

# **TENDER SPECIFICATION**

## **NO. BHE/PW/PUR/SKT-CHIMNEY/589**

**FOR**

**CONSTRUCTION OF TWIN FLUE RCC CHIMNEY OF HEIGHT 220M WITH  
BRICK LINERS USING SLIPFORM SHUTTERING EQUIPMENT ETC**

**AT**

**SIKKA THERMAL POWER STATION (EXPANSION PROJECT)  
GUJARAT STATE ELECTRICITY CORPORATION LIMITED  
SIKKA, DISTT. JAMNAGAR (GUJARAT)**

**Part-I (Technical Bid )**

**VOLUME- I**

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

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

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@ :- ATTACHED AT THE END

\* :- ATTACHED SEPERATELY

**NOTE: Bidders must Visit BHEL web site [www.bhel.com](http://www.bhel.com) for NIT, Qualifying Requirements (QR) for this work, 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  
SHREEMOHINI COMPLEX  
345, KINGS WAY - NAGPUR 440 001  
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TENDER SPECIFICATION NO.BHE/PW/PUR/SKT - CHIMNEY/589

**NAME OF THE WORK:** CONSTRUCTION OF TWIN FLUE RCC CHIMNEY OF HEIGHT 220M WITH BRICK LINERS USING SLIPFORM SHUTTERING EQUIPMENT ETC COMPLETE AT SIKKA THERMAL POWER STATION, GUJARAT STATE ELECTRICITY CORPORATION LIMITED, DISTT – JAMNAGAR (GUJARAT)

**EARNEST MONEY DEPOSIT: RS 2.00 LAKHS. Please see Section-15 of Special Conditions of Contract for more details.**

**DUE DATE & TIME FOR RECEIPT OF OFFERS: ON OR BEFORE----- 17:00 HOURS**

THESE TENDER DOCUMENTS CONTAIN THE FOLLOWING.

**PART – 1**

- A) VOLUME - I (TECHNICAL BID SPECS / GENERAL & SPECIAL CONDITIONS OF CONTRACT)
- B) VOLUME -II ( TECHNICAL BID SPECS / TECHNICAL SPECIFICATION )

**PART- 2**

- A) VOLUME – III (PRICE BID SPECIFICATION)

THESE TENDER DOCUMENTS CONTAINS: TECHNICAL BID VOLUME-I, VOLUME-II & VOLUME-III (PRICE BID) ARE ISSUED TO:

M/S.

(THESE TENDER SPECIFICATION DOCUMENTS ARE NOT TRANSFERABLE)

SR. MANAGER (PUR)

PLACE: NAGPUR  
DATE:

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

**PROCEDURE FOR SUBMISSION OF SEALED TENDERS**

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THE TENDERERS MUST SUBMIT THEIR TENDERS AS REQUIRED IN TWO PARTS IN SEPARATE SEALED COVERS PROMINENTLY SUPERSCRIBED 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 ELSEWHERE.

**A) PART-I: TECHNICAL BID**

PART-I: TECHNICAL BID IS ISSUED IN TWO VOLUMES AS UNDER:

- a) VOLUME-I : SPECIAL AND GENERAL CONDITIONS OF CONTRACT  
(ISSUED IN DUPLICATE)
- VOLUME-II : STANDARD TECHNICAL SPECIFICATIONS OF BHEL
- b) VOLUME-III : PRICE BID (PART-2)

THESE TWO SEPARATE COVERS-I AND 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 SR. MANAGER (PURCHASE) AT THE ABOVE-MENTIONED ADDRESS BEFORE THE DUE DATE AS INDICATED.

THE QUALIFIED TENDERER WILL BE INTIMATED SEPARATELY ABOUT THE STATUS OF THEIR OFFER.

TENDERER ARE REQUESTED TO MAKE SPECIFIC NOTE OF THE FOLLOWING CONDITIONS:

CONTRACTOR SHOULD HAVE ADEQUATE RESOURCES INCLUDING MAJOR T&PS AT HIS DISPOSAL FOR THIS JOB.

CONTRACTOR SHOULD HAVE SOUND FINANCIAL STABILITY.

TENDERER SHOULD MEET QUALITY REQUIREMENT REGARDING WORKMANSHIP, DEPLOYMENT OF PERSONNEL, FABRICATION & 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 TENDERER IF ANY, SHALL OBTAIN CLARIFICATION ON TENDER BEFORE SUBMITTING THEIR OFFER.

**OFFERS MUST BE SUBMITTED WITHOUT ANY DEVIATION. BIDDER MUST SIGN & STAMP ALL THE PAGES OF TENDER SPECIFICATION AND SUBMIT WITH THEIR OFFER.**

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 VOLUME-III (PRICE BID) ARE LIABLE TO BE REJECTED.

**TENDERER SHALL NOTE THAT THEIR OFFER WILL BE CONSIDERED SUBJECT TO THE APPROVAL OF BHEL'S CUSTOMER.**

## **PROJECT INFORMATION**

### **INTRODUCTION**

2X250 MW Sikka TPS – Extension units 3 & 4 is being set up by Gujarat State Electricity Corporation Limited (GSECL) at Sikka in the district of Jamnagar, Gujarat, India.

The Bidder shall acquaint himself by a visit to the site, if felt necessary, with the conditions prevailing at site before submission of the bid. The information given here in under is for general guidance and shall not be contractually binding on BHEL/ Owner. All relevant site data/information as may be necessary shall have to be obtained /collected by the Bidder.

### **APPROACH TO SITE**

#### **Location:**

In Sikka, Jamnagar district, Latitude 22° 26' N & Longitude 69° 49' E.

The site is surrounded by villages Mungai, Sikka, Gagva & Nanikkhavri of Jamnagar District of Gujarat state.

#### **Access by Road:**

It is connected to State Highway (SH-25) by a 5 Km long road through Sikka village.

#### **Access by Railways:**

Jamnagar – Okha broad-gauge section is passing at a distance of 12 Km form Sikka.

#### **Nearest Airport:**

Jamnagar

#### **Nearest Seaport:**

Okha & Navalakhinare located 140 Km & 130 Km respectively from the site.

#### **Other Salient Information:**

- |                         |  |
|-------------------------|--|
| 1. Owner                | M/s GSECL  |
| 2. Owner Consultant     | M/s TCE, Bangalore                               |
| 3. Project Title        | 2x250 MW Sikka TPS Extension Units # 3 & 4       |
| 4. Location             | 12 km from SIKKA, District - Jamnagar<br>Gujarat |
| 5. Nearest Railway Stn. | Sikka  |

6. Ambient Air Temperature

- a. Maximum 42 Deg.C
- b. Minimum 8 Deg.C

7. Relative Humidity

- a. Maximum 100%
- b. Minimum 21%

8. Rainfall

- a. Average annual 650 mm
- b. Maximum 900 mm
- c. Minimum 400 mm

9. Wind Data

- a. Basic wind speed at 10m height 50 m/sec
- b. Wind pressure As per IS: 875 Part III

10. Seismic Zone

Zone IV as per IS: 1893-2002

Check List			
(Vide Para 1.3 Of Section-I of 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 the last date for offer submission)	Validity _____ days	
6	Mobilization Time (Please refer Section-11 of SCC)	Mobilization Time _____	
7	Whether any conditions stipulated?	Yes (vide Document reference:	No
		<b>Bidder to note that tender with conditions unacceptable to BHEL shall be rejected.</b>	
8	Bidder has visited the project site and acquainted with the site conditions	Yes	No
9	Details of concurrent jobs are furnished ( <b>Appendix-V.</b> )	Yes	No
10	Headquarters organization is furnished	Yes	No
11	Proposed site organization is furnished	Yes	No
12	Names and particulars of directors/partners are furnished	Yes	No
13	Financial status of the firm ( <b>Annexure 'A' of GCC</b> ) is furnished	Yes	No
14	<b>Copy of Audited Profit &amp; Loss Account</b> for preceding three years duly authenticated on each copy by bidders Chartered Accountants	Yes	No
15	<b>Latest Certificate by Bidder's Banker for Overdraft &amp; BG Limits</b> is Furnished(Certificate shall not be older than six months from the Last Date for offer submission)	Yes	No



<b>Check List</b> (Vide Para 1.3 Of Section-I of General Conditions Of Contract)			
16	Latest copy of <b>IT Return</b> along with copy of <b>PAN Card</b> are Furnished	Yes	No
17	Month-wise <b>Manpower Deployment Plan</b> for this Work ( <b>Appendix-II</b> ) is furnished	Yes	No
19	<b>Analysis of Unit Rates</b> quoted ( <b>Appendix-III</b> ) is furnished	Yes	No
20	<b>Month-wise deployment plan for major T&amp;P (Appendix- VIII , IX &amp; X)</b> is furnished	Yes	No
21	Whether all the pages of the Tender Specification documents are read, understood and signed	Yes	No
22	<b>Power of Attorney</b> enclosed in favour of person making offer	Yes	No
23	Bidder has familiarized himself with all Relevant Local Laws & Local Conditions	Yes	No
24	Safety Requirement of this work in a Running plant Premises has been understood.	Yes	No
25	<b>List of Jobs completed</b> in last seven years is furnished ( <b>Appendix-VI</b> )	Yes	No
26	Whether <b>copies of detailed Work Orders (with BOQ)</b> and <b>Completion Certificates</b> in support of above furnished	Yes	No
27	Whether contractor has left any job unfinished? If so, give reasons.	Yes	No
28	Whether any client has terminated the contractor's work before completion? If so, furnish reasons for the same	Yes	No
29	<b>BIDDER MUST FURNISH HERE THE FOLLOWING DETAIL FOR  RELEASING EMD AND OTHER PAYMENTS. THESE DETILS MUST  BE DULY ENDORSED IE SIGN &amp; STAMPED 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. <b>MICR Code of the Bank Branch</b> -----	Yes	No

**NOTE : STRIKE OFF YES OR NO, AS APPLICABLE.**

**BIDDERS MUST SUBMIT ALL NECESSARY DOCUMENTS AS BEING ASKED IN ABOVE CHECK LIST.**

## **DECLARATION STATEMENT**

I, HEREBY CERTIFY THAT ALL THE INFORMATION AND DATA FURNISHED BY ME WITH REGARD TO THIS TENDER SPECIFICATION NO.BHE/PW/PUR/SKT - CHIMNEY/589 ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I HAVE RECIVED ALL THE DOCUMENTS VIZ. VOLUME-I & II (TECH. BID) & VOLUME-III (PRICE BID) COMPRISING THIS TENDER SPECIFICATION AND GONE THROUGH THE SPECIFICATION, CONDITIONS AND STIPULATIONS IN DETAIL AND AGREE TO COMPLY WITH THE REQUIREMENTS AND INTENT OF THE SPECIFICATION. I FURTHER CERTIFY THAT I AM DULY AUTHORISED REPRESENTATIVE OF THE UNDERMENTIONED TENDERER AND A VALID POWER OF ATTORNEY TO THIS EFFECT IS ALSO ENCLOSED.

TENDERER'S NAME AND ADDRESS

AUTHORISED REPRESENTATIVE'S SIGNATURE WITH  
NAME AND ADDRESS

**CERTIFICATE OF DECLARATION FOR CONFIRMING  
KNOWLEDGE ON SITE CONDITIONS**

WE, M/S -----  
HEREBY DECLARE AND CONFIRM THAT WE HAVE VISITED THE PROJECT SITE AT  
SIKKA THERMAL POWER STATION, 2X250MW EXPANSION PROJECT, UNIT 3 & 4,  
GUJARAT STATE ELECTRICITY CORPORATION LIMITED, DISTT – JAMNAGAR,  
GUJARAT AS REFERRED IN BHEL'S TENDER SPECIFICATION NO.  
BHE/PW/PUR/SKT-CHIMNEY/589 AND ACQUIRE FULL KNOWLEDGE AND  
INFORMATION ABOUT THE SITE CONDITIONS & NATURE OF JOB. WE FURTHER  
CONFIRM THAT THE ABOVE INFORMATION IS TRUE AND CORRECT AND WE SHALL  
NOT BE ELIGIBLE FOR ANY-ADDITIONAL PAYMENT OF ANY NATURE DUE TO LACK  
OF KNOWLEDGE OR NON – FAMILIARIZATION OF SITE CONDITIONS.

BIDDERS'NAME AND ADDRESS

SIGNATURE & OFFICIAL SEAL OF  
AUTHORISED SIGNATORY

PLACE:

DATE:

## CERTIFICATE OF NO DEVIATION

**REFERENCE: TENDER SPECIFICATION No. BHE/PW/PUR/SKT-CHIMNEY/589**

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.

SIGNATUTRE OF THE TENDERER AND OFFICIAL SEAL

**DATE:**

**SIGNATURE OF TENDERER**

### SECTION-3

#### OFFER OF CONTRACTOR

TO,  
**SENIOR 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/SKT-CHIMNEY/589 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 A SUM OF RS.2,00,000/- (RUPEES TWO LACS ONLY) TOWARDS EARNEST MONEY DEPOSIT (DETAILS IN CHECKLIST) WHICH SHALL BE REFUNDED SHOULD OUR OFFER NOT BE ACCEPTED. SHOULD OUR OFFER BE ACCEPTED, I/WE FURTHER AGREE TO DEPOSIT SUCH ADDITIONAL SUM WHICH ALONGWITH THE SUM OF EMD SHALL MAKE UP SECURITY DEPOSIT FOR THE WORK AS PROVIDED FOR IN THE TENDER SPECIFICATION WITHIN THE STIPULATED TIME AS MAY BE INDICATED BY BHEL, POWER SECTOR-WESTERN REGION, NAGPUR.

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:  
DATE:

SIGNATURE OF TENDERER:  
ADDRESS:

WITNESSES WITH THEIR ADDRESS

SIGNATURE	NAME	ADDRESS
1.		

## SECTION - 4

### SPECIAL CONDITIONS

#### 4.0 (A) SCOPE OF WORK:

THE SCOPE OF WORK TO BE PERFORMED UNDER THIS PACKAGE CONSISTS OF CONSTRUCTION OF ONE TWIN FLUE BRICK LINED RCC CHIMNEY OF 220M HEIGHT ON ITEM RATE BASIS LIKE RCC RAFT, SHELL, LINER SUPPORTING PLATFORMS, INSULATION ASH HOPPERS, STR. STEEL STAIR CASE, COMPLETE INTERIOR ELECTRICAL WORKS & AIR AVIATION OBSTRUCTION LIGHTING SYSTEMS FOR 2X250MW SIKKA THERMAL POWER STATION, EXPANSION PROJECT, UNIT 3 & 4, GUJARAT STATE ELECTRICITY CORPORATION LIMITED AT DISTT – JAMNAGAR, GUJARAT.

**REFER TECHNICAL SPECIFICATION NO. PE-TS-281-620-C001, VOLUME – II FOR DETAILED SCOPE OF WORK.**

#### 4.0 ( B ) SPECIAL CONDITION OF CONTRACT

- 1) DETAILS OF THE ITEMS IN “ SCHEDULE OF QUANTITIES (BOQ) “ SHALL BE READ IN CONJUNCTION WITH THE CORRESPONDING SPECIFICATIONS, DRAWINGS AND OTHER VARIOUS REQUIREMENTS STIPULATED IN VARIOUS SECTIONS OF BID DOCUMENTS. THE RATES QUOTED SHALL BE INCLUSIVE OF ALL THE REQUIREMENTS.
- 2) THE WORK SHALL BE CARRIED OUT AS PER CONSTRUCTION DRAWINGS, SPECIFICATIONS, BOQ AND INSTRUCTION OF THE SITE ENGINEERS. DRAWINGS ENCLOSED WITH THESE DOCUMENTS ARE ONLY INDICATIVE GIVING SOME IDEA OF THE TYPE OF WORK INVOLVED. THE LAYOUT, SIZES AND DETAILS OF THE BUILDING, STRUCTURES AND FOUNDATIONS SHOWN IN TENDER DRAWINGS MAY VARY TO A LARGE EXTENT DURING ACTUAL CONSTRUCTION. FINAL DRAWINGS WILL BE ISSUED PROGRESSIVELY DURING THE EXECUTION OF THE WORK.
- 3) ITEMS OF WORK PROVIDED IN THIS BOQ BUT NOT COVERED IN THE SPECIFICATIONS SHALL BE EXECUTED STRICTLY AS PER INSTRUCTIONS OF THE ENGINEER.
- 4) UNLESS SPECIFICALLY MENTIONED OTHERWISE IN THE CONTRACT, THE BIDDER SHALL QUOTE HIS RATES FOR THE FINISHED ITEMS AND SHALL PROVIDE FOR THE COMPLETE COST TOWARDS FUEL, TOOLS, TACKLE, EQUIPMENT, CONSTRUCTIONAL PLANT , TEMPORARY WORKS, LABOUR MATERIALS, LEVIES , TAXES , TRANSPORT, LAYOUT, REPAIRS, RECTIFICATION, MAINTENANCE TILL HANDING OVER, SUPERVISION, SHOPS, ESTABLISHMENTS, SERVICES , TEMPORARY ROADS, REVENUE EXPENSES,
- 5) CONTINGENCIES, OVERHEADS, PROFITS AND ALL INCIDENTAL ITEMS NOT SPECIFICALLY MENTIONED BUT REASONABLY IMPLIED AND NECESSARY TO COMPLETE THE WORKS ACCORDING TO THE CONTRACT.
- 6) THE RATE SHALL ALSO BE INCLUSIVE OF CARRYING OUT TOPOGRAPHY SURVEY OF SITE TO ESTABLISH LEVELS AND COORDINATES AT SUITABLE INTERVALS, FORM EXISTING GRID LEVELS AND COORDINATES FURNISHED BY THE OWNER, ESTABLISH BENCH MARKS, SETTING OUT THE LOCATION AND LEVELS OF THE PROPOSED STRUCTURES, CONSTRUCTIONS AND MAKING REFERENCES , PILLARS AND OTHER IDENTIFICATION MARKS ETC. NO SEPARATE PAYMENT WILL BE MADE TOWARDS THE SAME.
- 7) THE QUANTITIES OF THE VARIOUS ITEMS MENTIONED IN THE BOQ ARE APPROXIMATE AND MAY VARY UP TO ANY EXTENT OR BE DELETED ALTOGETHER. THE QUOTED RATES OF EACH ITEM SHALL REMAIN FIRM AS LONG AS THE VARIATION IN THE TOTAL VALUE OF THE WORKS REMAIN **WITHIN +/- 30% (THIRTY PERCENT)** OF THE BID PRICE OF THE WORK. THE CONTRACTOR, IN HIS OWN INTEREST, SHOULD GET AN INDICATION OF THE PROBABLE EXTENT OF THE WORK TO BE EXECUTED UNDER ANY PARTICULAR ITEM IN THIS SCHEDULE, BEFORE, UNDER TAKING ANY PRELIMINARY WORK OR PURCHASING BOUGHT OUT COMPONENT RELATED TO THE WORK. FOR DETAIL PL. REFER CL. NO. 11.8 IN THIS REGARD
- 8) RATES SHALL BE QUOTED BOTH IN FIGURES IN CLEAR LEGIBLE WRITING. NO OVER WRITING IS ALLOWED. ALL SCORING AND CANCELLATION SHOULD BE COUNTER SIGNED BY THE BIDDER. IN CASE OF ILLEGIBILITY, THE INTERPRETATION OF THE ENGINEER SHALL BE FINAL. ALL ENTRIES SHALL BE IN ENGLISH LANGUAGE.
- 9) ENGINEERS DECISION SHALL BE FINAL AND BINDING ON THE CONTRACTORS REGARDING CLARIFICATION OF ITEMS IN THIS SCHEDULE WITH RESPECT TO THE OTHER SECTION OF THE CONTRACT.
- 10) IN CASE OF ANY DISCREPANCY BETWEEN BOQ, RELEVANT DRAWING AND/OR SPECIFICATIONS CLARIFICATION SHALL BE SOUGHT AT TENDER STAGE ITSELF. OTHERWISE IT SHALL BE ASSUMED THAT THE BIDDER HAS QUOTED FOR THE MORE STRINGENT REQUIREMENT.
- 11) **CONTRACTOR SHALL MOBILIZE SUFFICIENT NUMBER OF EXCAVATION MACHINE/POCLAIN/ JCB, DUMPERS, CONCRETE MIXER MACHINE, VIBRATORS, SHUTTERING & SCAFFOLDING MATERIALS FOR RCC FRAMEWORK OF BUILDINGS, WINCHES CONCRETE PUMPS (IF REQUIRED) CONSIDERING HIGHT OF THE BUILDINGS ALONGWITH QUALITY CONTROL LAB. EQUIPMENTS AT SITE FOR SUCCESSFUL COMPLETION OF JOB IN TIME.**

#### **4.0.1 REINFORCED CONCRETE RAFT FOUNDATION**

4.0.2 Earthwork in excavation and backfilling, in foundation.

4.0.3 Ready mix Reinforced concrete work/RCC work produced in batching plant/mini batching plant and conveyed to site through transit mixer/concrete pumps etc both above and below ground level including but not limited to foundation ground floor slab, shell, hopper and platforms.

4.0.4 Sand & ballast filling under ground slab.

4.0.5 Brick lining and insulation work in the chimney.

4.0.6 Miscellaneous metal works (Structural works/SS works as per relevant BOQ) for ladders, doors, equipment hatch, liner hatch, personal access, frames at various opening cap and miscellaneous fixtures.

4.0.7 Painting of concrete below & above ground and metal surfaces as per specification including all materials, scaffoldings & tools and plants.

4.0.8 Galvanizing of metal components (Structural components) wherever needed.

4.0.9 Electrical work in lightening protection and lightning and other related works for complete construction of twin flue RCC chimney.

4.0.10 Maintenance of chimney for **a specified period**.

4.0.11 CI CAP, MS ladders, hood access hatch, louvers, bird screens, hood drain basin covers, handrail.

4.0.12 External & Internal works

4.0.13 Earthwork in excavation and backfilling, in foundation

Scope: This specification covers excavation in all types of soil, soft and decomposed rock not required blasting and rocks requiring blasting, shoring, dewatering, filling around foundations and to grade, compaction of fills and approaches, protective fencing, lighting etc. relevant to structures and locations covered under the scope of this contract.

The work to be provided for by the Contractor, unless specified otherwise, shall include but not be limited to the following:

- (a) Furnish all labour, supervision services including as required under statutory labour regulations, materials, scaffolding, equipment, tools and plants, transportation, etc. required for the work.
- (b) Prepare and submit working drawings showing the approaches, slopes, berms, shoring, sumps for dewatering, including drains and outfall for drainage, space for temporary stacking of soils, disposal area, fencing etc. and all other details as may be required by the Engineer.
- (c) To carry out sampling and testing and submit to the Engineer, results of soil compaction tests if required by the Engineer to assess the degree of compaction.
- (d) Construction, maintenance and removal after completion of Magazine of proper capacity as well as design for strong or explosive required for blasting work to be carried out under the scope of this tender.

#### 4.0.14 Ready mix Cement Concrete /Cement Concrete (Plain & Reinforced):

Scope: This specification covers all the requirements, described hereinafter for general use of Plain and Ready mix Cement Concrete/Cement Concrete work in Structures and locations, cast-in-situ or precast, RCC bored piles and shall include all incidental items of work not shown or specified but reasonably implied or necessary for the completion of the work. Special requirements for structures such as reinforced concrete chimney etc. have been covered under the respective specifications. Those specifications shall be used in conjunction with this specification.

IS: 456-2000 shall form a part of this specification and shall be complied with unless permitted otherwise. For any particular aspect not covered by this Code, appropriate IS-Code, specifications and/or replacement by any International code of practice as may be specified by the Engineer shall be followed. **All codes and standards shall conform to its latest revisions.**

The work to be provided for by the Contractor, unless otherwise specified shall include but not be limited to the following.

- (a) Furnish all labour, supervision, services including facilities as may be required under statutory labour regulations, materials, forms templates, supports, scaffolds, approaches, aids, construction equipment tools and plants, transportations, etc. required for the work.
- (b) Prepare detailed drawings and Bar bending Schedules for reinforcement bars showing the positions and details of spacers, supports, chairs, hangers etc.
- (c) Prepare working drawings of formworks, scaffolds, supports etc.
- (d) Prepare shop drawings for various inserts, anchors, anchor bolts, pipe sleeves, embedment, hangers, openings, frames etc.
- (e) Prepare detailed drawings of supports, templates, hangers, etc. required for installation of various embedment like inserts, anchor bolts, pipe sleeves, , frames, joint seals frames, openings etc.

As decided by the Engineer some or all of the drawings & schedules prepared under item (b) to (e) will have to be submitted for approval.

- (f) Submit for approval detailed schemes of all operations required for executing the work e.g. material handling, Concrete mixing, Placement of concrete, Compaction, curing services, approaches etc.
- (g) Design and submit for approval concrete mix design required to be adopted on the job.
- (h) Furnish samples and submit for approval results of test of various properties of the following:
  - (i) The various ingredients of concrete
  - (ii) Concrete
  - (iii) Embedment
  - (iv) Joint seals
- (i) Provide all incidental item not shown or specified in particular but reasonably implied or necessary for successful completion of the work in accordance with the drawings and specifications.



- (j) For supply of certain materials normally manufactured by the specialist firms, the Contractor may have to produce, if directed by the Engineer, a guarantee in approved proforma for satisfactory performance for a reasonable period as may be specified, binding the manufacturer and the Contractor, jointly and severally.

**Any thing not covered in this scope of work, shall be referred to detailed technical specification and shall be superseded by technical specification volume-II.**

- 4.1.0 The works to be performed under this contract consist of providing all labourer, supervision, material, scaffolding, construction equipments, tools and plants, temporary works, supplies including POL, transportation and all incidental items not shown or specified but reasonably implied or necessary for the proper completion of work in all respects. Testing of all materials, concrete, earthwork other allied works, preparation of bar bending schedules on the basis of construction drawings, preparation of fabrication drawings etc. are included on the rates of items of work.
- 4.1.1 Fabrication and erection of structural steel work involving rolled section, sections fabricated out of plates chequered/electroforged grating hand rails, primer and final painting for all steel structural works including supply of HSFG Bolts if any, low hydrogen quality electrodes for welding, non destructive testing etc. Complete as per Quality Plan/Customer requirements including preparation of detailed fabrication drawing.
- 4.1.2 The area of work shall be cleared of all vegetation, rubbish and other objectionable matter and materials removed, shall be burnt or otherwise disposed of as directed by the Engineer-in-Charge.
- No separate payment for these operations shall be made. The cost of all these operations shall be deemed to have been included in the unit rates rendered for the different items under bill of quantities.
- 4.1.3 All the work areas shall be adequately flood lighted to the satisfaction of the Engineer-in-Charge when the work is in progress during the night shifts.
- 4.1.4 The unit rates shall include all material equipment, fixtures, labour construction plant, temporary works and everything whether of permanent or temporary nature necessary for the completion of job in all respects.
- 4.1.5 The unit rates quoted for various items of B.O.Q shall include all the stipulations mentioned in Section C and technical specifications under Section D and nothing extra over B.O.Q rates shall be payable.

4.2.0 Design drawings showing enough details for the construction as per the specification shall be furnished to the contractor in a phased manner as far as possible.

#### 4.2.1

MATERIALS TO USED FOR THIS PROJECT & WITH RESPECT TO THIS CONTRACT, PLEASE REFER, SECTION – C “ SPECIFIC TECHNICAL REQUIREMENTS. FOR CIVIL WORKS AND ALSO THE TECHNICAL SPECIFICATION UNDER SECTION – D., VOLUME –II.

**BHEL WILL SUPPLY FOLLOWING MATERIAL (A & B) FREE OF COST:**

**(A) TMT Rebars:-** TMT rebars/mild reinforcement steel as mentioned in relevant BOQ shall be provided by BHEL at free of cost. Successful bidder has to draw TMT re-bars/mild reinforcement steel from BHEL stores/Storage yard including transportation and return of excess steel/scrap to BHEL stores/yard etc. including all T&P like trailer/truck and labour etc. complete.

**(B) Structural steel:** All structural steel like chequered plates/plates, rolled sections as mentioned in relevant BOQs shall be provided by BHEL at free of cost. Successful bidder has to draw structural steel from BHEL stores/Storage yard including transportation and return of excess steel/scrap to BHEL stores/yard etc. including all T&P like trailer/truck and labour etc. complete. Bidders have to quote their rate excluding cost of strl steel for referred items.

**BIDDER’S SCOPE OF SUPPLY:-**

**(A) CEMENT, ALL ELECTRICAL ITMES, EARTHING MATERIALS, MISC. STEEL, NUTS & BOLTS ETC COMPLETE FOR SUCCESSFUL COMPLETION OF CHIMNEY. ( i.e. All materials except TMT & Structural steel as mentioned in A & B above is in contractors scope )**

#### 4.2.2

CUSTOMER SHALL PROVIDE LAND OUTSIDE PLANT PREMISES FOR REGULAR DISPOSAL AND ASSOCIATED ACTIVITIES IN RESPECT OF EXCAVATED SURPLUS EARTH, DISMANTLED MATERIALS GENERATED FROM THIS WORK. REFER SECTION - 5 FOR FURTHER DETAILS IN THIS REGARD. RATES QUOTED SHALL BE INCLUSIVE OF ABOVE CONDITION.

#### 4.2.3

CNS SOIL FOR BACKFILLING SHOULD BE AS PER SPECIFICATIONS AND FROM APPROVED SOURCE. CONTRACTOR SHALL ARRANGE HIS OWN BORROWPITS FOR CNS SOIL ETC., REQUIRED FOR BACKFILLING. RATES QUOTED SHOULD BE INCLUSIVE OF THIS FACTOR. ONLY BORROW PIT MEASUREMENT OR THE EXCAVATED PIT QUANTITY WILL BE CONSIDERED FOR MEASUREMENT AND NO TRUCK MEASUREMENT SHALL ENTERTAINED.

#### 4.3.0

##### **USE OF READY MIX/ PREMIX CONCRETE:**

**CONTRACTORS ARE SUPPOSED TO USE READY MIX/PREMIX CONCRETE, PRODUCED FROM THEIR OWN BATCHING PLANT FOR EACH AND EVERY GRADE OF CONCRETE WITH MINIMUM CEMENT CONTENT AS EXPLAINED ELSEWHERE WITH THE APPROVAL OF BHEL. HOWEVER CONTRACTOR SHALL BE PERMITTED TO GO FOR THE USE OF CONVENTIONAL METHOD OF PRODUCING CONCRETE FOR SMALL QTY OF PCC.**

THE CONTRACTOR SHALL INSTALL HIS MINI BATCHING PLANT, BATCHING PLANT, ARRANGE ALL T&P LIKE CONCRETE PUMP, TRANSIT MIXERS ETC., AT THE LOCATION PROVIDED BY CUSTOMER/BHEL AND THE LAND REQUIRED FOR THIS SHALL BE PROVIDED BY CUSTOMER. RATE QUOTED SHALL BE INCLUSIVE OF THIS FACTOR.

#### 4.3.1

IT WILL BE THE RESPONSIBILITY OF CONTRACTOR TO ARRANGE FOR UN-INTERRUPTED MOVEMENT OF THE CONCRETE TRANSIT MIXTURE THROUGH THE PASSAGE GATE DURING THE CONCRETING THROUGH BATCHING PLANT TO AVOID ANY DETERIORATION OF QUALITY OF CONCRETE. THE CONTRACTOR SHALL OBTAIN ADVANCE PERMIT/ GATE PASSES, PERMISSION FROM THE CUSTOMER IN THIS REGARD. ANY LOSS OF MATERIAL OR CONCRETE MIX ETC., DUE TO ANY PROBLEM DURING TRANSIT OF SUCH PRE-MIX CONCRETE SHALL ENTIRELY BE ON CONTRACTOR'S ACCOUNT AND BHEL SHALL NOT BE RESPONSIBLE FOR SUCH LOSS IN ANY MANNER.

#### 4.3.2

ALL BOUGHT OUT ITEMS SHALL BE PURCHASED FROM ONLY THE VENDORS APPROVED BY BHEL/CONSULTANT/BSECL. LIST OF SUCH APPROVED VENDORS IS APPENDED WITH THESE SPECIFICATIONS. THE LIST MAY UNDERGO REVISIONS FROM TIME TO TIME. THEREFORE, THE CONTRACTOR SHALL ASCERTAIN CURRENCY OF APPROVAL IN RESPECT OF ANY VENDOR FROM WHOM HE IS LIKELY TO SOURCE ANY ITEM.

#### **4.4.0 STRUCTURAL WORKS**

##### 4.4.1 THE WORK INVOLVES:

SUPPLY OF STRUCTURAL MATERIAL FROM APPROVED MANUFACTURERS AS FURNISHED BELOW:- BHEL SHALL PROCURE STR. STEEL FROM FOLLOWING APPROVED MANUFACTURERS AND ISSUE TO SUCCESSFUL BIDDERS AT FREE OF COST:

STEEL: (BOTH REINFORCEMENT & STRUCTURAL STEEL)

- (i) M/S SAIL
- (II) M/S TISC
- (III) M/S JINDAL
- (IV) M/S RINL
- (V) SAIL'S CONVERGENT AGENT

FABRICATION AND ERECTION OF STRUCTURAL STEEL INCLUDING ALL INTERFACING WORK AND MISCELLANEOUS WORK. THE NATURE OF WORK SHALL INCLUDE STAIRS, STEPS, LADDERS, HANDRAILS, FLOOR GRATINGS, CHEQUERED PLATE WORK, PLATFORMS AND ALL OTHER STRUCTURES REQUIRED FOR SUCCESSFUL COMPLETION OF THE CHIMNEY.

THE MATERIAL SHALL BE PURCHASED DIRECTLY FROM MANUFACTURES OR ANY AUTHORISED DEALER/STOCKIST OF THE ABOVE MANUFACTURERS AND AVAILABLE BRAND FROM ABOVE CAN BE USED ON PRIOR APPROVAL FROM BHEL CONTRACTOR AS INDICATED ELSEWHERE IN THE TENDER SPECIFICATION SHALL ARRANGE MANUFACTURERS' TEST CERTIFICATE AND OTHER TEST REPORT FOR MATERIALS PROCURED BY THEM.

4.4. 2 SUPPLY, FABRICATION AND ERECTION OF MS PIPES, HANDRAILS AS PER DRAWING AND SPECIFICATIONS. BIDDER HAS TO PROCURE PIPES FOR HANDRAILS.

#### 4.4.3

SUPPLY OF HIGH TENSILE BOLTS, MILD STEEL BOLTS, NUTS, PLAIN/TAPER AND SPRING WASHERS, ALL ELECTRODES REQUIRED FOR SHOP AND FIELDWORK.

#### 4.4.4

SHOP AND FINAL PAINTING AS PER TECHNICAL SPECIFICATION AFTER PROPERLY CLEANING THE STEEL SURFACES. ALL STEEL STRUCTURALS HAVE TO BE CLEANED **WITH SAND BLASTING** PRIOR TO APPLICATION OF PRIMER AND PAINT. COMPRESSOR, HOSE PIPE, SAND AND OTHER MISC. ITEMS ARE IN THE SCOPE OF SUCCESSFUL BIDDERS. PAINTING BRUSH, PAINTS, PRIMER AND ALL OTHER CONSUMABLES, AND ALL OTHER ARRANGEMENTS INCLUDING THOSE REQUIRED FOR SURFACE PREPARATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

#### 4.4.5

GROUTING UNDER STANCHION BASES AS PER SPECIFICATIONS. BASE GROUTING WILL HAVE TO BE DONE ONLY FOR STRUCTURAL WORK CARRIED OUT BY THE CONTRACTOR.

### 4.5.0 WELDING

WELDING SHALL BE DONE BY THE QUALIFIED WELDERS. WELDER'S TEST TO BE CONDUCTED AT SITE IN PRESENCE OF BHEL/BHEL'S CUSTOMER. PROCESS QUALIFICATION IF REQUIRED SHALL BE ARRANGED BY CONTRACTOR. ALL SAMPLES FOR THE WELDER'S QUALIFICATION TEST SHALL BE ARRANGED BY CONTRACTOR. QUOTED RATE SHALL BE INCLUSIVE OF ALL THE EXPENDITURE TOWARDS TESTING OF WELDERS FOR DESTRUCTIVE AND NON-DESTRUCTIVE TEST, TESTING AND APPROVAL OF WELDERS ETC., COMPLETE. ALL WELDED JOINTS SHALL BE SUBJECT TO THE ACCEPTANCE OF BHEL ENGINEER. ALL THE WELDED JOINTS SHALL BE CLEANED OF SLAG ETC., AND PAINTED WITH PRIMER TO PREVENT CORROSION AT NO EXTRA COST TOWARDS THIS. **FOR THIS, CONTRACTOR SHALL SUPPLY PRIMER, WHICH SHALL BE AS PER THE BHEL/BSEC SPECIFICATION. WELDING RODS/ELECTRODES SHALL BE AS PER BHEL SPEC. PRIOR APPROVAL SHALL BE SOUGHT FROM BHEL FOR PURCHASE OF SUITABLE ELECTRODES.**

#### 4.6.0

CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENT INSIDE/OUTSIDE THE PLANT PREMISES FOR STORAGE OF THE CEMENT AND OTHER MATERIALS INCLUDING THE BUILDING MATERIALS. SPACE FOR DEVELOPMENT OF SUCH INFRASTRUCTURE FACILITIES SHALL BE PROVIDED BY CUSTOMER/MPSEM AT FREE OF COST. ALSO FOR FABRICATION OF STEEL STRUCTURALS AND REINFORCEMENTS THE NECESSARY AREA OUTSIDE/INSIDE THE PLANT PREMISES WITH ALL NECESSARY INFRASTRUCTURES HAS TO BE ARRANGED BY THE CONTRACTOR. ALL COSTS, DUTIES, LAVIES, TAXES AND INCIDENTAL, CHARGES ETC., HAVE TO BE BORN BY THE CONTRACTOR. REQUISITE FENCING AND OTHER SUITABLE SECURITY ARRANGEMENTS ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY. TRANSPORT OF THE WORKED AND FABRICATED ITEMS, ARRANGING GATEPASSES AND OTHER PERMITS ETC., IS ALSO PART OF CONTRACTOR'S RESPONSIBILITY. THE RATES QUOTED SHALL BE INCLUSIVE OF ALL THE ABOVE AND RELATED FACTORS. NO CLAIM WHATSOEVER WILL BE ENTERTAINED BY BHEL IN THIS REGARD. REFER SECTION-5 IN THIS REGARD.

### 4.7 GENERAL

#### 4.7.1

THE DETAILED SCOPE OF WORK COVERED IN THESE SPECIFICATIONS IS NOT A COMPREHENSIVE LIST OF THE ITEMS OF WORK INVOLVED. THE DETAILED SCOPE OF WORK MAY VARY CONSIDERABLY DEPENDING ON THE ACTUAL CONSTRUCTION REQUIREMENTS AND AS PER DRAWINGS RELEASED.

#### 4.7.2

THE SCOPE OF WORK WILL ALSO INCLUDE SUCH OTHER RELATED WORKS, IN AND OUTSIDE OF BATTERY LIMIT, ALTHOUGH THEY MAY NOT BE SPECIFICALLY MENTIONED IN THESE PARAGRAPHS AND ALL SUCH INCIDENTAL ITEMS NOT SPECIFIED, BUT REASONABLY IMPLIED AND NECESSARY FOR COMPLETION OF THE JOB AS A WHOLE, AS DESIRED AND AS DIRECTED BY THE ENGINEER.

#### 4.7.3

THE DRAWINGS ENCLOSED WITH THIS TENDER ARE INTENDED TO GIVE THE TENDERER A GENERAL IDEA OF THE TYPE AND EXTENT OF WORK INVOLVED. THE DRAWINGS ARE AS SUCH ONLY INDICATIVE AND NOT TO BE CONSTRUED AS THE EXACT CONSTRUCTION DRAWINGS. THE

WORK SHALL BE EXECUTED AS PER THE "AFC" DRAWING (**APPROVED FOR CONSTRUCTION**) SUPPLIED BY BHEL FROM TIME TO TIME (2 SETS) IN PHASED MANNER.

**4.7.4**

ALL EQUIPMENTS SHALL BE HANDLED VERY CAREFULLY TO PREVENT ANY DAMAGE OR LOSS. THE MATERIAL FROM THE CONTRACTOR'S STORAGE YARD SHALL BE MOVED TO THE ACTUAL SITE OF ERECTION/ LOCATION AT THE APPROPRIATE TIME AS PER THE DIRECTION OF BHEL ENGINEER SO AS TO AVOID DAMAGE/LOSS OF SUCH MATERIAL, CONGESTION AT SITE.

**4.7.5**

MATERIALS SHALL BE STACKED NEATLY, PRESERVED AND STORED IN THE CONTRACTOR'S SHED AND WORK AREAS IN AN ORDERLY MANNER.

**4.7.6**

SHOULD THE CONTRACTOR OR HIS WORKMEN OR SERVANTS BREAK, DEFACE, INJURE OR DESTROY ANY PART OF A BUILDING, ROAD, KERBS, FENCE, ENCLOSURES, WATER PIPES, CABLES, DRAINS, ELECTRIC OR TELEPHONE POSTS OR WIRES, TREES OR ANY OTHER PROPERTY, OR TO ANY PART OF ERECTED EQUIPMENTS AND STORED COMPONENTS ETC., THE CONTRACTOR SHALL MAKE THE SAME GOOD AT HIS OWN EXPENSE OR IN DEFAULT, THE BHEL SITE ENGINEER MAY CAUSE THE SAME TO BE MADE GOOD BY OTHER AGENCY OR BY OTHER MEANS AND DEDUCT THE EXPENSE WITH BHEL OVERHEAD (OF WHICH THE SITE ENGINEER'S DECISION IS FINAL) FROM ANY SUMS THAT MAY BE THEN OR AT ANY TIME THEREAFTER BECOME DUE TO THE CONTRACTOR OR FROM HIS SECURITY DEPOSIT OR ANY OTHER MONEY DUE.

**4.7.7**

THE WORK HAS TO BE EXECUTED WITH THE CONSTRAINTS LIKE RAIN, INSUFFICIENT SPACE, IMPROPER APPROACH ROADS ETC., AND IN CONJUNCTION WITH NUMEROUS OTHER OPERATIONS AT SITE. THE CONTRACTOR AND HIS PERSONNEL SHALL COOPERATE WITH OTHER PERSONNEL/CONTRACTOR, COORDINATING HIS WORK WITH OTHERS AND PROCEED IN A MANNER THAT SHALL NOT DELAY OR HINDER THE PROGRESS OF WORK AS A WHOLE.

**4.7.8**

THE CONTRACTOR SHOULD SATISFY BHEL THAT AN ACCIDENT RISK INSURANCE POLICY IN RESPECT OF HIS EMPLOYEES AS PER WORKMEN COMPENSATION ACT, IS TAKEN BEFORE STARTING OF THE WORK AND ALSO SATISFY BHEL THAT THE POLICY IS KEPT IN FORCE TILL THE CONTRACT IS COMPLETED.

**4.7.9**

RECOVERIES WILL BE MADE FROM CONTRACTOR'S BILLS FOR ANY LIABILITY ACCRUED TO BHEL/MPSEB FOR THE ACCIDENTS AND REFUND OF THE SAME SHALL BE CONSIDERED LATER, AFTER THE CLAIM IS FULLY SETTLED BY INSURANCE AUTHORITIES.

**4.8.0**

THE CONTRACTOR SHALL SUBMIT SURVEY REPORT/PERFORMANCE REPORT OF THE TOOLS AND PLANTS DEPLOYED BY HIM AND BEING UTILISED ON THE WORK UNDER THE SCOPE. THESE SURVEY REPORTS/PERFORMANCE REPORTS ARE TO BE OBTAINED BY CONTRACTOR FROM THE CUSTOMER OF BHEL/INSURANCE AUTHORITIES AND SUBMITTED TO BHEL AT NO EXTRA COST.

**4.8.1**

IN CASE, ANY ADDITIONAL EXPENDITURE IS/TO BE INCURRED IN WORK DURING EXECUTION ARISING OUT OF THE FAULTY EXECUTION OF SUCH WORK BY THE CONTRACTOR, THE SAME SHALL BE BORNE BY THE CONTRACTOR.

#### **4.9.0 ALSO INCLUDED IN THE SCOPE**

UNLESS OTHERWISE SPECIFIED, THE WORK TO BE PROVIDED FOR BY THE CONTRACTOR FOR THE ITEMS AS MENTIONED IN THE "SCHEDULE OF ITEMS"/ RATE SCHEDULE SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

##### **4.9.1**

FURNISHING ALL LABOUR, MATERIALS, SUPERVISORS, CONSTRUCTION PLANTS, EQUIPMENT, SUPPLIES, TRANSPORT TO AND FROM THE SITE, FUEL, ELECTRICITY, COMPRESSED AIR, WATER, TRANSIT AND STORAGE INSURANCE AND ALL OTHER INCIDENTAL ITEMS AND TEMPORARY WORKS NOT SHOWN OR SPECIFIED BUT REASONABLY IMPLIED OR NECESSARY FOR THE PROPER COMPLETION, MAINTENANCE AND HANDING OVER OF THE WORK, EXCEPT IN ACCORDANCE WITH THE STIPULATIONS LAID DOWN IN THE CONTRACT DOCUMENTS AND ADDITIONAL STIPULATIONS AS MAY BE PROVIDED BY THE ENGINEER DURING THE COURSE OF WORKS.

**4.9.2** FURNISHING MANUFACTURER'S TEST CERTIFICATES AND LABORATORY REPORT IN RESPECT OF THE PRODUCTS USED OR INTENDED TO BE USED, IF CALLED FOR IN THE SPECIFICATIONS OR IF SO DESIRED BY THE ENGINEER. APPROVAL OF THESE MANUFACTURER'S TEST CERTIFICATES SHALL BE OBTAINED MANDATORILY FROM BHEL PRIOR TO USE OF RESPECTIVE MATERIALS WHICH OTHERWISE MAY RENDER THESE MATERIALS LIABLE FOR REJECTION.

**4.9.3** FURNISHING SAMPLES OF ALL MATERIALS REQUIRED BY THE ENGINEER FOR TESTING/INSPECTION AND APPROVAL FOR USE IN THE WORKS. THE SAMPLES MAY BE RETAINED BY THE ENGINEER FOR FINAL INCORPORATION IN THE WORKS.

**4.9.4** GIVING ALL NOTICES, PAYING ALL FEES, TAXES ETC. IN ACCORDANCE WITH THE GENERAL & SPECIAL CONDITIONS OF CONTRACT, THOSE ARE REQUIRED FOR ALL WORK .

**4.9.5** ARRANGING MANUFACTURER'S SUPERVISION FOR ITEMS OF WORK DONE AS PER MANUFACTURERS' SPECIFICATION WHEN SO SPECIFIED.

**4.9.6** CARRYING OUT TOPOGRAPHIC SURVEY OF THE ENTIRE PLOT AND ESTABLISH LEVELS AND CO-ORDINATES AT SUITABLE INTERVALS FROM EXISTING GRID LEVELS AND CO-ORDINATES FURNISHED BY THE OWNER ESTABLISH BENCH MARKS, SETTING OUT THE LOCATION AND LEVELS OF PROPOSED STRUCTURES, CONSTRUCTION AND MARKING OF REFERENCE PILLARS AND OTHER IDENTIFICATION WORKS ETC. THE CONTRACTOR SHALL PROVIDE THE OWNER/BHEL SUCH ASSISTANCE, INSTRUMENTS, MACHINES, LABOUR AND MATERIALS AS ARE NORMALLY REQUIRED FOR EXAMINING, MEASURING AND TESTING ANY WORK AND THE QUALITY, WEIGHT OR QUANTITY OF ANY MATERIAL USED.

**4.9.7** PROVIDING ALL INCIDENTAL ITEMS NOT SHOWN OR SPECIFIED BUT REASONABLY IMPLIED OR NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE WORK IN ACCORDANCE WITH CONTRACT.

**4.9.8** *LIASIONING WITH AND OBTAINING ALL APPLICABLE CLEARANCE FROM CONCERNED AUTHORITY (if ANY) FOR THE PORTION OF WORK EXECUTED UNDER THESE SPECIFICATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. BHEL WILL PROVIDE ONLY THE TECHNICAL ASSISTANCE LIKE FURNISHING TECHNICAL INFORMATIONS ETC. IN THIS REGARD. ALL STATUTORY FEES PAID IN THIS REGARD SHALL BE BORNE BY THE SUCCESSFUL BIDDER INCLUDING ALL ARRANGEMENTS AND EXPENSES.*

**4.9.9 WORK BY OTHERS:** NO WORK UNDER THIS SPECIFICATION WILL BE PROVIDED BY ANY AGENCY OTHER THAN THE CONTRACTOR UNLESS SPECIFICALLY MENTIONED ELSEWHERE IN THE CONTRACT.

##### **4.10.0 OTHER IMPORTANT TERMS AND CONDITIONS**

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

#### 4.10.3

CONTRACTOR SHALL DISPLAY 'DANGER BOARDS' AS PER INSTRUCTION OF BHEL/ CUSTOMER AS PER REQUIREMENT.

#### 4.10.4

CONTRACTOR SHALL NOT BE ALLOWED TO BRING ANY INFLAMMABLE MATERIAL INSIDE THE PLANT. HOWEVER, FOR ABSOLUTE REQUIREMENT OF THESE MATERIALS, CONTRACTOR SHALL HAVE TO TAKE ADVANCE PERMISSION/APPROVAL FROM BHEL/CUSTOMER AND SHALL STORE IN PROPER PLACE FOLLOWING ADEQUATE SAFETY MEASURES AND SHALL PUT BANNER/BOARD DANGER/ INFLAMMABLE /HIGHLY INFLAMMABLE/NO SMOKING' AS PER THE REQUIREMENT OF BHEL/CUSTOMER.

#### 4.10.5

CONTRACTOR SHALL PROVIDE SUFFICIENT QUANTITIES OF FIRE HYDRANT (WATER, SAND) AND FIRE EXTINGUISHERS AT SAFE/ACCESSIBLE DISTANCE WHILE CARRYING OUT HOT WORK. CONTRACTOR SHALL DEPLOY HIS TRAINED PERSONS FOR OPERATION OF SUCH SAFETY EQUIPMENT.

#### 4.10.6 FIELD QUALITY LAB.

THE CONTRACTOR HAS TO ESTABLISH A SEPARATE FIELD QUALITY LAB AT SITE WITH ALL REQUISITE INSTRUMENTS AND QUALIFIED ENGINEERS/SUPERVISOR FOR DAY-TO-DAY QUALITY CHECKS OF CONCRETE AND OTHER BUILDING MATERIALS DURING THE PROGRESS OF WORK. ALL QUALITY RECORDS AND LOGSHEETS SHALL BE MAINTAINED AS PER THE REQUIREMENT OF BHEL/BHEL'S CUSTOMER AND AS PER FIELD QUALITY PLAN APPROVED BY BHEL/GSECL/CONSULTANT.

**4.11.0 GROUND WATER TABLE: WORK AREA HAS TO BE MADE DRY BY PUMPING GROUND WATER AND HENCE BIDDER HAS TO ARRANGE DEWATERING PUMP/SPECIAL DEWATERING SYSTEM (IF REQUIRED) DURING EXCAVATION/PCC/AND PARTICULARLY DURING CONCRETE POUR.**

#### 4.11.1

The work though not specifically mentioned either in the drawings or in the tender specification but are needed to complete the RCC TWIN FLUE CHIMENY WITH BRICK LINED in totality as per project/system requirement & instruction of Engineer are also in the scope of this contract & to be completed 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, extra item shall be derived in following manner:-**

#### **(A) EXTRA/ADDITIONAL ITEMS OF WORK**

If any extra or additional items, which are not incorporated in the BOQ schedule, have to be executed by the contractor, the rate of such extra or additional work shall be as per the following:

The rate of such items shall be derived, if possible, from the available rates, agreed upon in the rate schedule of this contract.

If the items are covered under CPWD- DSR schedule, the rate shall be arrived as per the latest version with applicable escalation.

**If the items are not covered under above schedule, the rates have to be mutually agreed upon on the basis of prevailing market rates for which all documentary evidences, as required by BHEL shall have to be produced by the contractor. Decision of BHEL in such cases shall be final and binding on the contractor**

#### 4.11.2

The detailed 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.

#### 4.12.0 Specification for Civil works for TWIN FLUE RCC CHIMNEY:

Technical Specification No. PE-TS-E61-600-C001 shall be as per technical specification PART- 1, Technical bid, Volume – II for respective works, issued separately.

**4.13.0 Blasting:** ONLY CONTROLLED BLASTING SHALL BE PERMITTED FOR EXCAVATION OF ROCK. HOWEVER CONTRACTOR MAY ALSO GO FOR ANY OTHER PROVEN METHOD FOR EXCAVATION OF ROCK WITH APPROVAL OF BHEL/GSECL. MEASUREMENT OF HARD ROCK SHALL BE DONE ON STOCK MEASUREMENT BASIS LESS 30% FOR VOIDS. STONES SO GENERATED FROM THE WORK SHALL BE DISPOSED-OFF/REUSE IN THE WORK AS PER THE DIRECTION OF BHEL. **CONTRACTOR SHALL ARRANGE FOR NECESSARY PERMISSION FROM CONCERN DEPARTMENT FOR STORAGE & USAGE OF EXPLOSIVES AS PER RELAVANT PROCEDURE/LAW ENFORCED IN THAT AREA.**

**4.14.0 LABOUR LISENCE, PF REGISTRATION, WITNESSING OF LABOUR WAGES, REGULAR PF REMMITANCES OF WORKMEN & OBTAINING CERTIFICATE IN PRESCRIBED PROFORMA FROM WALFARE OFFICER BHEL/GSECL, OBTAINING GATE PASSES OF WORKMEN ETC. IS MANDATORY FOR THE CONTRACTOR.**



## **SECTION-5**

### **SPECIAL CONDITIONS**

#### **5.0 OBLIGATIONS OF THE CONTRACTOR (TOOLS, TACKLES, MATERIALS, CONSUMABLES ETC.)**

5.1 ACCOMMODATION, DRINKING WATER & LOCAL TRANSPORTATION FOR THE LABOURER

#### **LABOUR COLONY:**

BHEL / CLIENT WILL NOT PROVIDE ANY SPACE OR FACILITY FOR LABOUR COLONY. CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR THIS PURPOSE.

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

5.2.1 ALL TOOLS AND TACKLES LIKE EXCAVATOR, DUMPERS, SLIP FORM SHUTTERING, LASER MACHINE ETC. COMPLETE AS PER ANNEXURE MENTIONED ELSEWHERE, CONCRETE BATCHING MIXING PLANT OF REQUIRED CAPACITY, TRANSIT MIXER MACHINES, CONCRETE PUMPS, POCLAINS, TIPPERS, ROAD ROLLERS, WELL POINT DEWATERING SYSTEM (IF ANY), DEWATERING SYSTEM, VIBRATORS, PLATE VIBRATORS, CRANES OF ADEQUATE CAPACITY FOR UNLOADING, LOADING OF RAW & FABRICATED MATERIALS, PRE-ASSEMBLY ETC TO BE DONE AT CONTRACTOR'S STORAGE CUM FABRICATION YARD OUTSIDE/INSIDE PLANT PREMISES INCLUDING OPERATOR/DRIVER, FUEL, LUBRICANTS, ALL OTHER CONSUMABLES AND REQUIREMENTS HAVE TO BE ARRANGED BY THE CONTRACTOR.

5.2.2 ALL TOOLS AND TACKLES TO BE USED BY THE CONTRACTOR FOR THE WORK SHALL HAVE THE PRIOR APPROVAL OF BHEL ENGINEER IN REGARD TO BRAND, QUALITY AND SPECIFICATION.

5.2.3 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 NONAVAILABILITY 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 ALONGWITH DEPARTMENTAL OVERHEADS @ 30% 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 CRANES AND OTHER EQUIPMENT SHOULD BE SUCH THAT NO DAMAGE/ BREAKAGE OCCUR TO THE FOUNDATIONS, EQUIPMENTS, MATERIAL AND MEN. ALL ARRANGEMENTS FOR MOVEMENT OF ALL HIS T&P ETC. SHALL BE CONTRACTOR'S RESPONSIBILITY.

5.2.7 FOR FULL WELDING OF STRUCTURES, ONLY WELDING GENERATORS/ WELDING RECTIFORMERS MAY BE ALLOWED FOR USE. THE USE OF WELDING TRANSFORMERS WILL BE SUBJECT TO THE APPROVAL OF BHEL ENGINEER.

5.2.8 CONTRACTOR HAS TO ARRANGE NECESSARY DEWATERING PUMPS, TRANSIT MIXERS, BATCHING PLANTS, CONCRETE PUMPS AND VIBRATORS, CRANES, FABRICATION AND ERECTION TOOLS & PLANTS, ETC.

5.2.9 SINCE THE MAJORITY OF THEIR EQUIPMENTS, T&P HAVE TO BE STATIONED IN THEIR FABRICATION YARD, BATCHING PALNT AREA OUTSIDE/INSIDE THE PLANT, CONTRACTOR SHALL TAKE INTO ACCOUNT ALL FACTORS, IN THE PRICE QUOTED, INCLUDING FREQUENT MOVEMENT OF TOOLS AND PLANTS INSIDE AND OUTSIDE THE PLANT PREMISES.

5.2.10 CONTRACTOR SHALL FURNISH THE PROOF OF OWNING THE MAJOR TOOLS AND PLANTS.

### **5.3 CONSUMABLES**

#### **5.3.1**

THE CONTRACTOR SHALL PROVIDE ALL CONSUMABLES REQUIRED FOR CARRYING OUT THE WORK COVERED UNDER THIS SCOPE OF WORK.

#### **5.3.2**

ALL CONSUMABLES TO BE PROCURED AND USED FOR THE WORK MAY HAVE TO HAVE PRIOR APPROVAL OF BHEL ENGINEER IN REGARD TO BRAND AND QUALITY SPECIFICATION.

### **5.4 WELDING ELECTRODES AND GASES**

#### **5.4.1**

ALL THE REQUIRED WELDING ELECTRODES AS APPROVED BY BHEL SHALL BE ARRANGED BY CONTRACTOR AT HIS COST. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN APPROVAL OF BHEL, BEFORE PROCUREMENT REGARDING SUPPLIER, TYPE OF ELECTRODES ETC. ON RECEIPT OF THE ELECTRODES AT SITE, IT SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY BHEL REGARDING TYPE OF ELECTRODES, BATCH NUMBER AND DATE OF EXPIRY ETC.

BHEL RESERVES THE RIGHT TO REJECT THE USE OF ANY ELECTRODES AT ANY STAGE, IF FOUND DEFECTIVE BECAUSE OF BAD QUALITY, IMPROPER STORAGE, EXPIRY DATE, UNAPPROVED TYPE OF ELECTRODES ETC. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE THE SAME AT HIS COST WITHOUT LOSS OF TIME.

#### **5.4.2**

WELDING ELECTRODE STORAGE FACILITY (ROOM) HAVING EXTERNAL HEATING ARRANGEMENT TO CONTROL TEMPERATURE AND HUMIDITY AS PER THE SPECIFICATIONS OF BHEL SHALL BE PROVIDED. CALIBRATED THERMAMETERS HAVE TO BE INSTALLED IN THE ROOM FOR CONTROLLING THE ABOVE FACTORS.

#### **5.4.3**

ALL THE REQUIRED GASES LIKE OXYGEN, ACETYLENE, ETC. SHALL BE PROVIDED BY THE CONTRACTOR AT HIS COST.

#### **5.4.4**

IF AT ANY TIME DURING THE EXECUTION OF WORK, IT IS NOTICED THAT THE WORK IS SUFFERING ON ACCOUNT OF NONAVAILABILITY OF INPUTS FROM THE CONTRACTOR'S SIDE LIKE ELECTRODES, GASES AND OTHER MATERIALS, TOOLS & PLANTS, THEN, BHEL WILL MAKE ALTERNATE ARRANGEMENTS AND THE NECESSARY COSTS WITH OVERHEADS @ 30% SHALL BE RECOVERED.

#### **5.4.5**

MONTHLY CONSUMPTION DETAILS IN RESPECT OF ALL MAJOR CONSUMABLES SHALL BE SUBMITTED TO BHEL.

### **5.5 FIELD OFFICE, STORES, FABRICATION YARD FOR STRUCTURALS, DISPOSAL AREA FOR EXCAVATED SURPLUS EARTH ETC.**

**5.5.1 SITE OFFICE & STORES:** BHEL/GSECL SHALL PROVIDE OPEN SPACE FOR CONSTRUCTION OF OFFICE, STORE SHEDS AND STORES FOR STORAGE OF PROJECT MATERIALS INSIDE THE PROJECT PROMISES TO THE EXTENT FEASIBLE. THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR CONSTRUCTION OF FIELD OFFICE, STORE SHED FOR STORING CEMENT & OTHER PROJECT MATERIALS AND SITE STORES FOR STORING SMALL T&Ps, HANDTOOLS, ETC.

### **5.5.2 MAJOR STORES AND FABRICATION YARD FOR STRUCTURALS WORKS:-**

**(A)**

SPACE WILL BE MADE AVAILABLE OUTSIDE/INSIDE PLANT PREMISES FOR STORAGE OF CONTRACTOR'S MATERIALS LIKE CEMENT, OTHER PROJECT MATERIALS, T&Ps, CONSUMABLES INCLUDING WELDING ELECTRODES ETC., AND FOR FABRICATION OF STRUCTURES. CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENT OUTSIDE/INSIDE THE PLANT PREMISES FOR STORAGE OF CEMENT, OTHER PROJECT MATERIALS, CONSUMABLES AND MAJOR TOOLS AND PLANTS INCLUDING BATCHING PLANTS, OTHER VALUABLE MATERIAL BROUGHT FOR THE WORK. SIMILARLY SPACE FOR STORAGE, FABRICATION, PRE-ASSEMBLY OF STRUCTURALS SHALL BE PROVIDED BY THE CUSTOMER OUTSIDE/INSIDE THE PLANT PREMISES.

ALL ASSOCIATED INFRASTRUCTURES LIKE SECURITY AND FENCING/BOUNDARIES ETC., SHALL BE ARRANGED BY THE CONTRACTOR FOR THEIR OFFICE COMPLEX, STORGAE SHED, CEMENT GODOWN ETC. ALL ATTENDENT TAXES, DUTIES, LEVIES, AND ALL OTHER INCIDENTALS SHALL BE TO THE CONTRACTOR'S ACCOUNT. ALSO OBTAINING, AND KEEPING THEM VALID TILL COMPLETION OF WORK, ALL NECESSARY CLEARANCES, PERMITS, LICENSES ETC. AS PER THE LAWS, RULES AND REGULATIONS IN FORCE FROM TIME TO TIME AND ADHERENCE TO THESE SHALL BE THE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR'S QUOTED RATES SHALL TAKE IN TO ACCOUNT ALL THESE FACTORS. BHEL WILL NOT ENTERTAIN ANY CLAIM WHATSOEVER FOR COMPENSATION/ RE-IMBURSEMENT OF SUCH EXPENSES EXCEPT FOR THOSE SPECIFICALLY STATED.

**(B)**

CLOSE STORAGE SHED TO BE USED FOR STORAGE OF CEMENT SHOULD HAVE ADEQUATE CAPACITY AND PROTECTED ENOUGH AGAINST LEAKAGE DURING MONSOON AND DAMPNESS. STORING OF CEMENT AND STEEL SHALL BE DONE FOR THE STANDARD PRACTICE OF CIVIL ENGINEERING AND AS PER THE INSTRUCTION OF BHEL.

**(C)**

CONTRACTOR SHALL PROVIDE TARPAULINS, SLEEPERS (WOODEN/RCC) AND ANY OTHER MATERIALS / AID REQUIRED FOR STORAGE OF ALL THEIR MATERIALS IN THEIR STORAGE CUM FABRICATION YARD AS WELL AS AT SITE.

### **5.5.3 AREA FOR DISPOSAL OF EXCAVATED SURPLUS EARTH**

AREA FOR DISPOSAL OF EXCAVATED SURPLUS EARTH SHALL BE PROVIDED BY THE CUSTOMER AT FREE OF COST OUTSIDE THE BATTERY LIMIT/PROJECT PREMISES DEPENDING OF SPACE AVAILABILITY. CONTRACTOR SHALL ARRANGE PROGRESSIVE DISPOSAL OF EXCAVATED SURPLUS EARTH AS ACCUMULATION OF EXCAVATED EARTH SHALL NOT BE PERMITTED. HENCE CONTRACTOR SHALL DISPOSE OFF THE EXCAVATED EARTH GENERATED DURING EXECUTION OF WORK WHILE, IF PERMITTED, KEEPING THE SUFFICIENT QUANTITY OF GOOD EXCAVATED EARTH FOR BACKFILLING. ALSO, LEVELLING, COSOLIDATION ETC., REQUIRED TO BE DONE ON THE DISPOSED EARTH IN THE SAID AREA SHALL BE PERFORMED BY THE CONTRACTOR. RATES QUOTED SHALL BE INCLUSIVE OF ALL COST FACTORS. BHEL WILL NOT ENTERTAIN ANY CLAIM WHATSOEVER FOR COMPENSATION/ RE-IMBURSEMENT OF SUCH EXPENSES EXCEPT FOR THOSE SPECIFICALLY STATED. THE CONTRACTOR HAS TO PLAN CONCRETE WORK IN SUCH MANNER THAT GOOD EARTH AVAILABLE DURING EXCAVATION CAN BE EFFECTIVELY USED IN BACK FILLING DIRECTLY TO SAVE TIME AND TRANSPORT OUTSIDE.

#### **5.5.4**

ON COMPLETION OF WORK, ALL THE TEMPORARY BUILDINGS, STRUCTURES, PIPELINES, CABLES, ETC. SHALL BE DISMANTLED AND LEVELLED AND DEBRIS SHALL BE REMOVED AS PER INSTRUCTIONS OF BHEL BY THE CONTRACTOR AT HIS COST. IN THE EVENT OF HIS FAILURE TO DO SO, THE SAME WILL BE ARRANGED BY BHEL AND EXPENDITURE THEREOF WITH OVERHEADS WILL BE RECOVERED FROM THE CONTRACTOR. THE DECISION OF BHEL ENGINEER IN THIS REGARD IS FINAL.

### **5.6 AREA LIGHTING**

#### **5.6.1**

CONTRACTOR SHALL ARRANGE ADEQUATE FLOODLIGHTS, HAND LAMPS AND AREA LIGHTING. PROVISION OF DISTRIBUTION LINES FOR LIGHTING FROM THE SINGLE POINT TO THE REQUIRED

PLACE WITH PROPER DISTRIBUTION BOARDS, OBSERVING THE SAFETY RULES LAID DOWN BY THE ELECTRICAL AUTHORITIES OF THE STATE SHALL BE DONE BY THE CONTRACTOR INCLUDING ALL THE MATERIALS LIKE CABLES, FUSES, SWITCH BOARDS ETC.

#### **5.7.0 CONSTRUCTION POWER & WATER**

##### **5.7.1 CONSTRUCTION POWER:-**

CONSTRUCTION POWER (THREE PHASE 415V/440V, 4-WIRE) WILL BE PROVIDED BY CUSTOMER (GSECL) AT ONE POINT WITHIN THE PLANT BOUNDARY LIMIT FREE OF CHARGES. POWER FROM THIS SOURCE SHALL BE PROVIDED TO THE SUCCESSFUL BIDDER DEPENDING ON REQUIREMENT. ALL NECESSARY CABLES, FUSES, SWITCHES, SWITCHBOARDS, ENERGY METERS ETC., AND ANY OTHER INSTALLATION AS SPECIFIED BY STATUTORY AUTHORITY IN THIS REGARD FOR FURTHER DRAWAL OF POWER SHALL BE PROVIDED BY THE CONTRACTOR. OBTAINING APPROVALS, PAYMENT OF NECESSARY FEES, DUTIES ETC TOWARDS THE CLEARANCE OF SUCH INSTALLATIONS, POWER CONSUMED PRIOR TO THEIR BEING PUT TO USE OR AS MAY BE SPECIFIED, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. **OTHER STATUTORY CHARGES LIKE CESS & DUTIES AND INCIDENTAL CHARGES (IF ANY) AS MAY BE APPLICABLE FROM TIME TO TIME/ LEVIED BY THE CUSTOMER AS PER LAWS APPLICABLE FOR THE POWER CONSUMED SHALL BE BORNE BY THE CONTRACTOR.**

##### **5.7.2**

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE, MAINTAIN THE COMPLETE INSTALLATION ON THE LOAD SIDE OF THE SUPPLY WITH DUE REGARD TO THE SAFETY REQUIREMENTS AT SITE. ALL CABLING AND INSTALLATIONS SHALL COMPLY IN ALL RESPECTS WITH THE APPROPRIATE STATUTORY REQUIREMENTS.

##### **5.7.3 CONSTRUCTION & DRINKING WATER, SERVICE ROADS:-**

**CONSTRUCTION WATER AND DRINKING WATER SHALL BE PROVIDED BY BHEL/GSECL AT ONE POINT EACH WITHIN THE PLANT BOUNDARY LIMIT FREE OF COST. THESE CAN ALSO BE PROVIDED AT MORE LOCATIONS DEPENDING ON ACTUAL REQUIREMENT OF PROJECT. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR FURTHER DISTRIBUTION AT HIS OWN COST.**

**CONTRACTOR HAS TO BUILD TEMPORARY APPROACH ROADS FOR TRANSPORTATION OF MATERIALS, CONCRETE ETC. NO SEPARATE PAYMENT SHALL BE MADE FOR THE SAME.**

5.7.4 IN CASE OF FAILURE/BREAKDOWN OF CUSTOMER SUPPLIED POWER; IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP ALTERNATIVE ARRANGEMENTS READY DURING CONSTRUCTION OF CHIMNEY SHELL. CONTRACTOR SHALL BE ADEQUATELY EQUIPPED TO ARRANGE STANDBY DIESEL WELDING GENERATORS (**DG SET OF 2x125/1x250KVA**) DEPENDING ON ACTUAL POWER REQUIREMENT, IN THE EVENT OF CONSTRUCTION POWER FAILURE. ESSENTIAL WELDING JOBS SHALL NOT BE STOPPED ON ACCOUNT OF MAIN CONSTRUCTION POWER FAILURE. ALSO, HE SHOULD DEPLOY ADEQUATE WATER TANKERS FOR TRANSPORT OF WATER ON THE OCCASIONS WHEN CUSTOMER SUPPLIED WATER IS NOT AVAILABLE/ INADEQUATE.

5.7.5 CONTRACTOR HAS TO FORM TEMPORARY APPROACH ROAD FROM MAIN ROAD NEAR WORK SITE FOR TRANSPORTATION OF MATERIALS, CONCRETE ETC. NO SEPARATE PAYMENT SHALL BE MADE FOR THE SAME.

#### **5.8.0 MATERIALS:-**

5.8.1 **Steel like (Structural, TMT rebars for reinforcement/mild reinforcement steel, and 40mm Dia MS round earthing rod) as specified in relevant BOQ shall be issued at free of cost by BHEL for use in the work covered in this contract from BHEL Stores/Storage.** The contractor shall collect these materials from BHEL stores at specified places at his own cost and store the same at the work site or in his stores as per standard norms. Materials issued will be used only for construction of permanent work.

- 5.8.2 BHEL reserves the right to recover from the contractor any loss arising out of damage/ theft or any other causes or during verification/stacking or at any time under the custody of the contractor.
- 5.8.3 The contractor shall take care of material issued by BHEL and shall protect the same from damage and weathering. Contractor shall construct waterproof cement store (capacity minimum 1000 MT) for storing and stacking of cement **procured by the successful vendor**. Design & drawing required for storage of cement shall be prepared by the vendor and shall be approved by BHEL's site in-charge before taking up the construction work.
- 5.8.4 The Contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such materials.
- 5.8.5** No material shall be issued to the contractor except as those indicated above i.e. structural steel, TMT rebars for reinforcement/mild steel and stainless steel as specified in relevant BOQ. Contractor will have to make his own arrangement at his own cost for procurement of any other materials except as mentioned above, as required for the works and of such quality as acceptable to BHEL.
- 5.8.6 The contractor shall maintain proper store account for all the BHEL issued materials and shall give three copies of monthly-computerized reconciliation statement of such account to the BHEL.
- 5.8.7 Contractor shall also carryout in complete association with BHEL, the material management functions and execution like day to day update of materials, issued to contractor, accounting for surplus/scrap material returned etc. These functions shall also be carried out through computerized system utilizing suitable software. Contractor shall engage experienced software personnel to associate on dedicated basis for efficient discharge of the same.
- 5.8.8 The contractor shall solely be responsible for the safety, quality & quantity of material after it is handed over and issued to contractor by the BHEL.
- 5.8.9 BHEL issued materials, shall not be under any circumstances whatsoever, and shall be taken out of the project site unless otherwise permitted by BHEL.

#### **5.9.0 (FOLLOW UP & HANDLING OF MATERIALS ISSUED BY BHEL)**

- 5.9.1 BHEL will place Purchase Order on the manufactures for procurement of structural steel, TMT rebars, SS steel and Earthing rods as specified in BOQ and successful bidders will provide all necessary supports for follow up/chase up with manufactures/supplies/vendors for speedy delivery of materials at site including posting a man for short duration at manufactures factory within their quoted rates.
- 5.9.2 Steel like (Structural, TMT rebars for reinforcement, Stainless steel and MS round earthing rod) as specified in relevant BOQ shall be issued at free of cost by BHEL for use in the work covered in this contract from BHEL Stores/Storage.

Consignment of Steel (structural and reinforcement) will be issued to the contractor as received by BHEL, on weighment basis from its supplier, as per the delivery challan of

the supplier till full fledged functioning of Weigh bridge. After installation and commissioning of weigh bride, issue of materials shall be regularized by **Weigh Bridge**. It may be also issued based on linear measurements and sectional weights till full fledged operation of **Weigh Bridge**.

It would be the responsibility of the contractor to keep in constant contact with BHEL site to find out the delivery status, arrival of the consignments and arrange for escort to accompany the truck/ trailer for transportation of above materials by BHEL'S supplier, **if necessary**.

5.9.3 All materials issued by BHEL shall be stacked, stored above ground level by use of concrete or wooden sleepers. No materials shall remain on ground at any time. All concrete or wooden sleepers required for stacking the materials shall be arranged by contractor (successful bidder of this package) at his own cost within the quoted rates. All other equipments like winches, d-shackles, slings of various sizes, max puller, pulley blocks, jacks, trucks, trailers etc. required for such handling of steel from BHEL stores/storage yard etc. shall be arranged by contractor within quoted/accepted rates.

5.9.4 The contractor shall take delivery of the materials from the designated place within premises of 2x250MW Sikka Exp. TPS at his own cost and store the same at his stores as per standard norms. Open land for such purposes shall be provided by BHEL on free of cost basis. Temporary barbed wire fencing of the open storage yard is to be done by the contractor and is included under the scope of his work. Contractor shall also remove grass, bushes, trees etc wherever required off the land provided to him and shall make proper continuous up keeping of the open yard /land by removing grass, bushes trees etc and same is included under the scope of his work & no extra payment shall be made to the contractor in this regard. The bidder shall make complete arrangement of necessary security personnel's to safeguard all such materials in his custody. Materials issued will be used only for construction of permanent work. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering.

5.9.5

The contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such material

Excessive rusting of steel in custody of agency/contractor must be avoided. In case, due to any cause attributable to the contractor, such rusting of steel occur rendering the same unusable, then such quantity of steel shall be recovered from the interim payment at the penal rate specified in the tender.

No material shall be issued to the contractor except as those indicated above i.e. steel unless otherwise expressly provided for in the contract. Contractor will have to make his own arrangement at his own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL.

#### 5.10.0 **ISSUE OF BHEL MATERIALS ISSUE OF STEEL: -**

The steel shall be issued to the contractor on the following basis:

(a) Structural Steel, : Weighment basis (Unit – MT)

(b) Reinforcement Steel  
and Earthing rod (MS round).

: Weighment basis (Unit – MT)

All the steel (structural, reinforcement) issued by the BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs. The measurement for payment as well as for accounting shall be based on linear measurements and the sectional weights as indicated in the following is specifications.

IS: 808-1964            Beams, Channels and Angles

IS: 1730-1961        Plates, Sheets and Strips

IS: 1732-1971        Rounds including TMT rebars.

In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.

The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores no claims for extra payment because of issue of non-standard length will be entertained.

In case MS flats as required in the fabrication of structures are not available, the contractor shall cut such width out of the available MS plates to make flats at no extra cost till such material is available and procured by BHEL.

**The Contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores/Storage yard. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores/Storage yard.**

The contractor shall submit to the engineer, a statement indicating estimated quantity of steel required during a quarter at least two months in advance of the quarter. In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.

Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

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SL. NO.	ISSUE OF MATERIALS	MAX. QTY IN CONTRACTORS STORE.
1.	Reinforcement Steel	Requirement of one month
2.	Structural Steel	---- do----

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Bidders to ensure that no lamination materials are taken over by them from BHEL stores. Fabrication wastage, if any due to above, shall not be compensated by BHEL.

Bidder to note that all fasteners like MS/HT/HSFG bolts/nuts, lock nuts, washers etc. shall be supplied by the bidder as per relevant items of BOQ.

Bidder to note that cement and steel required for their enabling job like store/site office etc shall be arranged at his own cost.

#### **5.11.0 RETURN OF MATERIALS:-**

All surplus steel and all wastage materials will be taken back on weighment basis.

Surplus, unused and un-tampered steel shall be sorted section-wise and returned separately for a place directed by BHEL/Engineer within the project area, Return of such materials will not be entitled to any handling and incidental charges.

All wastage / scrap (including melting scrap, wastage, unusable scrap) shall be returned item wise to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any additional cost due handling and transportation and incidental charge.

All Scrap for reinforcement (cut pieces) shall be returned separately.

All Scrap for structural steel including melting scrap shall be returned separately.

#### **STEEL CONSUMPTION AND WASTAGE:-**

##### **5.11.1 REINFORCEMENT STEEL CONSUMPTION AND WASTAGE.**

The theoretical consumption of various sections and/or diameter of reinforcement and earthing M S round shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering/based on linear measurements and the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

i) Actual consumption = Issue – Surplus.

ii) Surplus = Un-tampered and unused qty. of steel returned by the contractor to BHEL store along-with relevant documents.

iii) Wastage = Actual consumption – Theoretical consumption.

#### **WASTAGE**

**ALLOWABLE WASTAGE: -** Plus five percentage (+5%) of the theoretical consumption shall be considered as allowable wastage.

Wastage as further classified as cut pieces (pieces of lengths 3 M and above) and scrap (including pieces of lengths less than 3 M) measured as per actual weighment basis.

SL. NO.	REINFORCEMENT STEEL & EARTHING ROD 40 mm MS ROUND	BASIS OF ISSUE & PENAL RECOVERY
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R-1	Theoretical consumption (without Considering wastage and scrap or loss)	Free
R-2	Wastage limited to plus five percent (+5%) of aforesaid theoretical Consumption (R-1) towards allowable Wastage (cut pieces plus scrap to be returned to BHEL).	Free
R-3	Wastage beyond five percent (+5%) of the theoretical consumption above (R-1). (Cut pieces plus scrap to be returned to BHEL).	Penal Rate

### 5.12.0 STRUCTURAL STEEL (ROLLED SECTIONS, MS FLATS ETC.), STAINLESS STEEL LINER CONSUMPTION & WASTAGE:-

#### CONSUMPTION STRUCTURAL STEEL: -

5.12.1 The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering/based on linear measurements and the sectional weights as per Indian standard. No extra shall payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

- i) Actual consumption = Issue – Surplus.
- ii) Surplus = Untampered, unused, uncut quantity of steel returned by the contractor to BHEL store.
- iii) Wastage = Actual consumption – Theoretical consumption.

#### WASTAGE OF STRUCTURAL STEEL:-

Allowable wastage: - (+) 5% (Plus five percent) of the theoretical consumption shall be considered. Wastage is further classified as cut pieces (pieces of rolled steel section length 3M and above) and scrap (including pieces of rolled steel section length less than 3m & MS plate less than one sq. M Area width less than 100cm) measured as per actual weighment basis. Invisible wastage (loss of materials due to gas cutting, straightening of edges etc) shall be limited to 0.5% (zero point five percent) of theoretical consumption and shall be considered for reconciliation purposes only. But this invisible wastage shall be considered to be included in allowable wastage (i.e. five percent).

SL. NO.	CONSUMPTION OF STRUCTURAL STEEL (ROLLED SECTION, PLATES & SS liner)	BASIS OF ISSUE & PENAL RECOVERY
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S-1	Theoretical consumption (without Considering any wastage, scrap or	Free
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loss)

S-2	Wastage limited to plus five percent (+5%) of the aforesaid theoretical Consumption (S-1) towards allowable wastage.	Free
S-3	Wastage beyond five percent (5%) of the aforesaid theoretical consumption (S-1). (All wastage steel shall be returned to BHEL).	Penal Rate

#### **5.13.0 RECONCILIATION OF BHEL ISSUED MATERIALS: -**

The contractor shall submit a reconciliation statement of steel issued to them with each RA Bill.

At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance materials are available with contractor's custody at site.

At the time of submission of bills by the contractor, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.

The approved drawings/bar bending schedules are to be considered for the purpose of reconciliation of materials.

#### **5.14.0 RECOVERY OF MATERIAL:-**

If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly R/A Bill at the Penal Rate.

#### **PENAL RATE OF MATERIALS**

A. REINFORCEMENT STEEL AND EARTHING ROD ETC. Rs. 46, 000/- per MT.

#### **B. STRUCTURAL STEEL**

1. Chqd. Plates/MS PLates	Rs. 50, 000/- per MT.
2. Flats/ Beams/ Channel/ Angles etc. (Rolled sections)	Rs. 50000/- per MT.
3. Stainless Steel liner	Rs 2,50,000/- per MT

#### **5.15.0 PROCUREMENT OF MATERIALS BY SUCCESSFUL CONTRACTORS AND TESTING:**

MATERIAL REQUIRED FOR THE ENTIRE JOB OTHER THAN ISSUED BY BHEL AS EXPLAINED ABOVE LIKE CEMENT, SAND, AGGREGATES, WINDOWS, DOORS, VENTILATORS, ROLLING SHUTTER, SANITARY FIXTURES, PAINTING MATERIAL, ELECTRICAL FITTINGS AND WIRING MATERIAL AND ALL OTHER MATERIAL REQUIRED FOR THE COMPLETION OF ENTIRE SCOPE, BOLTS & NUTS, HSFG/HT BOLTS HAVE TO BE ARRANGED BY THE CONTRACTOR, EXCEPTING THOSE SPECIFICALLY INDICATED AS BHEL SCOPE OF SUPPLY. BHEL RESERVES THE RIGHT TO REJECT ANY MATERIAL NOT FOUND SATISFACTORY. CONTRACTOR SHALL PRODUCE MANUFACTURER'S TEST CERTIFICATE FOR CEMENT FOR EVERY BATCH OF MANUFACTURING ALONGWITH EACH CONSIGNMENT BROUGHT TO THE SITE. CEMENT SHALL BE PROCURED FROM FRESH STOCK ONLY. APART FROM THE ABOVE, IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO GET THE TESTING OF CEMENT, OR ANY OTHER MATERIALS PROCURED FROM OUTSIDE LABORATORY APPROVED BY BSECL/BHEL TO ASCERTAIN THE QUALITY IF INSISTED BY BHEL/BHEL'S CUSTOMER. RATE QUOTED SHALL BE INCLUSIVE OF ALL SUCH CONTINGENCIES AND NO ADDITIONAL PAYMENT SHALL BE MADE ON THIS ACCOUNT. FOR THIS PURPOSE, SAMPLE SHALL BE COLLECTED AT SITE IN PRESENCE OF BHEL/BHEL CUSTOMER'S REPRESENTATIVE. THE VARIATION IN PRICE OF ALL THE PLANT MATERIALS SUPPLIED BY THE CONTRACTOR SHALL BE SUBJECT TO THE RELEVANT PRICE VARIATION CLAUSE.

#### **5.17.0 FIELD TESTING EQUIPMENTS**

APART FROM MAINTAINING QUALITY REQUIREMENT AS ALREADY SPECIFIED IN TENDER, CONTRACTOR SHALL ARRANGE HIS OWN TESTING LABORATORY ALONGWITH CALIBRATED TEST EQUIPMENTS FOR DAY TODAY WORK AT SITE. SPECIAL TESTING REQUIREMENTS OF TRIAL MIX FOR MIX DESIGN CAN BE TIED UP WITH REPUTED LOCAL TESTING LABORATORY/INSTITUTION. THE ARRANGEMENT TO BE CLEARLY INDICATED PRIOR TO START OF WORK.

#### **5.18.0 OTHER RESPONSIBILITIES IN GENERAL**

CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER USAGE OF THEIR MATERIALS LIKE CEMENT, AND AGGREGATES ETC. AS PER STANDARD REQUIREMENT OF IS CODES AND CONTROL THE WASTAGE WITHIN LIMIT. NO COMPENSATION SHALL BE MADE FOR ANY EXCESS CONSUMPTION UNDER ANY CIRCUMSTANCES.

#### **5.19.0**

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DELAY IN PROGRESS OF WORK DUE TO DELAY/SHORT SUPPLY OF MATERIAL TO BE PROCURED BY THEM FOR THIS JOB.

#### **5.20.0**

JOINT INSPECTION/CHECKING FOR ROUTINE JOBS SHALL BE DONE JOINTLY BY BHEL, BSECL/THEIR CONSULTANT. CONTRACTOR HAS TO ARRANGE FOR NECESSARY PROTOCOLS AND OTHER QUALITY RECORDS AS PER THE PROCEDURE OF BHEL.

#### **5.21.0**

AS-BUILT DRAWING: CONTRACTOR SHALL ARRANGE TO INCORPORATE ALL CHANGES, IN AFC DRAWINGS, MADE AS PER THE SITE REQUIREMENT ON COMPLETION OF WORK AND SUBMIT THE

SAME TO BHEL FOR PREPARING FINAL AS-BUILT DRAWING. THIS SHALL FORM PART OF WORK AND RATES QUOTED SHALL BE INCLUSIVE OF THIS.

**5.22.0**

THE CONTRACTOR IN THE EVENT OF ENGAGING 10 OR MORE WORKMEN WILL OBTAIN INDEPENDENT LICENCE UNDER THE CONTRACT LABOUR (REGULATION AND ABOLITION) ACT 1970 FROM THE CONCERNED AUTHORITIES BASED ON THE CERTIFICATE (FORM-V) ISSUED BY THE PRINCIPAL EMPLOYER/CUSTOMER.

**5.23.0**

CONTRACTOR WILL DEDUCT THE NECESSARY AMOUNT FROM HIS EMPLOYEES TOWARDS PROVIDENT FUND AND CONTRIBUTE THE EQUAL AMOUNT AS PER GOVERNMENT OF INDIA LABOUR LAWS. THIS AMOUNT WILL BE DEPOSITED REGULARLY TO THE PROVIDENT FUND COMMISSIONER AND GET THE ACCOUNT CODE. CONTRACTOR SHALL SUBMIT THE ABOVE ACCOUNT CODE DULY CERTIFIED BY PF COMMISSIONER TO BHEL PROJECT INCHARGE.

**5.24.0**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE GATE PASS FOR ALL HIS EMPLOYEES, T&P ETC. NECESSARY COORDINATION WITH BSECL/BHEL OFFICIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO FOLLOW ALL THE PROCEDURES LAID DOWN BY BSECL/BHEL FOR MAKING GATE PASSES.

**5.25.0**

BHEL/GSECL MAY INSIST UPON WITNESSING THE REGULAR PAYMENT TO THE LABOUR. THEY MAY ALSO LIKE TO VERIFY THE RELEVANT RECORDS FOR COMPLIANCE WITH STATUTORY REQUIREMENTS. CONTRACTOR SHALL ENABLE SUCH FACILITIES TO BHEL /MPSEB

**5.26.0**

CONTRACTOR SHALL ALSO COMPLY WITH THE PROVISIONS OF ESI ACT IN VOGUE AND SUBMIT EVIDENCE THEREOF TO BHEL SITE INCHARGE. ALSO ALL OTHER EMPLOYEES BENEFITS TO BE BORNE BY THE CONTRACTOR AS PER THE LABOUR LAWS. CONTRACTOR SHALL PRODUCE NECESSARY CERTIFICATES TOWARDS THEIR COMPLIANCE WITH SUCH STATUTES AND PAYMENT OF ALL STATUTORY DUES.

**5.27.0**

CONTRACTOR SHALL ALSO COMPLY WITH THE REQUIREMENTS OF LOCAL AUTHORITIES/ PROJECT AUTHORITIES CALLING FOR POLICE VERIFICATION OF ANTECEDENTS OF THE WORKMEN, STAFF ETC.

**5.28.0**

WHERE PERMITTED, BY GSECL/BHEL, TO WORK BEYOND NORMAL WORKING HOURS, THE CONTRACTOR SHALL ARRANGE NECESSARY GATE PASSES.

## **5.29 TAXES, DUTIES, LEVIES**

**5.29.1**

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

**5.29.1.1**

The contractor shall pay all (save the specific exclusions as enumerated in this contract) taxes, fees, license charges, deposits, duties, tools, royalty, 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.

However, provisions regarding Service Tax and Value Added Tax (VAT) on output services and goods shall be as per following clauses.

### 5.29.2 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 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.

### 5.29.3 VAT (Sales Tax /WCT)

As regards Value Added Tax (VAT) on transfer of property in goods involved in Works Contract (previously known as Works Contract Tax) applicable as per local laws, the price quoted by the contractor shall be **exclusive** of the same. Where such taxes are required to be paid by the contractor, this will be reimbursed on production of proof of payment made to the authorities by the Contractor. In any case the Contractor shall register himself with the respective Sales Tax authorities of the state and submit proof of such registration to BHEL along with the first RA bill. The contractor has to take all necessary steps to **minimize tax on input goods** by purchasing the materials from any registered dealer of the concerned state only. In case contractor opts for composition, it will be with the prior express consent of BHEL. Deduction of tax at source shall be made as per the provisions of law unless otherwise found exempted. In case tax is deducted at source as per the provisions of law, this is to be construed as an advance tax paid by the contractor and no reimbursement thereof will be made unless specifically agreed to.

### 5.29.4 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.

### 5.29.5 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.

### **5.30.0 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.

#### **5.31.0**

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

### **5.32.0 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.

### **5.8.2 FIELD TESTING EQUIPMENTS**

APART FROM MAINTAINING QUALITY REQUIREMENT AS ALREADY SPECIFIED IN TENDER, CONTRACTOR SHALL ARRANGE HIS OWN TESTING LABORATORY ALONGWITH CALIBRATED TEST EQUIPMENTS FOR DAY TODAY WORK AT SITE. SPECIAL TESTING REQUIREMENTS OF TRIAL MIX FOR MIX DESIGN CAN BE TIED UP WITH REPUTED LOCAL TESTING LABORATORY/INSTITUTION/ENGINEERING COLLEGE. THE ARRANGEMENT TO BE CLEARLY INDICATED PRIOR TO START OF WORK.

## **5.9 OTHER RESPONSIBILITIES IN GENERAL**

### **5.9.1**

CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER USAGE OF THEIR MATERIALS LIKE CEMENT, STEEL, AND AGGREGATES ETC. AS PER STANDARD REQUIREMENT OF IS CODES AND CONTROL THE WASTAGE WITHIN LIMIT. NO COMPENSATION SHALL BE MADE FOR ANY EXCESS CONSUMPTION UNDER ANY CIRCUMSTANCES.

### **5.9.2**

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY DELAY IN PROGRESS OF WORK DUE TO DELAY/SHORT SUPPLY OF MATERIAL TO BE PROCURED BY THEM FOR THIS JOB.

### **5.9.3**

RUSTING OF STEEL SHOULD BE AVOIDED TO THE MAXIMUM EXTENT POSSIBLE WITHOUT HAMPERING THE CONTINUITY OF CONSTRUCTION/ERECTION. IN CASE RUSTING OF STEEL OCCURS RENDERING THE SAME UNUSABLE, THE CONTRACTOR SHALL REMAIN RESPONSIBLE TO MAKE GOOD THE LOSS AT HIS OWN COST.

### **5.9.4**

JOINT INSPECTION/CHECKING FOR ROUTINE JOBS SHALL BE DONE JOINTLY BY BHEL, BSECL/THEIR CONSULTANT. CONTRACTOR HAS TO ARRANGE FOR NECESSARY PROTOCOLS AND OTHER QUALITY RECORDS AS PER THE PROCEDURE OF BHEL.

### **5.9.5**

AS-BUILT DRAWING: CONTRACTOR SHALL ARRANGE TO INCORPORATE ALL CHANGES, IN AFC DRAWINGS, MADE AS PER THE SITE REQUIREMENT ON COMPLETION OF WORK AND SUBMIT THE SAME TO BHEL FOR PREPARING FINAL AS-BUILT DRAWING. THIS SHALL FORM PART OF WORK AND RATES QUOTED SHALL BE INCLUSIVE OF THIS.

### **5.9.6**

THE CONTRACTOR IN THE EVENT OF ENGAGING 10 OR MORE WORKMEN WILL OBTAIN INDEPENDENT LICENCE UNDER THE CONTRACT LABOUR (REGULATION AND ABOLITION) ACT 1970 FROM THE CONCERNED AUTHORITIES BASED ON THE CERTIFICATE (FORM-V) ISSUED BY THE PRINCIPAL EMPLOYER/CUSTOMER.

### **5.9.7**

CONTRACTOR WILL DEDUCT THE NECESSARY AMOUNT FROM HIS EMPLOYEES TOWARDS PROVIDENT FUND AND CONTRIBUTE THE EQUAL AMOUNT AS PER GOVERNMENT OF INDIA LABOUR LAWS. THIS AMOUNT WILL BE DEPOSITED REGULARLY TO THE PROVIDENT FUND COMMISSIONER AND GET THE ACCOUNT CODE. CONTRACTOR SHALL SUBMIT THE ABOVE ACCOUNT CODE DULY CERTIFIED BY PF COMMISSIONER TO BHEL PROJECT INCHARGE.

### **5.9.8**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE GATE PASS FOR ALL HIS EMPLOYEES, T&P ETC. NECESSARY COORDINATION WITH BESCL OFFICIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO FOLLOW ALL THE PROCEDURES LAID DOWN BY BSECL FOR MAKING GATE PASSES.

### **5.9.9**

BHEL/BSECL MAY INSIST UPON WITNESSING THE REGULAR PAYMENT TO THE LABOUR. THEY MAY ALSO LIKE TO VERIFY THE RELEVANT RECORDS FOR COMPLIANCE WITH STATUTORY REQUIREMENTS. CONTRACTOR SHALL ENABLE SUCH FACILITIES TO BHEL /BSECL.

### **5.9.10**

CONTRACTOR SHALL ALSO COMPLY WITH THE PROVISIONS OF ESI ACT IN VOGUE AND SUBMIT EVIDENCE THEREOF TO BHEL SITE INCHARGE. ALSO ALL OTHER EMPLOYEES BENEFITS TO BE BORNE BY THE CONTRACTOR AS PER THE LABOUR LAWS. CONTRACTOR SHALL PRODUCE NECESSARY CERTIFICATES TOWARDS THEIR COMPLIANCE WITH SUCH STATUTES AND PAYMENT OF ALL STATUTORY DUES.

5.9.11

CONTRACTOR SHALL ALSO COMPLY WITH THE REQUIREMENTS OF LOCAL AUTHORITIES/ PROJECT AUTHORITIES CALLING FOR POLICE VERIFICATION OF ANTECEDENTS OF THE WORKMEN, STAFF ETC.

5.9.12

WHERE PERMITTED, BY BSECL/BHEL, TO WORK BEYOND NORMAL WORKING HOURS, THE CONTRACTOR SHALL ARRANGE NECESSARY GATE PASSES.



## **SECTION-6**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **6.0 CONTRACTOR'S OBLIGATION WITH REGARD TO EMPLOYMENT OF SUPERVISORY STAFF AND WORKMEN**

##### **6.1 SUPERVISORY STAFF AND LABOUR**

###### **6.1.1**

The contractor shall supply all the skilled/unskilled labour, gas cutters, riggers, sarongs, erectors, carpenters, fitters and electricians, masons, plumbers etc. 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 he is found to be unsuitable and the contractor shall forthwith remove him.

###### **6.1.2**

It is the responsibility of the contractor to engage his workmen in shifts and or on overtime basis for achieving the target 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 targets will be final and binding on the contractor.

###### **6.1.3**

Contractor shall employ only qualified and experienced engineers/supervisors for this job. They shall have professional approach in executing the work having adequate knowledge and experience in the fields. Contractor shall give an organisation chart indicating the staffing pattern.

###### **6.1.4**

The contractor shall engage all the unskilled, skilled and specially skilled labourer including brick masons, carpenters, plumbers, electricians, fabricators 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.

#### **6.2 INDUSTRIAL RELATIONS AND LABOUR LAWS**

###### **6.2.1**

An industrial relations supervisor shall coordinate for the implementation of local labour laws, maintenance of records as required by contract labour (regulation and abolition act) and also coordinate with the local labour authorities. Contractor has to ensure minimum wages payment to their labours as per the rule of the state and they have to produce documentary evidence to that effect to BHEL.

###### **6.2.2**

Contractor shall provide the names and details of Engineer/ Supervisors at the time of mobilisation to BHEL as per the proposed organisation chart.

###### **6.2.3**

In case at any time the contractor is not in a position to deploy the required Engineers/Supervisors due to any reason, BHEL shall have the option to deploy their Engineers/supervisors. The expenditure incurred with overheads on this account will be recovered from the contractor's bills.

###### **6.2.4**

The contractor's supervisory staff shall execute the work in the most substantial and workmanlike 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.

#### 6.2.5

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 and in general, 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.

#### 6.2.6

Contractor will deduct the necessary amount from his employees towards provident fund and contribute the equal amount as per Government of India rules. This amount will be deposited regularly to the Provident Fund Commissioner and an account code obtained. Contractor shall submit the above account code duly certified by PF Commissioner to BHEL project in-charge. Also all other employees' benefits are to be borne by the contractor as per statutory laws.

#### 6.2.7

The contractor shall obtain independent Labour License under the Contract Labour (regulation and abolition) Act from the concerned authorities based on the certificate (form-V) issued by the principal employer/customer.

#### 6.2.8

The contractor shall pay for all taxes, fees, license charges, local body clearance, duties, tools, royalty, commissions and other charges, Gate passes which may be leviable on account of his operation in executing the contract. In case BHEL is forced to make any such payments, BHEL shall have the right to recover the same from Contractor's bills.

#### **6.2.9 SITE ORGANIZATION**

**THE CONTRACTOR SHALL PROVIDE ADEQUATE STAFFING IN THE FOLLOWING AREA IN ADDITION TO THE STAFF REQUIREMENT FOR EXECUTION:**

- 1. OVERALL PLANNING, MONITORING & CONTROL & BILLING**
- 2. QUALITY CONTROL & QUALITY ASSURANCE**
- 3. MATERIALS MANAGEMENT**
- 4. SAFETY, FIRE & SECURITY**
- 5. INDUSTRIAL RELATION & FULFILLMENT OF LABOUR LAWS & OTHER STATUTORY OBLIGATIONS.**

## **SPECIAL – 7**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **7.0 OBLIGATIONS OF BHEL**

#### **7.1 FACILITIES TO BE PROVIDED BY BHEL**

**7.1.1 SPACE FOR SITE OFFICE/STORES:- REFER SECTION – 5 IN THIS REGARD**

**7.1.2 CONSTRUCTION POWER & WATER:- REFER SECTION – 5 IN THIS REGARD.**

**7.1.3 OTHER MATERIALS AND CONSUMABLES:-**

BHEL SHALL NOT PROVIDE ANY MATERIAL/CONSUMABLES EXCEPT THOSE SPECIFICALLY MENTIONED AS BHEL SCOPE IN THESE SPECIFICATIONS.

BHEL SHALL NOT BE RESPONSIBLE FOR ANY LOSS OR DAMAGE TO THE CONTRACTOR'S EQUIPMENT AS A RESULT OF VARIATIONS IN VOLTAGE OR FREQUENCY OR INTERRUPTIONS IN POWER SUPPLY.

**7.1.4 CRANES: NO CRANES OF ANY SIZE & CAPACITY SHALL BE PROVIDED BY BHEL WITH RESPECT TO THIS CONTRACT.**

**7.1.5**

BHEL WILL PROGRESSIVELY ISSUE TWO COPIES OF ALL THE APPROVED DRAWINGS REQUIRED FOR CONSTRUCTION. CONTRACTOR SHALL PRESERVE THESE DRAWINGS AND RETURN THE SAME AFTER COMPLETION OF WORK. CONTRACTOR SHALL ALSO RETURN SUPERSEDED DRAWINGS, IF ANY, ON RECEIPT OF THE LATEST REVISED DRAWING.

## **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 construction, 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 BHEL '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.

The protocols between contractor and BHEL shall be made prior to casting of concrete for any foundations/Chimney raft, any other foundations, materials, procedures, at each stage of installation/commissioning, generally as per the requirement of BHEL. This is necessary to ensure elimination of errors or keeping them within tolerable limits and to avoid accumulation and multiplication of errors.

**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 foundations, structures, slip form shuttering and others etc.

All the important measurements like concrete pour card, levels, center line/grid checking,, foundation levels, equipment alignment, etc shall be recorded in the daily logbook with sketches based on BHEL drawings indicating readings/ measurements taken and signed by BHEL and contractor's representatives.

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 civil, electrical/mechanical measuring and monitoring devices/ gauges, theodolites, leveling instruments, 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 constructed chimney at various stages.

The instruments/gauges/tools/levels/theodolite/jacks/hoist 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 construction, 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/level instrument/theodolite 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** **Stage Inspection By FES/QA Engineers**  
Apart from day-to-day inspection by BHEL engineers and MPSEM engineers, stage inspection of CHIMNEY at various stages of construction and commissioning by teams of engineers from field engineering services. Contractor shall arrange all labour, tools and tackles etc, for such stage inspections within their quoted rate. However the successful commissioning of the chimney shall be the bidders' scope of work.
- 8.11.1** Any modifications suggested by FES / FQA engineers team shall be carried out. Claims of contractor, if any, shall be dealt as per clause 13.1 to 13.8.
- 8.11.2** Any minor rectification or minor repairs of defective work found at during stage inspection shall be rectified free of cost, by the contractor.
- 8.11.3** 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 at no extra cost to BHEL.
- 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 including all other arrangements for visiting of statutory authorities at site including fee etc within the quoted rate.
- 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 recalibration. 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 endeavour 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 authorised 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 authorised 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 authorised 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 energised 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 authorised 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 authorised 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 authorised persons holding relevant license will drive and operate site plant and equipments eg cranes, dumpers, excavators, transport vehicles etc

- 9.2.1.15 Only authorised 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, Dshackles 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 victim and/or his/her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL shall have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her 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 authorised 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 mobilisation 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 neighbouring
  - 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 organised 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 focussed
- 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

#### **9.2.4 ENVIRONMENT 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
- 9.3.3 Contractor, supervisor must attend all schedule safety meetings as would be intimated to him by the BHEL Engineer in Charge.
- 9.3.4 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.
- 9.3.5 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.

**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

Sl 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/tacles	To check for defects and efficacy of brakes	User	Daily

			Third party	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 authorised 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 NO.	YEAR	AMD UPTO YEAR	DESCRIPTION
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 4756	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 HOT 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 NO.	YEAR	AMD UPTO YEAR	DESCRIPTION
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

#### 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 case.

#### 10.9 LIST OF TENDER DRAWINGS. IT WILL BE SUPPLIED ON DEMAND (IF ANY).

## SECTION-11

### SPECIAL CONDITIONS

#### 11.0 TIME SCHEDULE - MOBILISATION - PROGRESS AND MONITORING -COMPLETION, ETC.

##### 11.1

THE CONTRACTOR HAS TO MOBILIZE THEIR T & PS LIKE EXCAVATORS AND OTHER EQUIPMENTS, MATERIAL, RESOURCES AND WORK FORCE IN SUCH A MANNER THAT THE ENTIRE WORK OF THE SUBJECT PACKAGE IS COMPLETED WITHIN **22 (TWENTY TWO MONTHS)** FROM THE DATE OF ISSUE OF THE LETTER OF AWARD, HOWEVER **THE TWENTY TWO MONTHS** CONTRACT PERIOD IS FURTHER DIVIDED IN MILESTONES FOR REVIEW & MONITORING OF PROGRESS:

Sl. No.	ACTIVITY	PERIOD FROM DATE OF LETTER OF AWARD
01	COMPLETION OF FULL MOBILISATION, EXCAVATION, PCC, RAFT FOUNDATION COMPLETION, SLIP FORM ASSEMBLY & ERECTION COMPLETION.	FROM 0 TO END OF 5 <sup>TH</sup> MONTH
02	SHELL CONCRETING & ITS (75%-APPROX.) TO BE COMPLETED, PREP. OF DETAILED FAB. DRAWINGS FOR FLOOR BEAMS & BRICK FLUE LINER, FABRICATION OF FLOOR BEAMS & STAIR CASE (60%), FABRICATION OF FLUE LINER (30%)	FROM 6 <sup>TH</sup> TO 12 <sup>TH</sup> MONTHS
03	BALANCE SHELL CONCRETING (25%) TO BE COMPLETED, FABRICATION OF REMAINING FLOOR BEAM & STAIR CASE (40%), BALANCE BRICK FLUE LINER (60%), ERECTION OF ALL FLOOR BEAM & STAIRCASE 100% COMPLETION.	FROM 13 <sup>TH</sup> TO 16 <sup>TH</sup> MONTH
04	REMAINING FLUE LINER (10%) COMPLETION OF ELECTRICAL WORK (30%) & HAND RAILS	FROM 16 <sup>TH</sup> TO 18 <sup>TH</sup> MONTHS
05	CONSTRUCTION OF BALANCE BRICK FLUE LINER (60%), COMPLETION OF BALANCE ELECTRICAL WORKS (70%) COMPLETION OF ALL MISC. WORKS VIZ. FINAL PAINTING, ALL WORKS COMPLETION INCLUDING STATUTORY CLEARANCE, P & G TESTS FOR CHIMNEY ELEVATOR ETC. COMPLETE & HANDED OVER TO BHEL/GSECL.	BY THE END OF 22 <sup>TH</sup> MONTH.

**However the contractor has to make all efforts to complete the RCC TWIN FLUE BRICK LINED chimney as per BHEL boiler light work programmed within quoted rate in line with L-1 schedule.**

**11.1.1 GRACE PERIOD: FOUR MONTHS GRACE PERIOD** SHALL BE GRANTED FOR THIS CONTRACT BEYOND THE CONTRACT PERIOD. HOWEVER THE CONTRACTOR SHALL MAKE ALL OUT EFFORTS TO COMPLETE THE WORK WITHIN 22<sup>TH</sup> MONTHS.

11.2

THE DATE OF COMMENCEMENT FOR THE PURPOSE OF START OF NORMAL COMPLETION SCHEDULE WILL BE THE DATE ON WHICH EXCAVATION WORK IS STARTED AND LAYOUT IS MADE. **FOR THE PURPOSE OF OVERALL COMPLETION, DATE OF START OF EXCAVATION WORK SHALL BE CONSIDERED.**

11.2

THE CONTRACTOR SHOULD REACH SITE AND ESTABLISH HIS SITE OFFICE AND MOBILIZE TO COMMENCE THE WORK AS PER DIRECTIONS OF BHEL ENGINEER. THE DATE OF COMMENCEMENT OF THE WORK SHALL BE THE DATE ON WHICH THE EXCAVATION FOR RAFT FOUNDATION STARTED.

**11.3 CONSTRUCTION SCHEDULE:** - THE CONTRACTOR SHALL FURNISH THE L2/L3 CONSTRUCTION SCHEDULE AREA WISE BASED ON THE ABOVE MILESTONES/L1 SCHEDULE WITHIN 30 DAYS OF ISSUE OF LOI. CONTRACTOR SHALL DRAW MONTHLY COMPLETION PROGRAMME ALONGWITH THE BHEL ENGINEER FOR VARIOUS ACTIVITIES. CONTRACTOR TO ARRANGE ALL THE INPUTS LIKE CEMENT AND ALL OTHER MATERIALS FOR COMPLETION OF THE PROJECT UNDER THIS CONTRCAT IN TOTALITY, PREPARATION OF DETAILED FABRICATION DRAWING BASED ON ENGG. DRAWING ISSUED FROM BHEL – PEM, NEW DELHI, CONSTRUCTION WATER, AND CONSTRUCTION POWER ETC. THE ENTIRE WORK HAS TO BE COMPLETED IN **22 MONTHS**

#### **11.4 PROGRESS AND MONITORING OF WORK:-**

11.4.1

It is the responsibility of the contractor to provide all the relevant information on a regular basis regarding progress of activity/work

11.4.2

THE CONTRACTOR SHALL SUBMIT DAILY, WEEKLY AND MONTHLY PROGRESS REPORTS, MANPOWER REPORTS, MATERIAL CONSUMPTION AND STOCK REPORTS, EQUIPMENT STATUS REPORTS ETC. THE PROGRESS REPORTS SHALL INDICATE THE PROGRESS ACHIEVED AGAINST PLANNED WITH REASONS INDICATING THE DELAYS, IF ANY. THE REPORT SHALL ALSO GIVE THE REMEDIAL ACTIONS WHICH THE CONTRACTOR INTENDS TO MAKE GOOD THE SLIPPAGE OR LOST TIME SO THAT FURTHER WORK PROCEED AGAIN AS PER THE ORIGINAL PROGRAMME AND THE SLIPPAGE DO NOT ACCUMULATE AND AFFECT THE OVERALL PROGRAMME.

11.4.3

ANY OTHER INFORMATION THAT IS REQUIRED FOR DECISION MAKING, PLANNING AND ACTION TAKING, THE CONTRACTOR SHOULD FURNISH THE SAME. THE TENTATIVE FORMAT FOR VARIOUS REPORTS WILL BE PRESCRIBED AT SITE BY BHEL.

11.4.4

THE WORK UNDER THE SCOPE OF CONTRACTOR WILL BE DEEMED TO BE COMPLETE IN ALL RESPECTS ONLY WHEN SO CERTIFIED BY BHEL ENGINEER. THE DECISION OF BHEL IN THIS REGARD SHALL BE FINAL AND BINDING ON THE CONTRACTOR

### 11.5.0

The contractor shall submit daily, weekly and monthly progress reports, manpower reports, material reports, equipment reports, T & P reports etc. The progress reports shall indicate the progress achieved against planned with reasons indicating the delays, if any. The report shall also give the remedial actions, which the contractor intends to make good the slippage or lost time so that further works again proceed as per the original program and the slippage do not accumulate and affect the overall program.

### 11.5.1

Any other information required for decision-making, planning and action taking, the contractor should furnish the same. The tentative format on daily report for labour, tools and plants, equipments, instruments are given in appendix. The other reports on daily, weekly and monthly erection progress shall be furnished as per the formats required by BHEL.

### 11.5.2

The work under the scope of contractor is deemed to be completed in all respects, only when all the activities vide clause 11.1 are completed satisfactorily and so certified by BHEL engineer. The decision of BHEL in this regard shall be final and binding on the contractor.

## **11.6 0 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 REFERRED ELSEWHERE WILL BE MADE CONSIDERING THE AVAILABILITY OF COMPONENTS FOR CIVIL WORK COMPLETION 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:

- A) CIVIL WORK COMPLETION SCHEDULE NOT ACHIEVED OWING TO NON-AVAILABILITY OF FRONTS.
- B) CIVIL WORK COMPLETION SCHEDULE NOT ACHIEVED OWING TO NON-AVAILABILITY OF MATERIALS BY CONTRACTOR.
- C) CIVIL WORK COMPLETION SCHEDULE NOT ACHIEVED OWING TO NON-AVAILABILITY OF TOOLS AND PLANTS, MANPOWER AND CONSUMABLES BY THE CONTRACTOR OR ANY OTHER REASON ATTRIBUTABLE TO THE CONTRACTOR.
- D) CIVIL WORK COMPLETION SCHEDULE NOT ACHIEVED DUE TO ANY OTHER REASONS NOT ATTRIBUTABLE TO THE CONTRACTOR.

## **11.7 CONTRACT EXTENSION:-**

11.7.1 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.

11.7.2 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 NO. 11.4.1 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.



**11.7.3** 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.

#### **11.8 COMPENSATION FOR DELAY:-**

**11.8.1** If the contractor fails to complete the work under the scope of work in this contract/as per tender schedules, within the time specified in the specification or within any extension ( for reasons not attributable to contractor), he shall, without prejudice to any other right or remedy of BHEL on account of such breach, **pay compensation (penalty) to BHEL**. The above agreed compensation shall be a penalty equivalent to 1/2 % (HALF PERCENT) of the total contract price, excluding elements of taxes, duties etc. if any, per week or part thereof of the delay subject to a maximum of 10% (ten percentage) of the total executed price excluding elements of taxes, duties etc. ALSO REFER CL. NO. 2.7 OF GCC.

11.8.2 BHEL shall deduct the amount of such compensation from any money due or which may become due to the contractor and/or recover such compensation from the bank guarantees / security deposit of the contractor. To be entitled to impose such compensation, BHEL will not be required to prove that BHEL has incurred such amount as actual damage.

11.8.3 BHEL reserves the right to purchase from elsewhere on account of and at the risk & cost of the contractor without notice to the contractor of the equipment/materials not so delivered, without cancelling the order/contract in respect of the equipment/materials not yet due for delivery.

11.8.4 BHEL reserves the right to cancel the order/contract or a portion thereof for the stores not so delivered at the risk & cost of the contractor and the contractor shall be liable to BHEL for any excess costs thereof.

11.8.5 The contractor shall continue the performance of the order/contract under all circumstances, to the extent not cancelled. Where action is taken as per above, the contractor shall be liable for any loss, which BHEL may sustain on that account. The contractor shall not be entitled to any gain on such purchase and the manner and the method of such purchase shall be at the discretion of BHEL. It shall not be obligatory on any part of BHEL to serve a notice of such purchase on contractor

#### **11.9.0 PRICE VARIATION:**

IN ORDER TO TAKE CARE OF VARIATION IN THE COST OF EXECUTION OF WORK, ON EITHER SIDE, DUE TO VARIATION IN THE INDEX OF LABOUR, DIESEL AND CEMENT USED IN THE WORK, THE FOLLOWING PRICE VARIATION FORMULA SHALL BE APPLICABLE. **(AS SUCH PVC GIVEN IN GCC CL NO: 2.16 SHALL NOT BE APPLICABLE)**

11.9.1

THE BASIS FOR CALCULATION OF PRICE VARIATION UNDER EACH CATEGORY, THEIR COMPONENT, BASE INDEX/PRICE AND BASE DATE OF ACCOUNTING OF INDEX/PRICE SHALL BE AS UNDER:-

SL.NO	CATEGORY	COMPONENT (K )	BASE INDEX/PRICE	BASE DATE
A)	LABOUR OF ALL CATEGORIES	30%	CONSUMER PRICE INDEX FOR INDUSTRIAL WORKERS (GENERAL), APPLICABLE TO "ALL INDIA" AS PUBLISHED BY LABOUR BUREAU, SHIMLA	<b>BASE DATE SHALL BE LAST DATE OF SUBMISSION OF TENDER (WITH EXTENDED DATE OF TENDER, IF ANY).</b> (It is clarified that in case BHEL issues any clarification/ amendment after tender submission, then date of issue of such clarification/ amendment shall not be considered as base date.)
B)	DIESEL OIL	5%	PRICE OF HS DIESEL AT PUMP OF INDIAN OIL CORPORATION/BPCL/HPCL NEAREST TO THE PROJECT SITE.	-DO-
C)	CEMENT	30%	WHOLE SALE PRICE INDEX FOR CEMENT PUBLISHED BY MINISTRY OF COMMERCE AND INDUSTRY (WWW.EAINDUSTRY.NIC.IN)	-DO-

#### 11.9.2

PAYMENT/RECOVERY DUE TO VARIATION IN INDEX/PRICES SHALL BE DETERMINED ON THE BASIS OF THE FOLLOWING NOTIONAL FORMULA WITHOUT ANY INITIAL ABSORPTION, IN RESPECT OF THE IDENTIFIED COMPONENTS VIZ. LABOUR,CEMENT AND DIESEL.

$$A = K \times R \times \frac{(XN - XO)}{XO}$$

**WHERE**

**A** = AMOUNT TO BE PAID/RECOVERED DUE TO VARIATION IN THE INDEX FOR LABOUR,CEMENT AND DIESEL PRICES .

**K** = PERCENTAGE COMPONENT OF LABOUR, MATERIALS AND DIESEL AS INDICATED IN COLUMN NO.3 ABOVE.

**R** = VALUE OF WORK DONE FOR THE BILLING MONTH

**XN** = REVISED INDEX NUMBER FOR LABOUR, CEMENT AND PRICE FOR DIESEL ON THE DATE SUBSEQUENT TO THE BASE DATE AS INDICATED IN THE COLUMN NO.5 OF THE ABOVE TABLE (I.E. FOR THE WORK BILL MONTH UNDER CONSIDERATION)

**XO** = INDEX NO. FOR LABOUR, CEMENT AND PRICE FOR DIESEL AS ON THE BASE DATE INDICATED IN THE COLUMN NO.5 OF THE ABOVE TABLE.

#### 11.9.3

THE CONTRACTOR SHALL PRODUCE NECESSARY "PRICE LIST" FOR DIESEL FROM NEAREST DIESEL OIL DEALER AND "MONTHLY BULLETINS" ISSUED BY LABOUR BUREAU, SHIMLA AND RBI BULLETINS FOR ALL COMMODITIES FOR APPLICATION OF PRICE VARIATION AS REQUIRED IN THE NOTIONAL FORMULA MENTIONED ABOVE.

#### 11.9.4

THE CONTRACTOR WILL BE REQUIRED TO RAISE THE BILLS FOR PRICE VARIATION ON A MONTHLY BASIS ALONGWITH THE RUNNING BILLS IRRESPECTIVE OF THE FACT WHETHER ANY INCREASE/DECREASE IN THE CONSUMER PRICE INDEX FOR LABOUR, MATERIAL (OTHER THAN ISSUED BY BHEL) AND PRICE OF DIESEL OIL HAS TAKEN PLACE OR NOT. IN CASE IF THERE IS

DELAY IN PUBLICATION OF BULLETINS (FINAL FIGURE), THE PROVISIONAL VALUE AS PUBLISHED CAN BE CONSIDERED FOR PAYMENT/RECOVERY ON ACCOUNT OF VARIATION AND THE ARREARS SHALL BE PAID / RECOVERED ON GETTING THE FINAL VALUES.

11.9.5

PRICE VARIATION SHALL BE APPLICABLE ON THE **REVISED/ENHANCED** RATES (IF ANY), BUT SHALL NOT BE APPLICABLE FOR ANY **EXTRA WORK**.

11.9.6 **VALIDITY PERIOD FOR PVC**

THE ABOVE PVC SHALL BE APPLICABLE FOR TOTAL CONTRACT PERIOD OF **22 MONTHS** PLUS ACCEPTED EXTENDED PERIOD, IF ANY, DUE TO NO FAULT OF CONTRACTOR. PRICE VARIATION DURING THE ENTIRE EXTENDED PERIOD ON CONTRACTOR'S ACCOUNT, IF ANY, WILL BE APPLIED ON THE INDEX FROZEN FOR THE MONTH PRECEDING START OF SUCH EXTENDED PERIOD ATTRIBUTABLE TO THE CONTRACTOR.

11.9.7

THE TOTAL QUANTUM OF PRICE VARIATION SHALL NOT EXCEED FIFTEEN PERCENTAGE (**15%**) OF THE CONTRACT PRICE/AWARDED VALUE OF CONTRACT EXCLUDING EXTRA ITEM OF WORKS (IF ANY)

**11.10. REVISION OF ACCEPTED CONTRACT RATE**

NO. REVISION OF RATES SHALL BE APPLICABLE IN THE EVENT, THE COMPLETION PERIOD IS EXTENDED FOR ANY REASON WHATSOEVER.

**11.11 REVISION OF ACCEPTED CONTRACT RATE:-**

NO. REVISION OF RATES SHALL BE APPLICABLE IN THE EVENT, THE COMPLETION PERIOD IS EXTENDED FOR ANY REASON WHATSOEVER.

**11.12 VARIATION IN CONTRACT PRICE:-**

THE QUANTITIES OF VARIOUS ITEMS MENTIONED IN THIS TENDER ARE APPROXIMATE AND MAY VARY UP TO ANY EXTENT OR MAY BE DELETED ALTOGETHER AND THE CONTRACTOR HAS NO CLAIM ON THIS ACCOUNT THE QUOTED RATE OF EACH ITEM SHALL REMAIN FIRM AS LONG AS THE VARIATION IN THE TOTAL VALUE OF WORK EXECUTED UNDER THIS CONTRACT, INCLUDING EXTRA ITEMS IF ANY, REMAIN WITHIN **PLUS OR MINUS 30 (THIRTY PERCENT)** OF THE CONTRACT VALUE AS PER DESIGN CONSIDERATIONS. THE TENDERER HAS TO KEEP THEIR QUOTED RATES FIRM UP TO VARIATION OF MINUS 30% ON THE BASIC CONTRACT VALUE. IN CASE THE ACTUAL VALUE OF EXECUTED WORK ON COMPLETION OF WORK BECOMES **LESS THAN 70%** OF THE BASIC CONTRACT VALUE THEN THE FOLLOWING METHOD SHALL BE ADOPTED. THE ACTUAL EXECUTED VALUE SHALL BE RAISED BY 7% OF THE EXECUTED VALUE SUBJECT TO THE CONDITION THAT TOTAL VALUE OF WORK EXECUTED PLUS INCREASE BY 7% AS ABOVE SHALL BE LIMITED TO 70% OF THE BASIC CONTRACT VALUE. THE RATE QUOTED SHALL BE FIRM IRRESPECTIVE OF ANY UPWARD VARIATION IN THE CONTRACT PRICE.

IT IS FURTHER CLARIFIED THAT THE ENHANCEMENT/RATE REVISION @ 7% ON THE BASIC RATE AS PER CLAUSE NO. 11.11 SHALL NOT BE ACCOUNTED FOR THE PURPOSE OF OPERATING THIS CLAUSE (CLAUSE NO. 11.12).

11.12.1

THE CONDITIONS STIPULATED VIDE CLAUSES 2.8.3 AND 2.8.4 OF GENERAL CONDITIONS OF CONTRACT INCLUDE WITHIN THEIR PURVIEW ALL TAXES AND DUTIES AND VARIATION IN WAGES/SALARIES /BENEFITS FOR ANY REASON WHATSOEVER WHICH ARE ALL TO BE BORNE BY THE CONTRACTOR.

### **11.13 INTERST BEARING RECOVERABLE ADVANCE.**

Interest bearing (rate of interest will be 1% per annum more than bank interest rate, 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 within the contract period (including extensions granted or foreclosure if any).

### **11.14 SECURED ADVANCE:**

Interest free secured advance up to a maximum 75% of the value as given in paid up purchase voucher (Without transportation/Freight charges) of the following materials required for incorporation in the permanent works and brought at site duly certified by Engineer shall be payable to the contractor.

- a) Cement.
- b) Steel (Access doors/rolling shutters/louvers/hand rails/mild steel etc.)
- c) MS, CI & GI rain water pipes
- d) Acid resistance tiles and mortars
- e) Rock wool insulation materials
- f) Tar felt materials
- g) HT/HSFG Bolts, Nuts, Washers etc. and gratings.
- h) Anchor fasteners.
- i) Paints
- j) Electrical items

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.

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

## SECTION-12

### SPECIAL CONDITIONS

#### 12.0 TERMS OF PAYMENT

##### 12.0.1

The contractor shall submit his monthly on account bills with all the details required by BHEL on specified date every month covering progress of work in all respects and areas from the 25<sup>th</sup> of previous calendar month to 24<sup>th</sup> of the current month.

##### 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 PROGRESSIVE PAYMENT FOR CIVIL, STRUCTURAL AND ARCHITECTURAL WORK.**

THE PERCENTAGE OF PAYMENT FOR PROGRESSIVE COMPLETION OF WORK IN VARIOUS CATEGORIES OF WORK SHALL BE AS UNDER:

##### **12.1.1 CIVIL AND ARCHITECTURAL WORK**

100% OF ITEM RATE ON PRORATA BASIS AGAINST MONTHLY RA BILLS.

##### **12.1.2 STRUCTURAL WORK**

100% OF ITEM RATE ON PRORATA BASIS AGAINST MONTHLY RA BILLS AS FOLLOWS.

AS PER SCHEDULE OF RATE FOR ITEM NO. COMPOSITE RATE FOR ITEM NO., WHICH CAN BE FURTHER BREAK UP AS FOLLOWS:-

- A) FABRICATION:** 60% OF THE QUOTED COMPOSITE RATE
- (B) ERECTION:** 25% OF THE QUOTED COMPOSITE RATE
- (C) WELDING & ALIGNMENT:** 15% OF THE QUOTED COMPOSITE RATE

##### **12.1.3 ELECTRICAL WORKS**

- A) SUPPLY OF ELECTRICAL ITEMS:** 60% OF THE QUOTED COMPOSITE RATE
- B) ERECTION/INSTALLATION/LAYING:-** 25% OF THE QUOTED COMPOSITE RATE
- C) TESTING AND COMMISSIONING:** 15 % OF THE QUOTED COMPOSITE RATE

#### **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 **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.

**Contractor should submit all relevant documents as being mentioned in the Check List. Bidder must visit BHEL Web site( [www.bhel.com](http://www.bhel.com)) for NIT and submit the relevant documents as mentioned there.**

## **SECTION-14**

### **SPECIAL CONDITIONS OF CONTRACT**

#### **14.0 Insurance**

##### **14.1**

Contractor shall obtain necessary insurance cover for the staff, labourers, Tools & Plants, Construction Machineries and all other properties belonging to him. Copy of the Workmen Compensation policy shall be submitted to BHEL for record before start of work.

##### **14.2**

BHEL will obtain a Marine and Erection All Risk (combined called MCE) insurance cover for the power project. This will cover the construction materials and the constructed work under the scope of this Tender Specification. It may be noted that minimum compulsory excess (Deductible Franchise) as applicable for Storage and Erection as per regulatory authority's (TAC) guidelines shall be applicable for this EAR policy. It shall be the responsibility of the contractor to absorb the cost of replacement of any loss or damage in storage and/or construction to the extent disallowed by the insurance company either due to summary rejection of the claim or on account of compulsory excess (DF).

##### **14.3**

In case of theft / damage / loss of materials, poor storage facility of materials like cement & any other project related materials vulnerable to external environment like rain etc. due to negligence or failure attributable to the contractor, the expenses incurred on account of repair/ replacement of such components in excess of the amount realized from the underwriters shall be recovered from the contractor limited to Normal Deductible Franchise (DF) / Excess as per applicable Insurance (TAC) tariff 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.

#### **14.4 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.



## SECTION-15

### SPECIAL CONDITIONS OF CONTRACT

#### 15.0 Earnest Money Deposit (EMD) & Security Deposit (SD)

##### 15.1 Earnest Money Deposit:

**15.1.1** Earnest Money is to be paid by each tenderer to ensure that the tenderer does not refuse to execute the work after it is awarded to him. **The Earnest Money Deposit shall be Rs. 2,00,000/- (Rupees two lakhs).**

One time EMD will be Rs. 2 lakhs.

**EMD is to be collected in cash (as permissible under Income Tax Act), Pay order or Demand Draft only.**

**15.1.2** EMD by the Tenderer will be forfeited as per Tender Documents if,

- i) After opening the tender, the tenderer revokes his tender within the validity period or increases his earlier quoted rates.
- ii) The tenderer 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.

**15.1.3** EMD shall not carry any interest.

##### 15.2 Security Deposit

**15.2.1** Security Deposit should be collected from the successful tenderer. The rate of Security Deposit will be as below:

Value of Work	Rate of EMD
Upto Rs. 10 lakhs	10%
Above Rs. 10 lakhs upto Rs.50 lakhs	1 lakh + 7.5% of the amount exceeding Rs. 10 lakhs.
Above Rs. 50 lakhs	Rs 4 lakhs + 5% of the amount exceeding Rs. 50 lakhs

The Security Deposit shall be collected 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.
- i) 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).

Bank Guarantee from Scheduled Banks/Public Financial Institutions as defined in the Companies Act subject to a maximum of 50% of the total security deposit value. The balance 50% has to be remitted either by cash or in the other form of security. The Bank Guarantee format should have the approval of BHEL.

- ii) Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/c BHEL, duly discharged on the back.
- iv) 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 furnished in the form of BG or DD by the Contractor before start of the work and the balance 50% may be recovered from the running bills. ( **Bank Guarantee for security deposit should be valid for completion date plus six month claim period** )
- iii) EMD of the successful tenderer may be converted and adjusted against the security deposit or specific request by the contractor.
- iv) 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.**

## APPENDIX- II

### MONTHWISE MANPOWER DEPLOYMENT PLAN (CATEGORYWISE NUMBERS TO BE INDICATED FOR EACH MONTH)

SL. NO.	CATEGORY							22M O N T H S				
	1	2	3	4	5	6	7	8	9	10-----22TH		
01	RESIDENT ENGINEER											
02	ENGINEER											
03	SUPERVISORS											
04	MATERIALS MANAGEMENT SUPERVISORS											
05	WELDERS											
06	PLUMBERS											
07	CARPENTERS											
08	BAR BENDERS											
09	TRUCK/TRAILER DRIVERS/ CONCRETE MIXER OPERATORS											
10	STORE KEEPERS											
11	ELECTRICIANS											
12	HELPERS/SEMISKILLED WORKERS											
13	MASONS											
MONTHWISE TOTAL												

SIGNATURE OF THE TENDERER

DATE:

**Bidder must submit manpower deployment plan for total contract period that should also be inclusive of above manpower as per above format ( Use Separate Sheet as required )**

APPENDIX-II  
ANALYSIS OF UNIT RATE QUOTED

SL. NO.	DESCRIPTION	% OF UNIT RATE QUOTED	REMARKS (IF ANY)
01	SITE FACILITIES VIZ., ELECTRICITY, WATER, WORKSHOP AND OTHER INFRASTRUCTURE		
02	CEMENT, STEEL, STRUCTURES, AND ALL MATERIALS		
03	SALARY & WAGES		
04	CONSUMABLES		
05	DEPRECIATION & MAINTENANCE FOR T&P AND OTHER ITEMS		
06	ESTABLISHMENT & ADMINISTRATION EXPENSES OF SITE		
07	RETRENCHMENT BENEFIT		
08	OVERHEADS		
09	PROFIT		
	TOTAL	<b>100%</b>	

DATE:

SIGNATURE OF THE TENDERER

### APPENDIX- III

#### LIST OF TOOLS AND PLANTS TO BE DEPLOYED FOR RCC MULTI FLUE CHIMNEY

#### A) T &Ps FOR STRUCTURAL WORKS

SL.No.	Major T&P items	Qty
1.	Hydra (8 / 10 T Cap.)	01Nos.
2.	Drill M/C NW 10	20Nos.
3.	Welding m/c	80Nos.
4.	GRINDING MACHINE	50Nos.
5.	Pug cutting m/c	02Nos.
6.	HAND CUTTING SET	40Nos.
7.	STATIONERY OVEN	01Nos.
8.	PORTABLE OVEN	06Nos.
9.	Chain pulley of different capacity	10Nos.
10.	ELECTRIC WINCH OF DIFFERENT CAPACITY	04Nos.
11.	DG SET OF 250KVA	01Nos.
12.	HAND WINCH 5T CAP.	04Nos.
13.	SCREW JACK	06Nos.
14.	15T/20T TRACTOR & TRAILOR	02Nos.
15.	AIR COMPRESSOR OF REQD CAPACITY FOR SAND BLASTING	02Nos.
16.	Radiography sources	01Nos.
	<b>T &amp; Ps FOR CIVIL WORKS</b>	
	SLIPFORM SHUTTERING WITH ALL ACCESSORIES LIKE HYD. JACKS OF REQUIRED CAPACITY, JACKING RODS, POWER PACK SYS., ETC. COMPLETE	01 SET
01	Automatic Batching Plant (30 Cum/Hr)	01Nos..
02	Mini batching plant immediate required for PCC works	01Nos.
03	Transit mixer	04Nos.
04	Concrete Pump (30 Cum/Hr min capacity & lift 70M)	01Nos.
05	Air Compressor	01Nos.
06	Wagon drill machine	02Nos.
07	Self priming Dewatering pump 5 HP (Diesel/Electric)	02Nos.
08	Submersible Dewatering pump 5 HP	02Nos..
09	Submersible Dewatering pump 10HP	01Nos.
10	Self priming Dewatering pump 10 HP	02Nos..
11	Sludge Pump – Submersible	02Nos..
12	High lift Curing pump for Chimney shell	02Nos.
13	Hydraulic Excavator /Poclain with rock breaker attachment (mule/rock breaker as per requirements)	01Nos
14	Hydraulic Excavator /Poclain	01Nos..
15	JCB	01os..
16	Ply Shuttering board with adequate supporting structure – 2500 Sqm. (Old steel shuttering plates will not be allowed).	As per requirement.

17	Ply shuttering board with adequate supporting arrangement – another 1500 Sqm. (Old steel shuttering plates will not be allowed).	As per requirement
18	Dumper	03Nos.
19	Reinforcement bending machine	01Nos.
20	Reinforcement cutting machine	01Nos.
21	RM MS scaffolding pipe	20000RM
22	. Power driven earth rammer	02Nos.
23	Vibromax (earth compacter)	01Nos.
24	a) Compression testing machine (200 T cap.)	01Nos..
	b) Other civil lab equipment	Within 30 days.
25	a) 03 Nos. Electric Winch with hoist	Within 75 days.
	b) Balance winches as per requirement	
26	Total Station	01Nos.
27	Auto level & staff	01Nos.
28	DG set ( 250KVA)	01Nos.
	<b>or</b>	
	DG set ( 125 KVA)	02 nos.
29	Concrete Cube Moulds	72Nos.
30	Hydra Crane	02Nos.
31	02 Nos. Trailors/tractor	02Nos.
32	Road Roller	01Nos.

**Note :- Any other T&Ps required for completion of work in totality may be arranged by the successful bidder without any financial burden to BHEL within their quoted rate.**

**Bidder must submit T&P deployment plan inclusive of all above T&Ps as per format Annex – VIII & IX for complete contract period .**

## Appendix -V

**Civil Laboratory: The Contractor should establish their own civil laboratory and the lab. Should be equipped with following equipments.**

<b>Sr.no.</b>	<b>Description of equipment</b>	<b>QTY</b>	<b>Remarks</b>
<b>01</b>	<b>Cube Testing Machine</b>	<b>02Nos.</b>	
<b>02</b>	<b>Cube moulds (15cm)</b>	<b>30Nos.</b>	
<b>03</b>	<b>Sieve sets for Coarse &amp; fine aggregates</b>		<b>As required per relevant IS code.</b>
<b>04</b>	<b>Electrical oven</b>	<b>01Set</b>	
<b>05</b>	<b>Measuring jars for various capacity</b>		<b>As required</b>
<b>06</b>	<b>Weights</b>		<b>As required</b>
<b>07</b>	<b>Physical balance</b>	<b>01Nos.</b>	
<b>08</b>	<b>Slump Testing Cone</b>	<b>02Nos.</b>	
<b>09</b>	<b>Welding bend test machine</b>	<b>01Nos.</b>	

<b>Sr.no.</b>	<b>Description of equipment</b>	<b>QTY</b>	<b>Remarks</b>
<b>10</b>	<b>Ultrasonic machine</b>	<b>01Nos.</b>	
<b>11</b>	<b>Proctor Density test equipment</b>	<b>01Nos.</b>	
<b>12</b>	<b>Impact test, Crushing strength &amp; Absorption test machine, flaky index testing equipment for coarse aggregate.</b>	<b>Each 01 nos.</b>	
<b>13</b>	<b>Other misc. items/equipments.</b>		

**Bidder must submit T&P deployment plan inclusive of all above T&Ps as per format Annex – X for complete contract period .**





## APPENDIX-VI

### DETAILS OF CURRENT COMMITMENTS

Sr. No	Description of work	W.O. No. & date	Contract Value	Schedule date of Completion	Act. Date of completion	Status	Remark

**Please attach separate sheet if required.**

**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								
7								
8								
9								

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

DATE

SIGNATURE OF TENDERER WITH SEAL

## APPENDIX-VIII

**FORMAT FOR DEPLOYMENT PLAN FOR MAJOR TOOLS AND PLANTS FOR PILING EQUIPMENTS AS GIVEN IN APPENDIX-I**

**\* USE ADDITIONAL SHEETS TO COVER THE TOTAL CONTRACT PERIOD**

[illegible]

## APPENDIX-IX

**FORMAT FOR DEPLOYMENT PLAN FOR MAJOR TOOLS AND PLANTS FOR CIVIL & STRUCTURAL EQUIPMENTS AS GIVEN IN APPENDIX-IV**

**\* USE ADDITIONAL SHEETS TO COVER THE TOTAL CONTRACT PERIOD**

[illegible]

## APPENDIX-X

**\* USE ADDITIONAL SHEETS TO COVER THE TOTAL CONTRACT PERIOD**

[illegible]