.1.3.2**

The contractor shall visit the site and ascertain the local conditions, entry and traffic restrictions, all obstructions in the area and also ascertain all site conditions and particularly the sub-soil conditions etc. The contractor shall carry out the survey to study the properties of soil/sub soil like strength to withstand the weight of structure during all weather conditions without sinking of foundation. If any of such defects like cracks, sinking of foundation etc. occur after completion of work till the performance guarantee period, it shall be rectified by contractor free of cost including the supply of materials required. No claim shall be entertained on this account under any circumstances from the contractor.

#### 4.1.3.3

The contractor shall provide and maintain at his own cost pumps and other equipment to keep the work free from water and continue to do so until the handing over of the work. The contractor shall clear all trees, rubbish, vegetation, brickbats etc. And dispense them suitably in allotted areas at his own cost.

#### 4.1.3.4

The contractor shall take adequate precautions to ensure complete safety and prevention of accidents at site. The safety precautions shall conform to IS codes wherever applicable.

#### 4.1.3.5

The contractor shall level the site in accordance with the sequence of earth leveling to maintain the proper gradient as per the instruction of BHEL; as soon as construction activity is over. Payment towards this shall be released as per the relevant items available in B.O.Q.

#### 4.1.3.6

The work though not specifically mentioned either in the drawings or in the tender specification but are needed to complete the work as per site requirement & instruction of Engineer are also in the scope of this contract & to be erected to the entire satisfaction, for which the payment shall be released as per the respective item rate of Rate Schedule. If the item is not available in the rate schedule the rate shall be derived as per CPWD rate schedule latest version.

#### 4.1.3.7

The contractor shall provide and maintain at his own cost all T & P for carry out the work. The T & P shall be for fabrication of the structures and for the purpose of erection of columns, trusses, purlins bracings etc complete.

### 4.2

The Indicative drawings and specifications will form part of the tender documents. BHEL reserves the right to modify/alter the tender drawings, if necessary during the actual execution at site.

### 4.3 Specification for Civil Works for Closed Sheds

#### 4.3.1

Standard specifications for various items of work for construction as per the relevant IS-codes (latest edition) shall be applicable for this work. The work has to be executed as per standard specification and drawings to the satisfaction of BHEL. Please refer Appendix- VII for Indicative Drawings.

#### **1) Arrangement of Closed Storage Sheds and related foundation civil work- As per sketch enclosed.**

These drawings/sketches are indicative and strictly for tendering purpose, only meant to give an idea to tenderers about nature of job. If any changes is felt necessary by BHEL Engineer to

suit site requirement, the same shall be done by contractor as per revised sketches/drawings given by BHEL engineer. Contractor shall ensure/ascertain the stability, safety of the said work. Any modification/variation from the said drawings, if necessary as suggested by the contractor will have to be approved by BHEL in writing. **Depth of the foundation shall be ascertained mutually after knowing the soil condition at site. The depth of foundation should be minimum 300mm in the original/virgin soil.**

#### 4.3.2

Excavation of foundation, trenches shall be made as per IS specification.

#### 4.3.3

Any filling/loose soil met below the foundation shall be made up with lean cement concrete 1:4:8 mix.

#### 4.3.4

Basement and sides of the foundation wall shall be filled in with selected excavated earth including watering, consolidation etc. Complete as per IS specification.

#### 4.3.5

The excess/unutilized suitable earth and debris shall be disposed & leveled to the proposed mentioned area for development. All unusable earth debris, trees, vegetations etc. shall be disposed off at a location earmark by BHEL /Client. Rate quoted for excavation shall be inclusive of such disposal.

#### 4.3.6

**PCC:** below foundation and PCC capping: This shall include supplying and placing PCC at all depths below plinth level including form work, curing, all materials, tools and plants and labour complete. Concrete of M10/M15 grade as defined in IS- 456 with 40mm/20mm and downgraded stone aggregates as per drawing. Nominal mix (volumetric) shall be allowed to use as per the guidelines of IS-456 (latest edition) with min. W/C ratio & cement content as per IS stipulation for moderate condition. Concrete shall be produced by concrete mixer machine & hand mix is generally not acceptable. However in certain unavoidable circumstances, hand mix shall be permitted with 10% extra cement content as per the discretion of BHEL engineer.

#### 4.3.7

**Brick masonry::** Brick masonry shall be done by using best quality locally available burnt clay bricks / fly ash bricks of standard size. Minimum strength of the bricks should not be less than 35 KG/sq. cm. Other quality requirement shall be in line with the relevant IS Code. One-brick thick brickwork shall be constructed as specified, in Cement mortar 1:6 including linking, plumbing, leveling, pacing, joints curing etc. Including all materials, tools, plants and labour complete at all level/elevation.

#### 4.3.8

**RCC:** RCC 1:2:4 shall be provided for column foundations & structural column / supporting pedestal for sheds, platform, lintels for Rolling shutters etc. as per IS specification. Roof truss shall be directly resting on the RCC column & to be fixed with foundation bolt embedded in column

#### 4.3.9

**Formwork:** The formwork should be capable of carrying the dead load of concrete, the reinforcements and the forces of vibration. The form works shall be designed by the contractor and approved by engineer in charge. After sufficient curing period & after attaining adequate strength of concrete the formwork shall be removed with the approval of BHEL engineer. The item of PCC/RCC shall be deemed as completed after removal of forms and required finishing is completed.

#### 4.3.10

Roof cover with AC corrugated sheet (6mm thick) shall be provided with suitable AC ridges and 'J' bolts, GI Cup Washers, GI Plain Washers, and Bitumen Washers etc. Wind ties for protection against lifting of roof by wind etc. as per standard practice shall be provided by the contractor.

#### 4.3.11

Steel tubular/Structural/combined, roof trusses and fixtures of suitable design as per IS- 1161 specification shall be provided. Contractor shall furnish the design & drawing of tubular /Structural truss for closed store shed, staging for over head tank, structural gate with post for approval of BHEL, before fabrication is commenced. Design for roof trusses, purlines, runners for given span etc. shall be got done through experienced & reputed designer. Contractor shall submit 4 blue prints of each drawing with design calculations to BHEL, two copies of that shall be returned after approval for site use. Rate quoted shall be inclusive of engineering, design, fabrication, and erection complete. Design should be economical & as per standard engineering practice. Bolt to be embedded in the RCC column for fixing of truss shall be paid by weight along with the truss.

#### 4.3.12

The type of trusses is tubular .Local atmospheric condition like wind pressure etc. shall be given due consideration for designs of these structures.

#### 4.3.13

Contractor is permitted to get steel truss & other structures fabricated at workshop outside of the plant premises with prior permission of BHEL. In this case contractor has to arrange for shop inspections periodically as required by BHEL Engineer to ensure the quality of fabrication work. Fabricated structures without inspection/certified by BHEL shall not be allowed for erection.

#### 4.3.14

For necessary lighting inside the sheds, translucent RMP sheets of 1.5 mm thick of approved make to match with AC sheet roofing/cladding shall be provided.

### **4.5 Electrical Installations**

#### 4.5.1 General

##### 4.5.1.1

The electrical installation shall generally be carried out in conformity with the requirements of the Indian electricity act, 1910 as amended up to date and the Indian electricity rules, 1956 framed there under and also the relevant regulations of the electric supply authority concerned as well as IS: 732-1963 (revised).

##### 4.5.1.2

Good workmanship is an essential requirement for compliance with the rules in the code. The work shall be carried out under the direct supervision of a person holding a valid certificate of competency issued by the state government concerned for the type of work involved.

##### 4.5.1.3

All out door/external lamps shall have weatherproof fittings of design approved by BHEL Engineer so as to effectively prevent the admission of moisture.

##### 4.5.1.4



The distribution fuse boards shall be located as near as possible to the center of the load they are intended to control.

#### 4.5.1.5

All main switches shall be of metal clad enclosed pattern, which shall be fixed at close proximity to the point of entry of supply.

#### 4.5.1.6

Main and branch distribution boards shall be in accordance with Indian standard 732-1963 "code of practice for electrical wiring installation".

#### 4.5.1.7

PVC conduit wiring system should be adopted through out and all conduit pipes/channel shall be conforming to latest IS.

#### 4.5.1.8

Approved and good quality copper wire with adequate current carrying capacity/voltage rating with proper insulation as per IS should be used for the entire electrical wiring/installation.

#### 4.5.1.9

The service connection from outside mains to the switchboard inside the building shall also be carried out by the contractor

### 4.5.2 Earthing

#### 4.5.2.1

All earthing system shall be in accordance with IS: 3043-1966 "code of practice for earthing".

#### 4.5.2.2

The installation and earthing shall generally be carried out in accordance with the Indian electricity rules 1956 as amended from time to time and the relevant regulations of the electricity supply authority concerned.

#### 4.5.2.3

All plugs and sockets shall be of three-pin type, one of the pins being connected to earth.

#### 4.5.2.4

Bodies of all electrical appliances shall be earthed by the use of three pin plugs. The covers of the regulators if of metallic construction, shall be earthed by means of a separate earth wire. A separate earth wire shall be used for earthing these appliances.

#### 4.5.2.5

All earth wires and earth continuity conductors shall be of copper/-galvanized iron. They shall be either stranded or solid bars of flat rectangular strips and may be bared, provided, due care is taken to avoid corrosion and mechanical damage to it. Inter connections of earth continuity conductors and main and branch earth wires shall be made in such a way that reliable and good electrical connections are permanently ensured.

#### 4.5.2.6

The neutral conductor shall not be used as earth wire.

#### 4.5.2.7

Welded, bolted and clamped joints only are permissible. For stranded conductor, sleeve connectors are permissible. Bolted connectors and their screws shall be protected against any possible corrosion.

#### 4.5.2.8

The path of the earth wire shall, as far as possible, be out of reach of any person and shall be visible for inspection.

#### 4.5.2.9

The galvanized iron pipe electrodes shall not be smaller than 38mm internal diameter and shall not be less than 3.5M. In length and shall, as far as possible, be embedded below permanent moisture level and shall be one piece only without any joints.

### 4.5.3 GENERAL NOTES FOR VENTILATORS

#### 4.5.3.1 STEEL/ IRON WORK

**Steel ventilators:** - All steel ventilators shall be supplied and fixed as per standard specifications, relevant IS code and instructions of Engineer-in-charge with all furniture, fittings, holdfasts etc. Complete.

**Rolling shutters** (as per is 6248):- All the rolling shutters as per standard specifications/IS code and drawings and as instructed by engineer-in-charge shall be supplied and fixed with all accessories and fittings for easy mechanical operation from inside and outside. The rolling shutters shall be manufactured with adequate thickness to avoid any damage/buckling due to heavy wind or storm.

Contractor shall arrange for shop inspection for all rolling shutters & trusses etc. if fabricated outside the plant. before delivery at site for engineer's clearance.

#### 4.5.3.2 PAINTING

All the steel items such as ventilators, roof trusses, columns, purlins etc. shall be supplied with one coat of red oxide primer; two coats of synthetic enamel paint of approved color and quality shall be applied after fixing in position to achieve uniform finishing. Rates shall be quoted taking into account cost of painting for steel work etc.

#### 4.5.3.3

Three coats of white washing shall be provided uniformly on all wall surfaces as per IS specification or colour wash as per the direction of engineer incharge instructions with surface preparation as per the finish schedule mentioned in the sketch.

### 4.6 Specification of roofing for storage sheds.

#### 4.6.1 General

##### 4.6.1.1

This specification covers the roofing structure for store shed. The walls of the above sheds shall be constructed in masonry providing all ventilators. Pre-fabricated tubular/structural steel trusses shall directly rest on the RCC columns with suitable arrangements of bolting.

##### 4.6.1.2

The scope under this specification shall cover trusses with tubular/structural steel made up of MS rolled sections, purlins, batten tie runners, and fixing bolts for trusses. AC ridges and AC sheets for roofing complete with J-bolts, I-bolts, and gutters and down pipe etc. Any other item not specifically mentioned but required for completion of the structure shall be deemed to have been included in this specification.

##### 4.6.1.3

The trusses shall be tubular/structural steel welded, fabricated in pieces of convenient length for transportation by truck and speedy erection at site. The base plates shall be welded to the

trusses for fixing/resting the same on RCC columns. Suitable cleats or fixing plates shall be provided on the trusses for holding the purlins and the bottom tie runners. Bolts shall be fixed in RCC columns by using templates for fixing truss. These foundation bolts shall be paid under structural items of rate schedule whereas base plates, clits etc. fixed with truss shall be paid under tonnage of truss only. No separate payment shall be made for templates.

#### 4.6.1.4

The purlins and bottom tie runners shall be of structural steel sections or steel tubes of adequate size to give proper strength and rigidity. 6/7 mm thick corrugated AC sheets and AC ridges shall be used for the roof of the shed. The sheet shall be of standard size for trusses, AC ridges and AC sheets for roofing complete and shall conform to IS 459. The sheets shall be fixed to purlins with galvanized J or I bolts. GI cup washers and bitumen washers shall be provided where holes are made in AC sheets to prevent any water leakages,. Fly strips shall be provided over the AC sheets for additional protection against storms. Providing & fixing 'J' bolts, washers etc. shall be a part of AC sheet fixing & no separate weight shall be paid for this.

#### 4.6.1.5

All the bolts, nuts and washers supplied for the assembly of the structure shall be hot dipped galvanized and of metric sizes. All the members shall be given two coats of anti-rust red oxide primer paint after proper cleaning of the surface.

#### 4.6.1.6

All the members of the structure shall be of standard dimensions and shall provide complete flexibility for assembling in the required number of days. The expansion of the structure in lengthwise direction shall be possible with minimum dismantling of the existing members.

**BIDDERS MUST SUBMIT ALL RELEVANT DOCUMENT AS PER THIS TENDER SPECIFICATION AND AS PER QUALIFYING REQUIREMENT ( QR ) OF NIT. BIDDER MUST VISIT OUR WEB SITE [www.bhel.com](http://www.bhel.com) FOR NIT, TECHNICAL SPECIFICATION, BOQ, AMENDMENTS ETC TO KEEP UPDATED FOR ANY CHANGES/ AMENDMENTS. INCOMPLETE DOCUMENT SUBMITTED BY BIDDER SHALL NOT BE CONSIDER FOR EVALUATION .**

## SECTION-5

### SPECIAL CONDITIONS OF CONTRACT

**OBLIGATIONS OF THE CONTRACTOR (SITE OFFICE, STORES, LABOUR COLONY, TOOLS & TACKLES, MEASURING AND MONITORING DEVICES, MATERIALS, CONSUMABLES, CONSTRUCTION POWER & WATER ,Taxes duties etc.)**

#### **5.1 CONSTRUCTION OF SITE OFFICE, STORES, ACCOMODATION FOR LABOURER AND STAFF:**

Space for construction of contractor's site office, stores will be provided by BHEL's customer free of charge within the project area. Construction of Contractor's site office and stores shall be done by contractor as per their requirement at their own cost.

All the temporary constructions like Contractor's Office, Contractor's Stores etc. shall be dismantled & area shall be handed over to BHEL/Client duly cleared of all the debris on completion of the contracted work. In the event of his failure to do so, the same will be done by BHEL at the risk and cost of the contractor. The decision of BHEL engineer in this regard is final.

**Contractor shall have to make own independent arrangement for accommodation of his Laboures and Staff. BHEL will not provide space/land for accommodation.**

#### **5.2 TOOLS AND TACKLES**

##### **5.2.1**

All tools and tackles required for the work have to be arranged by the contractor.

##### **5.2.2**

All tools and tackles to be procured and used for the work shall have the prior approval of BHEL engineer in regard to brand, quality and specification.

##### **5.2.3**

The contractor shall provide all the necessary scaffolding materials, temporary structures and necessary safety devices etc.

##### **5.2.4**

Contractor shall maintain and operate his tools and plants in such a way that major breakdowns are avoided. In the event of major breakdown, contractor shall make alternate arrangements expeditiously so that the progress of work is not hampered.

##### **5.2.5**

In the event of contractor failing to arrange the required tools, plants, machinery, equipment, material and non-availability of the same owing to breakdown, BHEL will resort to hiring out the same from outside agencies or may provide their equipment if available or may resort to buying of equipment/material at the cost of contractor. Full cost of equipment/hire charges/ rental charges along with departmental overheads will be charged to the contractor.

##### **5.2.6**

The T&P to be arranged by the contractor shall be in proper working condition. The operation shall not lead to unsafe conditions. The movements of derricks and other equipment should be such that no damage/breaking occur to foundation, equipment, material and men.

##### **5.2.7**

For full welding of structures, only welding generators shall be used. The use of welding transformers will be subject to the approval of BHEL engineer.

#### 5.2.8

Contractor to arrange necessary dewatering pumps, concrete mixers, vibrators etc.

### 5.3 MEASURING AND MONITORING DEVICES (MMD)

BHEL, Power Sector- Western Region (PS-WR) has already been accredited with ISO 9000 certification and as such this work is subject to various audits to meet ISO 9000 requirements. One particular aspect, which needs special attention, is about calibration of MMD deployed by the contractor. Contractor shall ensure deployment of reliable and calibrated MMD. All the MMD shall have calibration certificates from accredited laboratories traceable to National/International standards. Retesting/ recalibration shall also be arranged at prescribed intervals during the period of use as advised by BHEL engineer within the contract price. The contractor will also have alternate arrangements for such MMD so that work does not suffer when the particular equipment/instrument is sent for calibration. Also if any items not found fit for use, BHEL shall have the right to stop the use of such item forthwith and instruct the contractor to deploy proper MMD. Repeat measurements shall have to be taken by a valid and proper MMD for those parameters measured with a non-acceptable MMD, failing which BHEL will deploy MMD and retake the readings at contractor's cost.

### 5.4 MATERIALS

All the materials necessary for the entire work like cement, all types of steel, tubular/structural trusses, coarse & fine aggregates, bricks, ventilators, rolling shutters, structural members, foundation bolts, MS bars, painting materials, AC sheets, Plywood materials, Rails, Putty, necessary wood materials, electrical fittings and wiring material and all other material required for the entire job shall be supplied by the contractor as per the specification mentioned in the Tender Specifications/Indian Standards. The contractor is required to quote their rates inclusive of cost of all materials etc. All these materials shall be inspected by BHEL before these are used for the work. Materials not found satisfactory by BHEL shall be rejected and removed forthwith by the Contractor.

### 5.5 CONSUMABLES

#### 5.5.1

The contractor shall provide all consumables required for carrying out the work covered under this scope of work & rate quoted shall be inclusive of all those things.

#### 5.5.2

All consumables to be procured and used for the work shall have prior approval of BHEL engineer in regard to brand and quality specification.

#### 5.5.3 ELECTRODES AND GASES

##### 5.5.3.1

Contractor at his cost as approved by BHEL shall arrange all the required electrodes. It shall be the responsibility of the contractor to obtain prior approval of BHEL, before procurement regarding suppliers, type of electrodes etc. On receipt of the electrodes at site, it shall be subject to inspection and approval by BHEL details regarding type of electrodes, batch number and date of expiry etc.

BHEL reserves the right to reject the use of any electrodes at any state, if found defective because of bad quality, improper storage, quality date expiry, unapproved type of electrodes etc. It shall be the responsibility of the contractor to replace at his cost without loss of time.

#### 5.5.3.2

All the required gases like Oxygen, Acetylene, etc. will be provided by the contractor at his cost.

#### 5.5.3.3

If at any time during the execution of work, it is noticed that the work is suffering on account of non-availability of consumables from the contractor's side like electrodes, gases and other materials, then, BHEL will make alternate arrangements and the necessary costs with overheads at 30% will be recovered from the running bills of the contractor.

### 5.6 FIELD OFFICE

#### 5.6.1

The contractor shall make his own arrangements for field office and stores for accommodating necessary equipments, tools room for execution of the work. Only open space will be provided by BHEL / customer, free of charges within the project premises as per the availability of space.

#### 5.6.2

On completion of work, all the temporary buildings, structures, pipelines, cables, 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, BHEL will arrange to remove and expenditure thereof including overhead expenses (presently @30%) will be recovered from the contractor. The decision of BHEL engineer in this regard shall be final. However, the scope of dismantling and leveling the area is limited only to the contractor's site office, yard and other spaces occupied by the contractor.

### 5.7 AREA LIGHTING

#### 5.7.1

Contractor shall arrange adequate floodlights, hand lamps and area lighting. Contractor shall use his own materials like cables, fuses, switchboards etc. BHEL/client will not provide anything in this regard.

### 5.8 POWER AND WATER FOR CONSTRUCTION

#### 5.8.1

A) **Construction Power:** Construction power of 3phase,415V,50HZ will be provided free of cost by BHEL at a single point/from the available feeder at their construction power sub-station. Arrangement like cabling (approx. 500M) etc. as required for further distribution up to work site shall be made by contractor including providing & fixing of energy meter at their own cost. During non-availability of power, contractor has to arrange power through adequate DG sets at their cost. Adequate arrangement for diesel/petrol engine powered Concrete mixer, vibrator and other construction machinery shall be made by contractor to ensure uninterrupted work. Anyhow necessary taxes and levies as imposed by M/s NTPC have to be borne by contractor and the coated rates deemed to have included all this things.

All temporary wiring must comply with local regulations and will be subjected to Engineer's inspection and approval before connecting to supply point.

**5.9 ) Water for Construction: THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENT FOR CONSTRUCTION WATER & DRINKING WATER BY DRILLING SUITABLE BORE WELLS OR ANY OTHER ARRANGEMENT AT HIS COST.**

**C )Power ( Electricity ) for labour colony shall be on chargeable basis as per prevailing tariff of NTPC.**

## **5.10 TAXES, DUTIES, LEVIES**

### **5.10.1**

Refer to Clause 2.8.4 of General Conditions of Contract. Notwithstanding anything contained therein, the following provisions shall be applicable for this contract.

### **5.10.1**

The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, VAT/WCT, commissions or other charges which may be levied on the input goods & services consumed and output goods & services delivered in course of his operations in executing the contract. 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 (i.e. rate quoted by bidder shall be inclusive of all Taxes and Duties, VAT/WCT except Service Tax).

However, provisions regarding Service Tax on output services and goods shall be as per following clauses.

### **5.10.2 Service Tax & Cess on Service Tax**

Service Tax and Cess on Service Tax as applicable on output Services are excluded from contractor's scope; therefore contractor's price/rates shall be **exclusive** of Service Tax and Cess on Output Services. In case, it becomes mandatory for the contractor under provisions of relevant act/law to collect the Service Tax & Cess from BHEL and deposit the same with the concerned tax authorities, such applicable amount will be paid by BHEL.

**Contractor shall submit to BHEL documentary evidence of Service Tax registration certificate specifying name of services covered under this contract.. Contractor has to mention in their RA Bill service tax registration number and remittance record of such tax immediately after depositing the tax with concerned authorities.** Contractor shall obtain prior written consent from BHEL before billing the amount towards such taxes.

With introduction of Cenvat Credit Rules 2004, which came into force w.e.f. 10.09.2004, Excise Duty paid on Input Goods including Capital Goods and Service Tax paid on Input Services that are used for providing the output services can be taken credit of against the Service Tax payable on output services. However BHEL may opt for availing the abatement provision in which case cenvat credit may not be available on input duty.

### **5.10.3 Modalities of Tax Incidence on BHEL**

Wherever the relevant tax laws permit more than one option or methodology for discharging the liability of tax/levy/duty, BHEL will have the right to adopt the appropriate one considering the amount of tax liability on BHEL/Client as well as procedural simplicity with regard to assessment of the liability. The option chosen by BHEL shall be binding on the Contractor for discharging the obligation of BHEL in respect of the tax liability to the Contractor.

#### **5.10.4 New Taxes/Levies**

In case the Government imposes any new levy/tax on the output service/ goods/work after award of the contract, the same shall be reimbursed by BHEL at actual.

In case any new tax/levy/duty etc. becomes applicable after the date of Bidder's offer, the Bidder/Contractor must convey its impact on his price duly substantiated by documentary evidence in support of the same **before opening of Price Bid**. Claim for any such impact after opening the Price Bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

No reimbursement/recovery on account of increase/reduction in the rate of taxes, levies, duties etc. on input goods/services/work shall be made. Such impact shall be taken care of by the Price Variation/Adjustment Clause (PVC) if any. In case PVC is not applicable for the contract, Bidder has to make his own assessment of the impact of future variation if any, in rates of taxes/duties/ levies etc. in his price bid.

#### **5.11.0 Submission of Periodical Reports**

Contractor shall submit periodical reports in respect of following aspects of operation:

Consumption of welding electrodes and gases

Consumption of construction power

Availability and utilization of BHEL's cranes

Manpower reports

Progress reports - periodically

Field calibration reports

BHEL at site will inform formats for these reports.

It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc. Necessary coordination with customer officials is the

responsibility of the contractor. Contractor to follow all the procedures laid down by the customer for making gate passes. Where permitted, by customer/ BHEL, to work beyond normal working hours, the contractor shall arrange necessary work permit for working beyond normal working hours.

**THE SCOPE OF WORK UNDER THIS CONTRACT IS DEEMED TO BE COMPLETE ONLY WHEN SO CERTIFIED BY THE ENGINEER INCHARGE OF BHEL.**

#### **5.12 INSURANCE:**

(a) BHEL shall arrange insurance coverage for the materials and properties of BHEL/Customer covering the risks during transit, storage, erection and commissioning.

(b) THE CONTRACTOR HAS TO ARRANGE ON HIS OWN, INSURANCE FOR ALL MATERIALS LIKE CEMENT AND OTHER BOUGHT OUT ITEMS, AND FOR THEIR ALL T & P AND OTHER FIXED ASSETS WHICH THEY MAY HAVE TO ACQUIRE AND DEPLOY AT SITE. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR ACCIDENT RISK POLICY/WORKMEN COMPENSATION POLICY. THE CONTRACTOR HAS TO ARRANGE ON HIS OWN INSURANCE FOR THEIR SUPPLIED MATERIALS LIKE CEMENT, AND OTHER VALUABLE BUILDING MATERIALS DURING ITS TRANSPORT, STORAGE, TILL IT GOES TO THE PERMANENT WORK.



(c ) It is the entire responsibility of the contractor to insure his workmen against accident and injury while at work as required by the relevant rules and to pay compensation, if any, to their workmen as per workmen's compensation act. The contractor has also to insure his staff against accident/injury. The contractor has to take insurance cover for his tools and plants, assets etc.

(d) These insurance covers have to be taken prior to start of his work at the subject project and he shall make available the Policy to BHEL Site in-charge for necessary verification before commencement of work. However, irrespective of such verification/acceptance, the sole responsibility to maintain adequate insurance cover for his workmen, T&P, assets etc. at all times during the period of contract shall lie with the contractor. Regarding the aforesaid insurance cover, the contractor shall directly deal with the Insurance Company for all matters regarding the insurance in his scope.

## **SECTION-6**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **5.0 CONTRACTOR'S OBLIGATION IN REGARD TO EMPLOYMENT OF SUPERVISORY STAFF AND WORKMEN**

##### **6.1**

The contractor shall deploy all the skilled/semiskilled/ unskilled labour including highly skilled workmen etc. These workmen should have previous experience on similar job. They shall hold valid certificates wherever necessary. BHEL reserves the right to insist on removal of any employee of the contractor at any time if he is found to be unsuitable and the contractor shall forthwith remove him. Contractor should furnish a tentative deployment plan of his manpower as required vide relevant Appendix. Also the actual deployment will be so as to satisfy the erection and commissioning targets set by BHEL.

##### **6.2**

It is the responsibility of the contractor to engage his workmen in shifts and or on overtime basis for achieving the targets set by BHEL. This target may be set to suit BHEL's commitments to its customer or to advance date of completion of events or due to other reasons. The decision of BHEL in regard to setting the erection and commissioning targets will be final and binding on the contractor.

##### **6.3**

Contractor shall deploy only qualified and experienced engineers/ supervisors. They shall have professional approach in executing the work.

##### **6.4**

The contractor's supervisory staff shall execute the work in the most professional manner in the stipulated time. Accuracy of work and aesthetic finish are essential part of this contract. They shall be responsible to ensure that the assembly and workmanship conform to dimensions and tolerances given in the drawings/instructions given by BHEL engineer from time to time.

##### **6.5**

The supervisory staff employed by the contractor shall ensure proper outturn of work and discipline on the part of the labour put on the job by the contractor. Also, in general they should see that the works are carried out in a safe and proper manner and in coordination with other labour and staff employed directly by BHEL or other contractors of BHEL or BHEL's client.

##### **6.6**

If at any time, it is found that the contractor is not in a position to deploy the required engineers/supervisors/workmen due to any reason, BHEL shall have the option to make alternate arrangements at the contractor's risk and cost.

##### **6.7 SITE ORGANISATION**

The contractor shall provide adequate staffing in the following areas in addition to the staffing requirements of execution as instructed/informed by BHEL:

###### **Overall Planning, Monitoring & Control**

Materials Management

Quality Control and Quality Assurance

Safety, Fire & Security

Industrial Relations and fulfillment of Labour Laws and other statutory obligations.

## **SECTION-7**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **6.0 OBLIGATIONS OF BHEL**

##### **FACILITIES PROVIDED BY BHEL**

##### **7.1.1 SPACE FOR CONTRACTOR'S SITE OFFICE & STORES:**

Refer Section- 5 in this regard

##### **7.1.2 CONSTRUCTION POWER AND WATER**

Refer Section - 5

**Water for Construction:** As specified in section –5.

##### **7.2 TOOLS & PLANTS**

BHEL will **NOT** provide any Tools & Plants for this work.

##### **7.3 CONSUMABLES AND MATERIALS**

BHEL will **NOT** provide any Consumables and Materials for this work except those, which are specifically mentioned in this tender specification.

**SECTION-8**  
**SPECIAL CONDITIONS OF CONTRACT**

- 8.0 Inspection / Quality Assurance / Quality Control / Statutory Inspection**
- 8.1** Various inspection/quality control/quality assurance procedures /methods at various stages of erection and commissioning will be as per BHEL quality control procedure/codes and other statutory provisions and as per BHEL engineer's instructions.
- 8.2** Preparation of quality assurance log sheets and protocols with 's engineers, welding logs and other quality control and quality assurance documentation as per BHEL engineer's instructions, is within the scope of work/specification.
- 8.3** A daily logbook should be maintained by every supervisor/ engineer of contractor on the job in duplicate (one for BHEL and one for contractor) for detailing and incorporating alignment/ clearance/ centering/leveling readings and inspection details of various equipments, structures, piping, and others.
- Welding details like serial number of weld joints, welders name, date of welding, details of repair, heat treatment etc shall be documented in welding log as per BHEL engineer's instructions.
- 8.4** All the electrical/mechanical measuring and monitoring devices/ gauges, feeler gauges, height gauges, dial gauges, micrometers, precision levels, spirit levels, water level micrometers surface plates, straight edges, vernier calipers and all other measuring instruments shall be provided by the contractor for checking, leveling, alignment, centering etc Of the erected equipments at various stages.
- The instruments/gauges/tools etc provided should be of brand, quality and accuracy, specified by BHEL engineer and should have necessary calibration and other certificates as per the requirements of BHEL engineer.
- 8.5** In the course of erection, it may be necessary to re-check or counter check or finally check the work with instruments recently calibrated, recalibrated or of inspection grade gauge/tools or special measuring instruments. Such instruments whenever necessary will be provided by BHEL on specific authorization by BHEL engineer.
- 8.6** The instruments mentioned in clause 8.5 shall be drawn by the contractor from BHEL stores on the specific authorization and use the same on the specific job for the purpose of inspection/ rechecking/counter checking/ finally checking of the work and shall be returned to BHEL stores immediately on completion of the inspection.
- 8.7** Total quality is the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He shall follow all the instructions as per BHEL drawings and quality standards. Contractor shall provide for the services of quality assurance engineer.

- 8.8** The welder's performance will be reviewed from time to time as per the BHEL standards and any welder not performing to the standards set by BHEL will be removed from working. Contractor shall arrange for the alternate welders immediately.
- 8.9** All the welders shall carry identity cards as per the pro forma prescribed by BHEL only welders duly authorized by BHEL shall be engaged on the work.
- 8.10** Contractor shall ensure speedy alignment and welding of all equipments erected by him soon after placement. Also all alignments, welding, NDT tests required for stage inspection shall be completed as per the quality assurance procedures.
- 8.11.1** Any minor rectification or minor repairs of defective work found at during stage inspection shall be rectified free of cost, by the contractor.
- 8.11.2** Any major rectification or major repair/major rework of defective work, found out during stage inspection as per clause 8.11, but not attributable to contractor shall also be carried out. Claims of contractor, if any, shall be governed as per clause 13.1 to 13.8.
- 8.12 Statutory Inspection**
- 8.12.1** During the statutory inspection, contractor shall provide all the manpower assistance as per the requirement within their quoted rate. However, all other arrangements for visiting of statutory authorities at site including fee etc shall be borne by BHEL also refer section 5 in this regard.
- 8.13.0** BHEL, power sector- western region (PSWR) has already been accredited with ISO 9002 certification and as such this work is subject to various audits to meet ISO 9002 requirements. One particular aspect, which needs special mention, is about arrangement of calibration of instruments by the contractor. Contractor shall ensure deployment of reliable and calibrated MMD (measuring and monitoring devices). The MMD shall have test/calibration certificates from authorized/government approved/ accredited agencies traceable to national/international standards. Retesting/recalibration shall also be arranged at regular intervals during the period of use as advised by BHEL engineer within the contract price.
- The contractor will also have alternate arrangements for such MMD so that work does not suffer when the particular equipment/ instrument is sent for re-calibration. Also if any MMD is not found fit for use, BHEL shall have the right to stop the use of such item and instruct the contractor to deploy proper item and recall i.e. Repeat the readings taken by that instrument, failing which BHEL may deploy MMD s and retake the readings at contractor's cost.

**Section-9**  
**Special Conditions**  
**Safety, Occupational Health and Environmental Management**

**Introduction:-**

BHEL PSWR has been certified for Environmental Management under ISO 14001:1996 standard and Occupational Health & Safety under OHSAS 18001 by DNV. In order to comply with the above standards, it shall be the endeavor of BHEL and all its subcontractors to meet and implement the requirements by following the guidelines issued under Environmental, Occupational Health and Safety Management (EHS) manual a copy of which will be available with the BHEL Site-in-charge.

Contractor shall also enter into a “Memorandum of Understanding” as given in clause 9.9 in case of award of contract.

**9.0 Responsibility Of The Contractor In Respect Of Safety Of Men, Equipment, Material And Environment.**

**9.1 The Contractor Shall**

- 9.1.1 Abide by the Safety Regulations applicable for the Site/Project and in particular as mentioned in the booklet “Safe Work Practices” issued by BHEL. Contractors are also to ensure that their employees and workmen use safety equipments as stipulated in the Factories Act (Latest Revision) during the execution of the work. Failure to use safety equipment as required by BHEL Engineer will be a sufficient reason for issuance of memo, which shall become part of Safety evaluation of the contractor at the end of the Project. Also all site work may be suspended if it is found that the workmen are employing unsafe working practice and all the costs/losses incurred due to suspension of work shall be borne by contractor. A comprehensive list of National Standards from which the contractor can draw references for complying with various requirements under this section is given under 9.10
- 9.1.2 Hold BHEL harmless and indemnified from and against all claims, cost and charges under Workmen’s Compensation Act 1923 and 1933 and any amendment thereof and the contractor shall be solely responsible for the same.
- 9.1.3 Abide by the Procedure governing entry/exit of the contractor’s personnel within the Customer/Client premises. All the contractors employees shall be permitted to enter only on displaying of authorized Photo passes or any other documents as authorized by the Customer/Client
- 9.1.4 Be fully responsible for the identity, conduct and integrity of the personnel/workers engaged by them for carrying out the contract work and ensure that none of them are ever engaged in any anti national activity
- 9.1.5 Prepare a sign board giving the following information and display it near the work site:

- i. Name of Contractor
- ii. Name of Contractor Site-in-charge & Telephone number
- iii. Job Description in short
- iv. Date of start of job
- v. Date of expected completion
- vi. Name of BHEL Site-in-charge.

9.1.6 Abide by the rules and regulations existing during the contract period as applicable for the contractors at the Project premises.

9.1.7 Observe the timings of work as advised by BHEL Engineer-in-charge for carrying out the contract work.

## 9.2 **SPECIAL CONDITIONS**

### 9.2.1 **Safety**

#### 9.2.1.1 **Safety Plan**

Before commencing the work, contractor shall submit a “safety plan” to the authorized BHEL official. The safety plan shall indicate in detail the measures that would be taken by the contractor to ensure safety to men, equipment, material and environment during execution of the work. The plan shall take care to satisfy all requirements specified hereunder.

The contractor shall submit “safety plan” before start of work. During negotiations, before placing of work order and during execution of the contract, BHEL shall have right to review and suggest modifications in the safety plan. Contractor shall abide by BHEL’s decision in this respect.

9.2.1.2 The contractor shall take all necessary safety precautions and arrange for appropriate appliances and/or as per direction of BHEL or it’s authorized person to prevent loss of human lives, injuries to men engaged and damage to property and environment.

9.2.1.3 The contractor shall provide to his work force and also ensure the use of Personnel Protection Equipment (PPE) as found necessary and/or as directed and advised by BHEL officials without which permission is liable to be denied.

- Safety helmets conforming to IS 2925/1984 (1990)
- Safety belts conforming to IS 3521/1989
- Safety shoes conforming to IS 1989 part-II /1986(1992)
- Eye and face protection devices conforming to IS 2573/1986(1991), IS 6994 (1973), part-I (1991), IS 8807/1978 (1991), IS 8519/1977(1991).
- Other job specific PPEs of standard ISI make as may be prescribed

9.2.1.4 All tools, tackles, lifting appliances, material handling equipment, scaffolds, cradles, cages, safety nets, ladders, equipment, etc used by the contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by

authorized BHEL official who shall have the right to ban the use of any item found to be unsafe

9.2.1.5 All electrical equipment, connections and wiring for construction power, its distribution and use shall conform to the requirements of Indian Electricity Act and Rules. Only electricians licensed by the appropriate statutory authority shall be employed by the contractor to carryout all types of electrical works. All electrical appliances including portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed.

9.2.1.6 The contractor shall not use any hand lamp energized by electric power with supply voltage of more than 24 volts. For work in confined spaces, lighting shall be arranged with power source of not more than 24 volts.

9.2.1.7 The contractor shall adopt all fire safety measures as per relevant Indian Standards

9.2.1.8 Where it becomes necessary to provide and/or store petroleum products, explosives, chemicals and liquid or gaseous fuel or any other substance that may cause fire or explosion, the contractor shall be responsible for carrying out such provisions and/or storage in accordance with the rules and regulations laid down by the relevant government acts, such as petroleum act, explosives act, petroleum and carbides of calcium manual of the chief controller of explosives, Government of India etc. The contractor in all such matters shall also take prior approval of the authorized BHEL official at the site.

9.2.1.9 Proper means of access must be used e.g. ladders, scaffolds, platforms etc. No makeshift access such as oil drums or pallets shall be used. Design of these will be in accordance with relevant standards and certified by competent persons before use.

9.2.1.10 Temporary arrangements made at Site for lifting , platforms, approach, access etc should be properly designed and approved before being put to use.

9.2.1.11 All excavations and openings must be securely and adequately  
Fenced/barricaded and warning signs erected when considered  
Necessary as per relevant code of practice.

9.2.1.12 No persons shall remove guard rails, covers or protective devices unless authorized by a responsible supervisor and alternative precautions have been taken

9.2.1.13 Access ways, means of escape and fire exits shall be clearly marked, kept clear and unobstructed at all times

9.2.1.14 Only authorized persons holding relevant license will drive and operate site plant and equipments eg cranes, dumpers, excavators, transport vehicles etc



- 9.2.1.15 Only authorized personnel are allowed to repair, commission electrical equipments.
- 9.2.1.16 Gas cylinders shall be handled and stored as per Gas Cylinder Rules and relevant safe working practices
- 9.2.1.17 All wastes generated at Site shall be segregated and collected in a designated place so as to prevent spillage/contamination/scattering at Site, until the waste is lifted for disposal to designated disposal area as advised by BHEL official.
- 9.2.1.18 The contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working when natural day light is not adequate for clear visibility.
- 9.2.1.19 The contractor shall train adequate number of workers/ supervisors for administering "FIRST AID". List of competent first aid administrators should be prominently displayed.
- 9.2.1.20 The contractor shall display at strategic places and in adequate numbers the following in fluorescent markings
- Emergency telephone numbers
  - Exit, Walkways
  - Safe working load charts for wire ropes, slings, D shackles etc
  - Warning signs
- 9.2.1.21 The contractor shall be held responsible for any violation of statutory regulations (local, state or central) and BHEL instructions that may endanger safety of men, equipment, material and environment in his scope of work or other contractors or agencies. Cost of damage, if any, to life and property arising out of such violation of statutory regulations and BHEL instructions shall be borne by the contractor.
- 9.2.1.22 In case of a fatal or disabling injury/accident to any person at construction sites due to lapses by the contractor, the contractor as per statutory requirements shall compensate the victim and/or his/her dependents. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case.
- 9.2.1.23 In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover cost of such damages from payments due to the contractor after holding an appropriate enquiry.
- 9.2.1.24 In case of any delay in the completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have the right to recover cost of such delay from payments due to the contractor after

notifying the contractor suitably and giving him opportunity to present his case.

- 9.2.1.25 If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given a reasonable opportunity to do so, and/or if the contractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions regarding safety issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.

9.2.1.26 **Emergency Response**

- 9.2.1.15.1 BHEL will have an Emergency Response Plan for each Project Site in consultation with the Owner as the case may be, detailing the procedure for mobilization of personnel and equipment, and defining the responsibilities of the personnel indicated, in order to prepare for any emergency that may arise in order to ensure the priorities of
- Safeguard of life
  - Protect assets under construction or neighboring
  - Protect environment
  - Resumption of normal operations as soon as the emergency condition is called off

All Contractors shall also be part of the Emergency response Plan and the personnel so nominated shall be aware of their duties and responsibilities in an emergency response situation.

- 9.2.1.15.2 At least 5% Contractors supervisors and workmen shall undergo training in administering 'First Aid'. The trained persons should represent for all categories of work and for all areas of work. Adequate number of trained persons should be available for each shift. These first aiders shall be included in the emergency response team. Contractor employees and workmen are encouraged to participate in first aid training programmes whenever organized by BHEL.

**9.2.2 OCCUPATIONAL HEALTH**

- 9.2.2.1 Specific occupational health hazards will be identified through the hazard evaluation processes in consultation with BHEL engineers and the necessary prevention/reduction/elimination methods implemented.
- 9.2.2.2 All personnel working in an activity with a potential risk to health shall be made aware of all those risks and the actions they must take to reduce/control/eliminate the risk
- 9.2.2.3 Safety coordinator shall conduct periodic checks to ensure that every group of workers engaged in similar activities are aware of potential risks to health and the actions required to be taken to mitigate the risk

- 9.2.2.4 In order to protect personnel from associated health hazards, the following main areas will be focused
- Issue of approved Personnel Protective Equipment
  - Verification that the PPEs are adequate/maintained and worn by all staff involved in operations that are potentially hazardous to their health
  - Ensure that the personnel deployed are physically fit for the operation/work concerned
  - Provide hygienic and sanitary working conditions
- 9.2.2.5 Contractor workers employees engaged in noise risk areas shall be issued with hearing protection aids and the use of the same will be enforced. Further, these workers will be educated on the hazards of noise
- 9.2.2.6 Contractor workers engaged in dust environment shall be issued with necessary dust protection aids and the use of the same shall be enforced
- 9.2.2.7 Workers engaged in exposure to bright light/rays as in welding or radiation shall be issued with eye protection devices and the use of the same shall be enforced
- 9.2.2.8 Adequate arrangements shall be made to provide safe drinking water
- 9.2.2.9 Health monitoring records on at least sample basis for contractor employees & workmen shall be maintained for persons engaged in specified categories of work. These shall include
- Noise induced hearing loss
  - Lung Function test
  - Ergonomic Test
  - Eye Test for Welders, Grinders, Drivers etc

#### **9.2.3.0 HYGIENE and HOUSEKEEPING**

- 9.2.3.1 Good house keeping and proper hygiene is one of the key requirements of Occupational Health Safety and Environment management. Towards this the contractor shall encourage his workers and supervisors to maintain cleanliness in their area of work.
- 9.2.3.2 The Contractor shall arrange to place waste bins/chutes at convenient locations for the collection of scrap and other wastes. The bins shall be clearly marked and segregated for metal, non-metal, hazardous and non hazardous wastes.
- 9.2.3.3 BHEL may take up appropriate remedial measures at the cost of the contractors if the contractors fail good house keeping and if there is an imminent risk of pollution

## **9.2.4ENVIRONMENT MANAGEMENT**

9.2.4.1 BHEL has a sound environmental management system, which is to be maintained and implemented by all the contractors. The system allows for project specific objectives to be set and developed sensitive to Client requirements, applicable environmental legislation and BHEL's own objectives and policy. BHEL engineers will assess and monitor the environmental impact of their work and lay out objectives for their minimisation. The contractors shall implement the objectives for continual improvement of environmental performance. BHEL shall regularly audit environmental impacts and their improvements.

### **9.2.4.2 WASTE MANAGEMENT**

9.2.4.3.1 The objective of waste management is to ensure the safe and responsible disposal of waste, ensuring that it is correctly disposed of and being able to audit the process to ensure compliance.

9.2.4.3.2 Chemical wastes if any shall be collected separately and disposed of to BHEL designated refuse yard as per BHEL advise

9.2.4.3.3 No dangerous chemicals, noxious waste products or materials will be disposed off on or off site without approval obtained through BHEL.

9.2.4.3.4 All disposal of wastes generated during construction shall be in accordance with all relevant legislation.

9.2.4.3.5 Acid and alkali cleaning wastes shall be neutralised to acceptable norms before disposal to the designated area.

9.2.4.3.6 All necessary measures shall be taken to ensure safe collection and disposal of waste oils. In particular to ensure the prevention of their discharge into surface waters, ground waters, coastal waters or drainages

## **9.3 SUPERVISION**

9.3.1 Contractor must provide at least one full time on site safety coordinator when the manpower engaged is in excess of 50 for the contract activities in the premises. If the manpower is less than 50, the on site safety coordination responsibilities shall be assumed by any one of the contractor's other supervisory staff; however in both the cases, the contractor must specify in writing the name of such persons to the BHEL Engineer in Charge .

9.3.2 Contractor's safety coordinator or his supervisor responsible for safety as the case may be shall conduct at his work site, and document formal safety inspection and audits at least once in a week. Such documents are to be submitted to BHEL Engineer in Charge for his review and record. Contractor, supervisor must attend all schedule safety meetings as would be intimated to him by the BHEL Engineer in Charge.

9.3.3 Before starting work under any contract, the contractor must ensure that a job specific safety procedures/field practices as required over and above the safety permit conditions are prepared and followed .He should also ensure that all supervisors and workers involved understand and follow this procedures /field practices.

9.3.4 Contractor must ensure that in his work site appropriate display boards are put displaying signs for site safety , potential hazards and precautions required

#### 9.4.0 **TRAINING & AWARENESS**

9.4.1 Contractor shall deploy experienced supervisors and other manpower who are well conversant with the safety and environment regulations of the Project. The electricians to be deployed on the job should have wireman license.

9.4.2 All Supervisors & Workmen of the Contractor shall undergo Fire safety training/demonstration whenever arranged by BHEL with the help of either Customer's Fire and Safety department or outside faculty so as to acquire knowledge of fire prevention and also to be able to make use of appropriate fire extinguishers.

9.4.3 Contractor must familiarize himself from BHEL Engineer in Charge about all known potential fire, explosion or toxic release hazards related to the contract. He in turn will ensure that same information has been passed to the supervisors and workmen

9.4.4 Contractor must ensure that all his supervisors are properly trained and each employee has received and understood from his supervisor necessary training and briefing about the safety requirement. Necessary document as a means to verify that employees have understood the training is to be maintained.

9.4.5 The contractor supervisors shall also give a small safety briefing to all the workmen under his charge before undertaking any new work and specially understand the safety requirements that are mandatory

#### 9.5.0 **REPORTING**

9.5.1 The contractor shall submit report of all accidents, fires and property damage, dangerous occurrences to the authorised BHEL official immediately after such occurrence but in any case not later than twelve hours of the occurrence. Such report shall be furnished in the manner prescribed by BHEL and also to meet statutory requirement.

9.5.2 Any injury sustained by any of the contractor's employees within the Project premises must be reported to BHEL supervisor and FIRST AID should be immediately administered. The Contractor shall be responsible for keeping and maintaining proper records of Accidents to his personnel.

9.5.3 Contractor must arrange to immediately investigate, properly document and report any injury, accident or near miss involving any of his employees and take

appropriate follow up action. He must furnish within 12 hours of the incident a written report to BHEL Engineer in charge and the Safety Section.

9.5.4 According to the Factory Act and the Employees state Insurance Act & regulation, any person sustaining any injury within the project premises and absenting himself from work for more than 46 hours, his accident report has to be sent to the respective Government Authorities. Therefore contractor shall inform the owner's representative such matter immediately for their needful action.

9.5.5 In addition, contractor shall submit periodic reports on safety to the authorised BHEL official from time to time as prescribed.

9.5.6 Before commencing the work, the contractor shall appoint/nominate a responsible officer to supervise implementation of all safety measures and liaison with his counterpart of BHEL.

## 9.6 **AUDIT REVIEW AND INSPECTION**

9.6.1 BHEL shall conduct audit on the contractor performance and compliance with the project specific requirements of the Environment and Occupational Health & Safety Management systems. The programme of audit shall cover all activities under the contract but will focus particularly on high-risk activities. The Construction Manager shall decide the schedule of audit. The audit findings shall be communicated to the contractors and necessary remedial action as advised by BHEL Engineers shall be under taken within the stipulated time.

9.6.2 Inspections shall be carried out regularly by the contractors and by BHEL Engineers on activities, facilities, equipment, documentation, to cover the following aspects.

- Compliance with procedures and systems
- Availability, condition and use of PPEs
- Condition of maintenance tools, equipments, facilities
- Availability of fire fighting equipments and its condition
- Use of fire fighting equipments and first aid kit
- Awareness of occupational health hazard
- Awareness of safe working practices
- Presence of quality supervision
- Housekeeping

The Safety Co-ordinator shall visit and inspect work sites daily. All unsafe acts, unsafe conditions that have imminent potential for causing harm/injury/damage will be immediately corrected. He shall maintain a daily logbook giving details of unsafe acts or conditions observed and the corrective action taken and recommendations for preventing recurrence. Adequacy of corrective actions will be verified

The contractor shall take remedial measures as per the findings of each inspection

Besides the above, the contractor shall be required to carry out the following inspections

SI no	Equipment	Scope of inspection	Inspection by	Schedule
1	Hand tools	To identify unsafe/defective tool	User	Daily
2	Power tools	To identify unsafe/defective tool	User	Daily
3	Fire Extinguishers	To check pressure and any defect	User / Safety Coordinator	Daily Every month
4	Lifting equipment/tackles	To check for defects and efficacy of brakes	User Third party	Daily Every Year
5	PPE	To check for defects	User	Daily

9.7 **NON COMPLIANCE:-**

9.7.1 NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND THE BHEL HAS RIGHT TO IMPOSE FINES ON THE CONTRACTOR AS UNDER **for every instance of violation noticed:**

Sl. No.	Safety	Fine (in Rs)
01.	Not Wearing Safety Helmet	50/-
02.	Not wearing Safety Belt	100/-
03.	Grinding Without Goggles	50/-
04.	Not using 24 V Supply For Internal Work	500/-
05.	Electrical Plugs Not used for hand Machine	100/-
06.	Not Slings property	200/-
07.	Using Damaged Sling	200/-
08.	Lifting Cylinders Without Cage	500/-
09.	Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property.	200/-
10.	Not Removing Small Scrap From Platforms	200/-
11.	Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting	200/-
12.	Not Maintaining Electric Winches Which are Operated Dangerously	500/-
13.	Improper Earthing Of Electrical T&Ps	500/-

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 contractor. The amount collected above will be utilised for giving award to the employees who could avoid accident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.

- 9.8**      **CITATION:-** If safety record of the contractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognise the safety performance of the contractor may be considered by BHEL after completion of the job

## **9.9      Memorandum of Understanding**

**After Award Of Work, Contractors Are Required To Enter Into A Memorandum Of Understanding As Given Below:**

### Memorandum of Understanding

BHEL, PSWR is committed to Health, Safety and Environment Policy (EHS Policy) as given in the booklet titled “ Safe Working Practices” issued to all contractors.

M/s \_\_\_\_\_ do hereby also commit to the same EHS Policy while executing the Contract Number \_\_\_\_\_

M/s \_\_\_\_\_ shall ensure that safe work practices not limited to the above booklet are followed by all construction workers and supervisors. Spirit and content therein shall be reached to all workers and supervisors for compliance.

BHEL will be carrying out EHS audits twice a year and M/s \_\_\_\_\_ shall ensure to close any non-conformity observed/reported within fifteen days.

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

Name            :

Place & Date:



**9.10** Comprehensive list of National Standards for reference and use wherever applicable in the execution of Civil, Erection and Commissioning Contracts

IS No	YEAR	Amd upto	DESCRIPTION
IS 10204	1982		PORTABLE FIRE EXTINGUISHERS MECHANICAL FOAM TYPE
IS 10245	1994		SPECIFICATION FOR BREATHING APPARATUS
IS 10291	1982		SAFETY CODE FOR DRESS DRIVERS IN CIVIL ENGINEERING WORKS
IS 10658	1983		HIGHER CAPACITY DRY POWDER FIRE EXTINGUISHERS (TROLLEY MOUNTED)
IS 10662	1992		COLOUR TELEVISION
IS 10667	1983		GUIDE FOR SELECTION OF INDUSTRIAL SAFETY EQUIPMENT FOR PROTECTION OF FOOT AND LEG
IS 11037	1984		ELECTRONIC FAN REGULATORS
IS 11057	1984		INDUSTRIAL SAFETY NETS
IS 11451	1998		RECOMMENDATION FOR SAFETY AND HEALTH REQUIREMENT RELATING TO OCCUPATION EXPOSURE TO ASBESTOS
IS 1169	1967		PEDESTAL FANS
IS 1179	1967		SPECIFICATION FOR EQUIPMENT FOR EYE AND FACE PROTECTION DURING WELDING
IS 11833	1986		DRY POWDER FIRE EXTINGUISHERS FOR METAL FIRES
IS 11972	1987		CODE OF PRACTICE FOR SAFETY PRECAUTION TO BE TAKEN WHEN ENTERING A SEWAGE SYSTEM
IS 1287	1986		ELECTRIC TOASTER
IS 13063	1991		STRUCTURAL SAFETY OF BUILDINGS ON SHALLOW FOUNDATIONS ON ROCKS
IS 13385	1992		SPECIFICATIONS FOR FIRE EXTINGUISHERS 50 LITRE WHEEL MOUNTED WATER TYPE ( GAS CARTRIDGES)
IS 13386	1992		SPECIFICATIONS FOR FIRE EXTINGUISHERS 50 LITRE MECHANICAL FOAM TYPE

IS 13415	1992		CODE OF SAFETY FOR PROTECTIVE BARRIERS IN AND AROUND BUILDINGS
IS 13416	1992		RECOMMENDATIONS FOR PREVENTIVE MEASURES AGAINST HAZARDS AT WORKING PLACE PART 1 TO PART 5
IS 13430	1992		CODE OF PRACTICE FOR SAFETY DURING ADDITIONAL CONSTRUCTION AND ALTERATION TO EXISTING BUILDINGS
IS 13849	1993		PORTABLE FIRE EXTINGUISHERS DRY POWDER TYPE ( CONSTANT PRESSURE)
IS 1446	1985		CLASSIFICATION OF DANGEROUS GOODS (FIRST REVISION)
IS 1476	1979		REFRIGERATORS
IS 1641	1988		CODE OF PRACTICE FOR FIRE SAFETY OF BUILDINGS (GENERAL): GENERAL PRINCIPLES OF FIRE GRADING AND CLASSIFICATION
IS 1642	1989		CODE OF PRACTICE FOR FIRE SAFETY OF BUILDINGS- DETAILS OF CONSTRUCTION
IS 1643	1988		CODE OF PRACTICE FOR FIRE SAFETY OF BUILDINGS (GENERAL): EXPOSURE HAZARD
IS 1646	1997		CODE OF PRACTICE FOR FIRE SAFETY OF BUILDINGS (GENERAL): ELECTRICAL INSTALLATIONS
IS 1904	1986		CODE OF PRACTICE FOR DESIGN AND CONSTRUCTION OF FOUNDATIONS IN SOIL
IS 1905	1987		STRUCTURAL SAFETY OF BUILDINGS MASONARY WALLS
IS 2082	1985		ELECTRICAL GEYSERS
IS 2171	1985		PORTABLE FIRE EXTINGUISHERS DRY POWDER TYPE (CARTRIDGE)
IS 2309	1989		PRACTICE FOR THE PROTECTION OF BUILDINGS AND ALLIED BUILDINGS AGAINST LIGHTENING
IS 2312	1967		EXHAUST FANS
IS 2361	1994		SPECIFICATION FOR BUILDING GRIPS – FIRST REVISION
IS 2418	1977		TUBULAR FLUORSCENT LAMPS IS 2418 (FT-1)
IS 2750	1964		STEEL SCAFFOLDINGS
IS 2762	1964		SAFE WORKING LOADS IN KGS FOR WIRE ROPE SLINGS
IS 2878	1986		FIRE EXTINGUISHERS CARBON DIOXIDE TYPE (PORTABLE AND TROLLEY MOUNTED)

IS 2925	1984		SPECIFICATION FOR INDUSTRIAL SAFETY HELMETS
IS 3016	1982		CODE OF PRACTICE FOR FIRE PRECAUTIONS IN WELDING AND CUTTING OPERATIONS- FIRST REVISION
IS 3315	1974		DESERT COOLERS
IS 3521	1989		INDUSTRIAL SAFETY BELTS AND HARNESS
IS 368	1983		IMMERSION WATER HEATERS
IS 3696	1991		SAFETY CODE OF SCAFFOLDS AND LADDERS PART 1 TO 2
IS 3737	1996		LEATHER SAFETY BOOTS FOR WORKERS IN HEAVY METAL INDUSTRIES
IS 374	1979		CEILING FANS INCLUDING REGULATORS
IS 3764	1992		EXCAVATION WORK – CODE OF SAFETY
IS 3786	1983		METHOD FOR COMPUTATION OF FREQUENCY AND SEVERITY RATES FOR INDUSTRIAL INJURIES AND CLASSIFICATION OF INDUSTRIAL ACCIDENTS
IS 3935	1966		CODE OF PRACTICE FOR COMPOSITE CONSTRUCTION
IS 4014	1967		CODE OF PRACTICE FOR STEEL TUBULAR SCAFFOLDING
IS 4081	1986		SAFETY CODE FOR BLASTING AND RELATED DRILLING OPERATIONS
IS 4082	1977	1996	STACKING AND STORAGE OF CONSTRUCTION MATERIALS AND COMPONENTS AT SITE
IS 4130	1991		DEMOLITION OF BUILDINGS – CODE OF SAFETY PART 1 TO 2
IS 4138	1977		SAFETY CODE FOR WORKING IN COMPRESSED AIR (FIRST REVISION)
IS 4155	1966		GLOSSARY OF TERMS RELATING TO CHEMICAL AND RADIATION HAZARDS AND HAZARDOUS CHEMICALS
IS 4209	1967		CODE OF SAFETY FOR CHEMICAL LABORATORY
IS 4250	1980		FOOD MIXERS
IS 4262	1967		CODE OF SAFETY FOR SULFURIC ACID
IS .....6	1978		SAFETY CODE FOR TUNNELING WORK
IS 4912	1978		SAFETY REQUIREMENTS FOR FLOOR AND WALL OPENINGS, RAILINGS AND TOE BOARDS
IS 5121	1969		SAFETY CODE FOR PILING AND OTHER DEEP FOUNDATIONS

IS 5182	1969	1982	METHODS FOR MEASUREMENT OF AIR POLLUTION
IS 5184	1969		CODE OF SAFETY FOR HYDROFLUORIC ACID
IS 5216	1982	2000	RECOMMENDATIONS ON SAFETY PROCEDURES AND PRACTICE IN ELECTRICAL WORK PART I AND II
IS 555	1979		TABLE FANS
IS 5557	1995		INDUSTRIAL AND SAFETY LINED RUBBER BOOTS ( SECOND REVISION)
IS 5916	1970		SAFETY CODE FOR CONSTRUCTION INVOLVING USE OF HOR BITUMINOUS MATERIALS
IS 5983	1980		SPECIFICATION FOR EYE PROTECTORS – FIRST REVISION
IS 6234	1986		PORTABLE FIRE EXTINGUISHERS WATER TYPE ( STORED PRESSURE)
IS 692	1994		CRITERIA FOR SAFETY AND DESIGN OF STRUCTURES SUBJECTED TO UNDERGROUND BLASTS
IS 6994	1973		SPECIFICATION FOR SAFETY GLOVES
IS 7155	1986		CODE OF RECOMMENDED PRACTICE FOR CONVEYOR SAFETY (PART 1 TO 8)
IS 7205	1974		SAFETY CODE FOR ERECTION OF STRUCTURAL STEEL WORK
IS 7293	1974		SAFETY CODE FOR WORKING WITH CONSTRUCTION MACHINERY
IS 7323	1994		GUIDELINES FOR OPERATIONS OF RESERVOIRS
IS 7812	1975		CODE OF SAFETY FOR MERCURY
IS 7969	1975		SAFETY CODE FOR HANDLING AND STORAGE OF BUILDING MATERIALS
IS 8089	1976		CODE OF SAFE PRACTICE FOR LAYOUT OF OUTSIDE FACILITIES IN AN INDUSTRIAL PLANT
IS 8091	1976		CODE OF PRACTICE FOR INDUSTRIAL PLANT LAYOUT
IS 8095	1976		ACCIDENTS PREVENTION TAGS
IS 818	1968	1997	CODE OF PRACTICE FOR SAFETY AND HEALTH REQUIREMENTS IN ELECTRIC AND GAS WELDING, AND CUTTING OPERATIONS
IS 8448	1989		AUTOMATIC LINE VOLTAGE CORRECTOR (STABILISER)
IS 8519	1977		GUIDE FOR SELECTION OF INDUSTRIAL SAFETY EQUIPMENT FOR BODY PROTECTION
IS 8520	1977		GUIDE FOR SELECTION OF INDUSTRIAL SAFETY EQUIPMENT FOR EYE, FACE

			AND EAR PROTECTION
IS 875	1987		STRUCTURAL SAFETY OF BUILDING: LOADING STANDARD PART 1 TO 5
IS 8807	1978		GUIDE FOR SELECTION OF INDUSTRIAL SAFETY EQUIPMENT FOR PROTECTION OF ARMS AND HANDS
IS 8978	1985		INSTANTANEOUS WATER HEATERS
IS 8989	1978		SAFETY CODE FOR ERECTION OF CONCRETE FRAMED STRUCTURES
IS 940	1989		PORTABLE FIRE EXTINGUISHERS WATER TYPE ( GAS CARTRIDGE)
IS 9457	1980		SAFETY COLOURS AND SIGNS
IS 9679	1980		CODE OF SAFETY FOR WORK ENVIRONMENTAL MONITORING
IS 9706	1997		CODE OF PRACTICE FOR THE CONSTRUCTION OF AERIAL RPEWAYS FOR THE TRANSPORTATION OF MATERIAL
IS 9759	1981		GUIDELINES FOR DEWATERING DURING CONSTRUCTION
IS 9815	1989		SERVO MOTOR OPERATED LINE VOLTAGE CORRECTOR (SERVO STABILISER)
IS 9944	1992		RECOMMENDATIONS ON SAFE WORKING LOAD FOR NATURAL AND MAN-MADE FIBRE ROPE SLINGS
IS 996	1979		SINGLE PHASE ELECTRIC MOTORS
ISO 3873	1977		SAFETY HELMET

## SECTION-10

### SPECIAL CONDITIONS OF CONTRACT

#### 10.0 Drawings and Documents

##### 10.1

The detailed drawings, specifications available with BHEL engineers will also form part of this tender specification. Revision of drawings/documents may take place due to various considerations as is normal in such large project. Work will have to be carried out as per revised drawings/ documents. These documents will be made available to the contractor during execution of work at site.

##### 10.2

One set of necessary drawings/documents to carry out the erection work will be furnished to the contractor by BHEL on loan that shall be returned to BHEL after completion of the work. Contractor's personnel shall take care of these documents given to them.

##### 10.3

The data furnished in various sections and appendices and the drawings enclosed with this tender specification describe the equipment to be installed, tested and commissioned under this specification, briefly. However, the changes in the design and in the quantity may be expected to occur as is usual in any such large scale of works.

##### 10.4

If any error or ambiguity is discovered in the specification/information contained in the documents/ drawings and tender, the contractor shall forthwith bring the same to the notice of BHEL before submission of offer.

##### 10.5

In case an ambiguity is detected after award of work, the same must be brought to the notice of bhel before commencement of the work/activity. BHEL's interpretation in such cases will be final and binding on the contractor.

##### 10.6

In case of any conflict between general instructions to tenderers, general conditions of contract contained in sections 1 & 2 respectively and special conditions of contract contained in sections 4 to 15 and appendices, provisions contained in special conditions of contract in sections 4 to 15 and appendices shall prevail.

##### 10.7

In case of discrepancy between quoted item rate and corresponding amount in the Rate Schedule, the **quoted item rates shall be reckoned as correct and amount recalculated**. Quoted item rates shall also prevail for arriving at the total price. Evaluation of offer will be done by BHEL on Total Price of the Rate Schedule.

##### 10.8

Bank Guarantees to be furnished by the contractor towards Security Deposit and Performance Guarantee (last 5% payment against workmanship warranty/defect liability) shall have a claim period of six months over and above the validity period required for the respective cases. BG for advance payment shall be kept valid for a period of two more months beyond the recovery period of the advance with interest thereof.

## SECTION-11

### SPECIAL CONDITIONS OF CONTRACT

#### 11.0 TIME SCHEDULE, MOBILIZATION, PROGRESS, PLANNING AND MONITORING, COMPLETION, AND VARIATIONS etc.

##### 11.1

CONTRACTOR HAS TO MOBILISE THEIR MATERIALS, RESOURCES AND WORK FORCE SO AS TO START THE WORK **WITHIN 10 DAYS OF FAX/TELEGRAPHIC INTIMATION OF AWARD OF WORK**. FURTHER MOBILIZATION OF FRESH RESOURCES AND AUGMENTATION OF EXISTING RESOURCES SHALL BE DONE IN CONSULTATION WITH BHEL IN ALL THE AREAS IN SUCH A MANNER THAT THE ENTIRE WORK IS COMPLETED **WITHIN THE CONTRACT PERIOD OF 5 (FIVE ) MONTHS**.

**Total Contract Time Schedule: 5 (Five) Months**

**Milestone activities - Break up activities completion period :**

SR.NO.	MILESTONE ACTIVITY	PERIOD
1	<b>Construction of Closed Stores Shed (60m x15m)...2 No</b>	Four (4) months from the date of first excavation at site.
2	<b>Internal and External Electrification of both closed shed</b>	Five (5) months from the date of first excavation at site.

**Total Contract Time Schedule: 5 (Five) Months**

THE OVERALL CONTRACT PERIOD SHALL BE **FIVE MONTHS**. CONTRACTOR SHALL NOTE THAT INDIVIDUAL MILESTONES AS ABOVE SHALL BE ACHIEVED AS PER SCHEDULE FURNISHED ABOVE. THE DATE OF START OF FIRST EXCAVATION SHALL BE RECKONED AS THE START OF CONTRACT PERIOD FOR THIS PURPOSE.

THE CONTRACTOR SHALL REACH SITE AND ESTABLISH HIS SITE OFFICE AND MOBILIZE NECESSARY RESOURCES WELL IN ADVANCE OF ACTUAL COMMENCEMENT OF THE CONTRACT TIME SCHEDULE AS PER DIRECTIONS OF BHEL ENGINEER. THE DATE OF COMMENCEMENT FOR THE PURPOSE OF CLAUSE 11.1 SHALL BE THE DATE ON WHICH FIRST EXCAVATION WORK IS STARTED.

##### 11.1.2 GRACE PERIOD

Grace period of **ONE MONTH** beyond the contract period of FIVE month is provided for this contract. However, all milestone events as per actual requirement of project schedule shall have to be achieved by the contractor without taking recourse to the Grace Period.

#### 11.2 Progress Monitoring, Contract Extension and Over Run

##### 11.2.1 Progress Monitoring

Progress will be reviewed periodically (daily / weekly / monthly) including month end review vis-a-vis the plans drawn as above. The contractor shall submit periodical progress reports, and other reports / information including manpower, consumables etc as desired by BHEL.

### **11.2.2 Ascertaining and Establishing the Reasons for Shortfall**

The onus probandi that the causes leading to extension of the contract period is not due to any reasons attributable to the contractor is on him (the contractor). Review of the performance as stated vide Clause 11.2.1 above will be made considering the availability of components to be erected and other inputs / constraints over which the contractor has no control. The programme will be reviewed area-wise and the following facts will be recorded in case of shortfall at the end of every month:

#### **11.2.2.1**

A) Erection / Commissioning programme not achieved owing to non-availability of fronts.

B) Erection/Commissioning programme not achieved owing to non-availability of materials.

11.2.2.2 Erection/Commissioning programme not achieved owing to non-availability of tools and plants, manpower and consumables by the contractor or any other reason attributable to the contractor.

11.2.2.3 Erection / Commissioning programme not achieved due to any other reasons not attributable to the contractor.

### **11.3 Contract Extension**

#### **11.3.1**

If the completion of work as detailed in these specification gets delayed beyond the end of contract period and grace period then depending on the balance work left out, BHEL at its discretion may extend the contract.

#### **11.3.2**

A joint programme shall be drawn for the work to be completed during the extended contract period. Review of the program and record of shortfall as describe vide clause 11.2.2 shall be done during the extended period. The overrun charges will be paid in proportion to the achievement of the respective month vis-à-vis the plan for the month (for assessing the performance, the agreed plan shall be reduced by shortfall attributable to the BHEL). BHEL may disallow contractor's claim for over run charges, if the monthly programme as mentioned here not made by him.

#### **11.3.3**

The part of extension attributable to the contractor, if any, in total contract extension shall be exhausted first i.e. immediately after end of grace period. This shall be followed by the extension on account of force majeure conditions, if any, and lastly on account of BHEL.

### **11.4 Overrun Compensation**

No OVERRUN COMPENSATION SHLL BE applicable to this contract

### **11.5 Price Variation**

Agreed price/rate shall remain firm through out the contract period including grace period and extended period thereof. No price variation/adjustment shall be applicable for this contract and clause No.2.15 of General Conditions of Contract shall not be applicable.



## **11.6 Interest Bearing Recoverable Advance**

Interest bearing (rate of interest shall be prime leading rate of SBI plus 2% per annum, on monthly reducing balance basis) recoverable advance limited to 5% of the contract value may be paid by BHEL at its discretion depending on the merit of the case against receipt & acceptance of bank guarantee from the contractor for the amount sought. This bank guarantee (BG) shall be valid at least for one year or the recovery duration. In case recovery of dues does not get completed within the aforesaid BG validity period, the contractor must renew the validity of BG or submit fresh BG for the outstanding amount and remaining recovery period. BHEL is entitled to make recovery of the entire outstanding amount in case the contractor fails to comply with the BG requirement as above.

Recovery of dues will be made minimum @ 10% of the admitted gross running bill amount from the first applicable running bill onwards till entire due (principal plus interest) is recovered. In the event sufficient time duration is not left for recovery @10%, the rate of recovery shall be suitably enhanced so that entire due is recovered by the time contractor reaches 90% billing of total value of work executed & within the contract period (including extensions granted or foreclosure if any).

## **11.7 Definition of Work Completion**

The contractor's scope of work under these specifications will deem to have been completed in all respect, only when all the activities are completed satisfactorily and so certified by BHEL site in charge. The decision of BHEL in this regard shall be final and binding on the contractor.

## **11.8 SECURED ADVANCE**

Interest free secured advance up to a maximum 75% of the value as given in paid up purchase voucher of the following materials required for incorporation in the permanent works and brought at site duly certified by Engineer shall be payable to contractor.

- a) Cement.
- b) Reinforcement Steel, Trusses and other steel related items under contractor's scope of supply including MS Bolts
- c) Rolling shutters, AC sheets

The claim for secured advance is to be given in the prescribed form. A formal deed of hypothecation is to be drawn up on non-judicial stamp paper under which BHEL secured a lien on the materials and safeguarded against losses due to contractor postponing the execution of the work due to storage or misuse of materials and against expenses incurred on their watch and safe custody. Secure advance shall be adjusted in the interim bills prorated to work billed.

No secured advance will be paid by BHEL against value of any erection equipment brought to site by the contractor.

## **11.9 SPLITTING OF WORK**

BHEL reserves the right to split up the work and award to more than one agency in case contractor fails to provide adequate resources, manpower etc. to achieve the desired progress of work

## **11.10 VARIATION IN QUANTITY**

The quantities against all the items of the Rate Schedule are approximate and may vary up to any extent or may be deleted altogether. The agreed rate of each item shall remain firm for any variation on individual quantity or total quantity/ value. Payment shall be made as per agreed items rates for the quantities actually executed and measurements accepted by BHEL. The contractor has to take note of this and quote his rates accordingly.

#### **11.8     Liquidated damages ( L D )**

**L D shall be applicable as per General Terms & Conditions ( GCC ) of contract.**

#### **11.9     EXTRA WORK**

Rate for Extra work if any required to be executed at site shall be worked out on the following basis.

- Rate shall be derived from the similar nature of item from existing Schedule of Item rates.
- If no similar items are available in existing Schedule, the same shall be worked out as per Analysis of rates of CPWD- 2008 Edition by applying current rate of materials & labour obtained from authentic sources or Finished rate of CPWD (Delhi Schedule of Rate) – 2008 edition plus applicable PVC.

## SECTION-12

### SPECIAL CONDITIONS OF CONTRACT

#### 12.0 TERMS OF PAYMENT

##### 12.0.1

The contractor shall submit his monthly RA account bills with all the details required by BHEL on specified date every month covering progress of work in all respects and areas for the previous calendar month. However, first RA Bill shall be released only after signing of Contract Agreement.

##### 12.0.2

Clause 2.6 of general conditions of contract shall be referred to as regards mode of payment, and measurement of the work completed.

##### 12.0.3

Release of payment in each running bill will be restricted to 95% of the value of work admitted, as per the percentage break-up for the stage of work completion stipulated vide clauses hereinafter.

The 5% thus remaining shall be on account of workmanship guarantee of work executed. The same will be released after completion of the guarantee period of **12 months** from the date of completion of entire work as certified by BHEL.

However, on specific request of vendor, this amount may be released on pro rata basis for the value of work executed and accepted by BHEL, along with any RA Bill and onwards, subject to receipt and acceptance of bank guarantee of equal amount in BHEL's prescribed format. The BG shall be kept valid till completion of such guarantee period and an additional six months claim period. This is also subject to the condition that the contractor has started the work and also furnished/remitted the initial Security Deposit as per contract.

##### 12.0.4

The payment for running bills will normally be released within around 30 days of submission of running bill with measurement sheets. Contractor shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile.

##### 12.0.5

BHEL will release payment through Electronic Fund Transfer (EFT)/RTGS. In order to implement this system, the following details are to be furnished by the Contractor pertaining to his Bank Accounts where proceeds will be transferred through BHEL's banker:

1. Name of the Company
2. Name of Bank
3. Name of Bank Branch
4. City/Place
5. Account Number
6. Account type
7. IFSC code of the Bank Branch
8. MICR Code of the Bank Branch

BHEL may also choose to release payment by other alternative modes as suitable.

### **12.1.0 Stages of Progressive Payments**

Subject to any deductions, which BHEL may be authorized to make under the contract, the contractor shall on the certificate of the engineer at site be entitled for payment as under.

#### **12.1.1**

The percentage of payment for progressive completion of work in various categories of work shall be as under:

100% of agreed item rate will released for complete work against monthly R.A. bill of all items of Rate Schedule SECTION-A, SECTION-B.

### **12.2 PAYMENT FOR WORK COMPLETED**

#### **12.2.1**

The contractor should submit his on account bills with all the details required by BHEL on 26<sup>th</sup> of every month covering progress of work in all respects and areas up to 24<sup>th</sup> day of the same month.

#### **12.2.2**

The payment for running bills will normally be released within around 30 days of submission of running bill with measurement sheets. Contractor shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile.

#### **12.2.3**

On receipt of the bill, joint measurement and checking of the work done will be carried out by the concerned BHEL engineer as per clause 2.6 of General Conditions of the Contract and break-up given vide clause 12.0. It shall be final and binding on the contractor.

#### **12.2.4**

The payment for running bills will normally be released in around 30 days of submission of running bill with measurement sheets. Contractor shall make his own arrangement for making payment of impending labour wages and other dues in the meanwhile.

## **SECTION-13**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **13.0 DETAILS TO BE FURNISHED BY THE BIDDERS**

Apart from other details called for in the tender document under the various other provisions, the following details shall be submitted by the tenderers along with their offers (Technical Bid). Please also refer the checklist furnished in the beginning of the Tender Specification.

##### **13.1**

Contractor shall submit his HQ and Site organization charts.

##### **13.2**

Contractor shall submit tentative month-wise plan to match the Completion Schedule as in Section-11 of Special Conditions of Contract.

##### **13.3**

Contractor shall furnish the list of major tools and plants owned by them as well as T&P deployment plan for this work.

##### **13.4**

Contractor shall furnish the names of engineers, supervisors, and other specialized staff working with him for more than two years.

##### **13.5**

Contractor shall furnish month-wise deployment plan of manpower.

## **SECTION-14**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **INSURANCE**

##### **14.1**

BHEL HAS ARRANGED A COMPREHENSIVE MARINE, STORAGE CUM ERECTION INSURANCE COVER ALL RISKS INCLUDING DAMAGES/LOSS OCCURRING DURING INLAND TRANSPORT. BUT SUCH COVER IS LIMITED TO ONLY THE MATERIALS TRANSPORTED.

##### **14.2**

THE CONTRACTOR HAS TO ARRANGE ON HIS OWN, INSURANCE COVER FOR ALL THE T&P AND OTHER CONSTRUCTION EQUIPMENTS DEPLOYED AT SITE. SUCH ASSETS ARE NOT COVERED IN INSURANCE POLICY TAKEN BY BHEL.

##### **14.3**

IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE FOR ACCIDENT RISK POLICY/WORKMEN COMPENSATION POLICY FOR THE STAFF AND WORKMEN.

##### **14.4**

THE CONTRACTOR HAS TO PROVIDE ASSISTANCE IN LODGING AND REALIZING THE INSURANCE CLAIMS COVERED BY THE MCE INSURANCE POLICY THAT IS TAKEN BY BHEL. SCOPE SHALL INCLUDE RECEIPT INSPECTION (SHORTAGE/DAMAGE/LOSS REPORTING) IMMEDIATELY ON ARRIVAL OF CONSIGNMENT, RECORDING SUCH DAMAGE/LOSS/SHORTAGE INTIMATION ON THE LR/RR/LWB DULY COUNTERSIGNED BY THE DRIVER/TRANSPORTER'S REPRESENTATIVE WHILE ACKNOWLEDGING RECEIPT OF CONSIGNMENT TO THE CONCERNED TRANSPORTER, INTIMATING THE LOSS/DAMAGE/SHORTAGE TO BHEL, PROVIDING ASSISTANCE FOR INSPECTION OF THE REPORTED CONSIGNMENT AT THE TIME OF INSURANCE SURVEY, LIAISONING WITH THE TRANSPORTER AND INSURANCE COMPANY ETC.

##### **14.5**

IN CASE OF THEFT / DAMAGE / LOSS OF MATERIALS DUE TO NEGLIGENCE OR FAILURE ATTRIBUTABLE TO THE CONTRACTOR, THE EXPENSES INCURRED ON ACCOUNT OF REPAIR/ REPLACEMENT OF SUCH COMPONENTS INCLUDING BHEL'S OVERHEAD EXPENSES AS APPLICABLE (PRESENTLY @ 30%) IN EXCESS OF THE AMOUNT REALIZED FROM THE UNDERWRITERS SHALL BE RECOVERED FROM THE CONTRACTOR. RECOVERY WILL BE LIMITED TO NORMAL DEDUCTIBLE FRANCHISE (DF) / EXCESS AS PER APPLICABLE INSURANCE TARIFF (TAC) GUIDELINES. HOWEVER, IN CASE SUCH INSURANCE CLAIM IS SUMMARILY REJECTED BY THE UNDERWRITERS DUE TO **WILFUL** DAMAGE/LOSS ON THE PART OF THE CONTRACTOR, THE TOTAL COST OF REPAIR/ REPLACEMENT SHALL BE RECOVERED FROM THE CONTRACTOR.

#### **14.6 INSURANCE BY THE CONTRACTOR AND INDEMNIFICATION OF BHEL**

BHEL HAVE TAKEN A THIRD PARTY LIABILITY INSURANCE, INDICATING IN THE PROPOSAL FOR SUCH INSURANCE THAT SUB-CONTRACTORS WILL BE TAKING PART IN THE ERECTION WORK DETAILED IN THIS TENDER. HOWEVER, THE TENDERER HAS TO BEAR ANY EXPENSES/ CONSEQUENCES OVER AND ABOVE THE AMOUNT THAT MAY BE REIMBURSED TO BHEL BY SUCH COVERAGE OF THIRD PARTY LIABILITY INSURANCE TAKEN BY BHEL.

SUCH ADDITIONAL LIABILITY WILL BE TO COVER AND INDEMNIFY BHEL AND ITS CUSTOMER OF ALL LIABILITIES WHICH MAY COME UP AND CAUSE HARM/DAMAGE TO OTHER CONTRACTORS/ CUSTOMER/BHEL PROPERTIES/PERSONNEL OR ALL OR ANYBODY RENDERING SERVICE TO BHEL/CUSTOMER OR IS CONNECTED WITH BHEL / CUSTOMER'S WORK IN ANY MANNER WHATSOEVER. THE TENDERER'S SPECIFIC ATTENTION IS ALSO INVITED TO CLAUSE 2.10 OF GENERAL CONDITIONS OF CONTRACT.

CONTRACTOR SHALL OBTAIN AND OPERATE SUITABLE INSURANCE POLICIES TO COVER THE RISK PERTAINING TO THE ASSETS/PROPERTIES AND PERSONNEL BELONGING TO OR DEPLOYED BY HIM.

## SECTION-15

### SPECIAL CONDITION OF CONTRACT

#### 15.0 EARNEST MONEY DEPOSIT, SECURITY DEPOSIT & BANK GUARANTEE

##### 15.1 Earnest Money Deposit:

- i) EMD for this tender is Rs. 1,50,000/- (Rupees One lakhs fifty thousand only).**
- ii) Bidders who have already deposited One Time EMD of Rs. 2.00 lakh are exempted from submission of EMD for this tender. However a copy of 'One Time EMD' certificate issued by BHEL/PSWR, Nagpur shall be enclosed along with the Offer.
- iii) EMD is to be paid in cash (as permissible under Income Tax Act), Pay order or Demand Draft in favour of Bharat Heavy Electricals Limited and payable at Nagpur.**
- iv) No other form of EMD remittance shall be acceptable to BHEL.**

##### 15.1.1 EMD by the bidder will be forfeited as per Tender Documents if

- i) After opening the tender, the bidder revokes his tender within the validity period or increases his earlier quoted rates.
- ii) The bidder does not commence the work within the period as per LOI/Contract. In case the LOI / contract is silent in this regard then within 15 days after award of contract.

##### 15.1.2 EMD shall not carry any interest.

##### 15.1.3 In the case of unsuccessful bidders, the Earnest Money will be refunded to them after acceptance of tender by successful bidder

#### 15.2 Security Deposit

##### 15.2.1 Security Deposit shall be furnished by the successful bidder. The rate of Security Deposit will be as below:

SN	Contract Value	Security Deposit Amount
1	Up to Rs. 10 lakhs	10% of Contract Value
2	Above Rs. 10 lakhs upto Rs.50 lakhs	1 lakh + 7.5% of the Contract Value exceeding Rs. 10 lakhs.
3	Above Rs. 50 lakhs	Rs 4 lakhs + 5% of the Contract Value exceeding Rs. 50 lakhs.

The security Deposit should be furnished before start of the work by the contractor.

##### 15.2.2 Security Deposit may be furnished in any one of the following forms

- i. Cash (as permissible under the Income Tax Act)
- ii. Pay Order, Demand Draft in favour of BHEL.
- iii. Local cheques of scheduled banks, subject to realization.
- iv. Securities available from 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 pledged in favour of BHEL and discharged on the back).

- v. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- vi. 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.
- vii. Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be remitted (either by cash/DD or **BG for maximum 50%** of total SD) before start of the work and the balance 50% may be recovered from the running bills.
- viii. EMD of the successful bidder shall be converted and adjusted against the cash Security Deposit excepting for such bidder who has remitted One Time EMD.
- ix. The Security Deposit shall not carry any interest.

**NOTE:** Acceptance of Security Deposit against Sl. No. (iv) and (vi) above will be subject to hypothecation or endorsement on the documents in favour of BHEL. However, 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.

### **15.2.3 SECURITY DEPOSIT SHALL NOT BE REFUNDED TO THE CONTRACTOR EXCEPT IN ACCORDANCE WITH THE TERMS OF THE CONTRACT**

### **15.3 BANK GUARANTEE**

- i. It is the responsibility of the bidder to get the Bank Guarantees revalidated/extended for the required period as per the advice of BHEL Site Engineer / Construction Manager. BHEL shall not be held liable for issue of any reminders regarding expiry of the Bank Guarantees.
- ii. In case extension/further extensions of any Bank Guarantees are not required, the bidders shall ensure that the same is explicitly conveyed through the Construction Manager to BHEL PSWR/HQ, Nagpur
- iii. In case the Bank Guarantees are not extended before the expiry date, BHEL reserves the right to invoke the same by informing the concerned Bank in writing, without any advance notice/communication to the concerned bidder.
- iv. **Bidders to note that any corrections to Bank Guarantees shall be done by the issuing Bank, only through an amendment in an appropriate non judicial stamp paper.**
- v. Bidders to ensure that the Bank Guarantees submitted are exactly as per format given in the Tender documents.
- vi. The Original Bank Guarantee shall be sent directly by the Bank to BHEL under Registered Post (Acknowledgement Due). However, in exceptional cases, where guarantee is directly received by Vendor, the Vendor shall instruct the Bank to send an unstamped duplicate copy of the guarantee directly to BHEL under Registered Post (Acknowledgement Due).

#### **15.3.1 Guidelines for acceptance of Bank Guarantees are as follows :**

- Vendors are advised to obtain BG from any of the following BHEL consortium banks



State Bank of India  
ICICI Bank Ltd  
Bank of Baroda  
Canara Bank  
Citi bank N.A  
Corporation Bank  
Detshe Bank  
HDFC Bank Ltd

The Hongkong and Shanghai banking Corporation Ltd.  
ABN Amro Bank N.V  
IDBI Ltd  
Punjab National Bank  
Standard Chartered Bank  
State Bank of Travancore  
State Bank of Hyderabad  
Syndicate Bank

- The Bank Guarantees of all Public sector banks shall be accepted (Other than consortium banks also).
- The Bank Guarantees of Co-operative banks shall not be accepted.
- Bank Guarantees of other banks (banks other than consortium bank, public sector bank, & Co-operative banks) can be accepted subject to an overall exposure limit (at BHEL, PSWR, Nagpur) of RS. 10 crores for banks with net worth of more than Rs. 500 crores as on last balance sheet date and Rs 5 crores for banks with net worth between Rs. 350 to Rs 500 crores (A certificate and copy of latest Balance Sheet to be given at the time of submission of bank guarantees .
- In case Bank Guarantees given by non consortium banks (Private sector or Public sector), the bank Guarantees shall be enforceable at Nagpur, Maharastra.

## **APPENDIX-I**

### **LIST OF T&P TO BE PROVIDED BY BHEL FREE OF HIRE CHARGES ON SHARING BASIS**

**NO T&P WILL BE PROVIDED BY BHEL TO THE CONTRACTOR**

**ANNEXURE -II**  
**LIST OF TOOLS AND PLANTS TO BE ARRANGED BY CONTRACTOR**

- 1) Concrete Mixture -3 nos
- 2) Vibrators- 5nos
- 3) Leveling instrument with calibration certificate as required
- 4) Theodolite with calibration certificate as required
- 5) Shuttering materials as per requirement
- 6) Cube moulds required nos and testing arrangement
- 7) Slump testing cone as required
- 8) Pump with motor required for curing
- 9) Power generator (of Minimum 63 KVA )-1No
- 10) Diesel/Petrol/Electric Pumpset (2.5 HP )-4no
- 11) Electric Water Pump (1.5HP )-2no
- 12) Welding Transformer-3nos
- 13) Gas cutting Set- 3 Nos
- 14)Drilling Machine- 2Nos
- 15)JCB- 1No
- 16) Water Tanker- 1No
- 17) Plate compactor (Electric)
- 18) Tractor- Trailer- 2No
- 19)Tripper-2Nos
- 20 )Chain Pulley Block (3T)- 3No
- 21) Grinding Machine-2Nos
- 22) Fire extinguishers & Fire Buckets-2Nos

**NOTE**

The above list is only indicative and not exhaustive. Arrangement for any other T and P required for completion of the job shall be the responsibility of the contractor and shall be arranged by him.

**APPENDIX- III**

**ANALYSIS OF UNIT RATE QUOTED ( BIDDER MUST FILL THIS FORMAT )**

SL.NO.	DESCRIPTION	% OF QUOTED RATE	REMARKS
01	SITE FACILITIES VIZ., ELECTRICITY, WATER OTHER INFRASTRUCTURE.		
02	SALARY AND WAGES + RETRENCHMENT BENEFITS		
03	CONSUMABLES		
04	T&P DEPRECIATION & MAINTENANCE		
05	ESTABLISHMENT & ADMINISTRATIVE EXPENSES		
06	OVERHEADS		
07	PROFIT		
	TOTAL	100%	

SIGNATURE OF THE TENDERER

DATE:

# APPENDIX-IV

**MONTHWISE MANPOWER DEPLOYMENT PLAN (CATEGORYWISE NUMBERS TO BE INDICATED FOR EACH MONTH) FOR TOTAL CONTRACT PERIOD ( BIDDER MUST SUBMITT THIS PLAN WITH YOUR OFFER )**

SL. NO.	CATEGORY	MONTHS										
		1	2	3	4	5	6	7	8	9	10	SO ON
01	RESIDENT ENGINEER											
02	ENGINEERS											
03	SUPERVISORS											
04	MATERIALS MANAGEMENT SUPERVISORS											
05	SAFETY ENGINEER											
06	WELDER											
07	PLUMBERS											
08	CARPENTERS											
09	BAR BENDERS											
10	TRUCK/TRAILER DRIVERS, CONCRETE MIXTURE OPERATORS											
11	SAFETY ENGINEER											
12	STORE KEEPERS											
13	ELECTRICIANS											
14	SEMISKILLED/ UNSKILLED WORKERS											
15	MASONS											
SO ON												
	MONTH WISE TOTAL											

**Bidder may use the separate sheet to furnish the above details SIGNATURE OF TENDERER**

DATE:

TS No:BHE/PW/PUR/KNT-ENB/.....

61

SIGNATURE OF BIDDER WITH SEAL

APPENDIX-V

**FORMAT FOR DEPLOYMENT PLAN FOR MAJOR TOOLS AND PLANTS**

**CATEGORYWISE NUMBERS TO BE INDICATED FOR EACH MONTH FOR TOTAL CONTRACT PERIOD OF EIGHT MONTHS. BIDDER  
MUST INCLUDE THE T&P AS SPECIFIED BY BHEL AS PER APPERNDIX-I**

SL. NO.	DESCRIPTION & CAPACITY OF T&P	MONTHS										
		1	2	3	4	5	6	7	8	9	10	SO ON
01												
02												
03												
04												
05												
06												
07												
08												
09												
10												
SO ON												

**Bidder may use the separate sheet to furnish the above details**

SIGNATURE OF THE TENDERER

DATE:

BHEL: PS-WR  
TS NO ; BHE/PW/PUR/KNT-SHED/646

62

SIGN OF BIDDER WITH SEAL

**APPENDIX-VI  
CONCURRENT COMMITMENTS**

SN	FULL POSTAL ADRESS OF CLIENT AND NAME OF OFFICER IN- CHARGE	DESCRIPTION OF THE WORK	VALUE OF THE CONTRACT	COMMENC- EMEN DATE	SCHEDU- LED COMPLE- TION	% COMPL- TD. AS ON DATE	ANTICIPA- TED COMPLN. DATE	REMARKS

DATE

SIGNATURE OF THE TENDERER

BHEL: PS-WR  
TS NO ; BHE/PW/PUR/KNT-SHED/646

63

SIGN OF BIDDER WITH SEAL

**APPENDIX–VII**

**DETAILS OF SIMILAR WORK DONE DURING THE LAST SEVEN YEARS**

<b>SL. NO.</b>	<b>FULL POSTAL ADDRESS OF CLIENT &amp; NAME OF OFFICER IN CHARGE</b>	<b>DESCRIP- TION OF WORK</b>	<b>VALUE OF CONTRACT</b>	<b>DATE OF AWARD OF WORK</b>	<b>DATE OF COMMENCE MENT OF WORK</b>	<b>ACTUAL COMPLETION TIME (MONTHS)</b>	<b>DATE OF ACTUAL COMPLETION OF WORK</b>	<b>REMARKS</b>
1								
2								
3								
4								
5								
6								

**BIDDERS SHALL ENCLOSE COPIES OF DETAILED WORK ORDER (GIVING BILL OF QUANTITIES AND SCOPE OF WORK) AND COMPLETION CERTIFICATE IN SUPPORT OF THIS STATEMENT.**



## APPENDIX-VIII

FOLLOWING DRAWINGS ARE ENCLOSED WITH THE TENDER.

SL.NO.	DRAWING/SKETCH No.	TITLE
1)	BHE/PW/CS - 01:	PLAN AT PLINTH LEVEL OF CLOSED SHED (60M X 15M)
2)	BHE/PW/CS - 02:	SECTIONAL DETAILS OF RCC FOOTING AND COLUMN FOR CLOSED STORAGE SHED
3)	BHE/PW/CS - 03:	PLAN OF FOOTINGS
4)	BHE/PW/CS - 04:	SECTION OF PLINTH BEAM
5)	BHE/PW/CS - 05:	SECTION OF STUB COLUMN FOR CLOSED STORAGE SHED
6)	BHE/PW/CS - 06:	SECTION OF LINTEL AND PROJECTION FOR CLOSED STORES ROLLING SHUTTER
7)	BHE/PW/CS - 07:	DETAILS OF TRUSS FOR CLOSED STORAGE SHED OF WIDTH 15M
8)	BHE/PW/CS - 08:	DETAILS OF BASE PLATE AT TRUSS LEVEL OF CLOSED STORAGE SHED
9)	BHE/PW/CS – 09	SECTION OF TIE BEAM

### NOTE:

The above drawings are tentative and strictly for tender purpose only. Changes in the drawing as per site requirement will be intimated during execution.

These drawings are the property of BHEL and should not be made use of by the contractor except for the purpose of implementing this contract. All these drawings should be returned to BHEL on completion of the work.

The interpretation of BHEL engineer regarding the details shown in the drawing shall be final, conclusive and binding.