

TENDER SPECIFICATION

No. BHE/PW/PUR/KNT-EP7/490

FOR

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTING TO SITE OF WORK, PRE-ASSEMBLY, ERECTION, TESTING AND ASSISTANCE FOR COMMISSIONING AND HANDING OVER OF ELECTROSTATIC PRECIPITATOR, FLUE GAS DUCT FROM BOF TO CHIMNEY, ASSOCIATED SUPPORTING STRUCTURES, PLATFORMS, GALLERIES AND STAIRWAYS OF UNIT No. -7

AT

KORBA SUPER THERMAL POWER STATION

OF

NTPC Limited

KORBA, C.G.

PART: I

(TECHNICAL BID SPECIFICATION, NOTICE INVITING TENDER and GCC)



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

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LEGEND:

- \$:** PLACED BEFORE 'GENERAL CONDITIONS OF CONTRACT' IN BOTH HARD AND SOFT COPY DOCUMENTS.
- #:** ATTACHED AT THE END OF HARD COPY OF TENDER SPECS. PART-I (TECHNICAL BID) AND AS A SEPARATE FILE TITLED '**WEB_NIT_GCC**' AS SOFT COPY HOSTED IN WEB PAGE.
- @:** ISSUED AS SEPARATE BOOKLET IN HARD COPY AS **PRICE BID (PART-II)** AND AS SEPARATE FILE TITLED 'PRICE_BID' AS SOFT COPY HOSTED IN WEB PAGE.

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

TENDER SPECIFICATION NO. - BHE/PW/PUR/KNT-EP7/490

OF

HANDLING AT SITE STORES/STORAGE YARD, TRANSPORTING TO SITE OF WORK, PRE-ASSEMBLY, ERECTION, TESTING COMMISSIONING AND HANDING OVER OF ELECTROSTATIC PRECIPITATOR, FLUE GAS DUCT FROM BOF TO CHIMNEY, ASSOCIATED SUPPORTING STRUCTURES, PLATFORMS, GALLERIES AND STAIRWAYS OF UNIT No. -7, AT KORBA SUPER THERMAL POWER STATION, OF **NTPC Limited KORBA, C.G.**

Earnest Money Deposit: Please see Special Conditions of Contract.

Last date and time for Tender Submission: Please obtain updated information from

web page www.bhel.com ® **Tender**

Notifications ® **View Corrigendum.**

These tender documents containing **Part- I** Technical Bid and **Part- II** Price Bid are issued to:

PLEASE NOTE:

- 1) **THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.**
- 2) **BIDDER SHALL NOTE THAT THEIR OFFER WILL BE CONSIDERED SUBJECT TO THE APPROVAL OF BHEL'S CUSTOMER.**

M/s

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(THESE TENDER DOCUMENTS ARE NOT TRANSFERABLE)

FOR BHARAT HEAVY ELECTRICALS LIMITED

DGM (PURCHASE)

PLACE: NAGPUR

DATE:

Procedure for Submission of Sealed Tenders & Instructions to Bidders

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

Part-I (Technical Bid) Cover-I:

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

Part-II (Price Bid) Cover-II:

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

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

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

Bidder is requested to make specific note of the following conditions:

1. Contractor should have adequate resources including major T&P at his disposal for this job.
2. Contractor should have sound financial stability.
3. Bidder should meet quality requirement regarding workmanship, deployment of personnel, erection tools and necessary inspection, measurement & testing instruments.
4. All information as called for in various appendices and clauses of tender specification should be furnished in completeness. Please refer the checklist.
5. Clarification on Tender Specifications, if any, shall be obtained by the bidder before submitting their offer.
6. Offers must be submitted without any deviation.
7. Offers received with any deviation or without relevant information as described above are liable to be rejected. Price bids received in the form other than specified in part-II (price bid) are liable to be rejected.
8. **Bidder shall note that their offer will be considered subject to the approval of BHEL's customer.**

PROJECT INFORMATION

1.00.00 BACKGROUND

KORBA SUPER THERMAL POWER PROJECT, STAGE-III (1X500MW), A PIT HEAD COAL BASED THERMAL POWER PROJECT, IS LOCATED IN KORBA DISTRICT OF CHHATTISGARH STATE. STAGE-I (3X200 MW) AND STAGE-II (3X500 MW) OF THE PROJECT ARE UNDER COMMERCIAL OPERATION. BASIC INPUTS I.E, COAL, WATER AND LAND HAVE ALREADY BEEN TIED UP. THE PROJECT IS PROPOSED TO BE IMPLEMENTED AS MERCHANT PLANT FOR THE BENEFITS OF STATES AND UTS OF WESTERN REGION.

1.01.00 LOCATION AND APPROACH

THE SITE IS LOCATED ON THE WESTERN BANK OF RIVER HASDEO NEAR KORBA TOWN IN KORBA DISTRICT OF CHHATTISGARH STATE. THE SITE IS CONTIGUOUS TO THE RIGHT BANK IRRIGATION CANAL ORIGINATING FRO HASDEO BARRAGE. BALCO'S ALUMINIUM PLANT AND TWO POWER STATIONS ARE ALREADY LOCATED ON BOTH THE BANKS OF HASDEO RIVER IN THE VICINITY.

KORBA TOWN IS A BROAD GAUGES RAILHEAD 37 KMS. AWAY FROM CHAMPA RAILWAY STATION ON CALCUTTA-NAGPUR MAIN LINE OF SOUTH-EASTERN CENTRAL RAILWAY AND IS APPROXIMATELY 510 KMS. FROM NAGPUR BY RAIL. THE SITE IS VERY CLOSE TO ALL WEATHER ROAD BETWEEN KATGHORA & KORBA AND IS APPROXIMATELY 110 KMS FROM BILASPUR AND 10 KMS FROM KORBA TOWN. THE NEAREST AIRPORT IS RAIPUR LOCATED AT A DISTANCE OF APPROXIMATELY 250 KMS. FROM THE PROJECT SITE.

CHECK LIST

(Vide Para 1.3 Of Section-I 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 Due Date)	Validity _____ days
6	Mobilization Time (Please refer Section-11 of SCC)	Mobilization Time _____
7	Whether any conditions stipulated?	Yes (vide Document reference: No Bidder to note that tender with conditions unacceptable to BHEL shall be rejected.
8	Bidder has visited the project site and acquainted with the site conditions	Yes No
9	Details of concurrent jobs are furnished (Appendix-VII)	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 (Annexure 'A' of GCC) is furnished	Yes No
14	Profit & Loss Account for preceding three years is furnished	Yes No

(Vide Para 1.3 Of Section-I of General Conditions Of Contract)			
15	Latest Certificate by Bidder's Banker for Overdraft & BG Limits is Furnished (Certificate shall not be older than six months from the Last Date for offer submission)	Yes	No
16	Latest copy of IT Return along with copy of PAN Card are Furnished	Yes	No
17	Month-wise Manpower Deployment Plan (Appendix – V) is furnished	Yes	No
18	Analysis of unit rates quoted (Appendix-IV) is furnished	Yes	No
19	Month wise deployment plan for major T&P (Appendix-VI) is furnished	Yes	No
20	Whether all the pages of the Tender Specification documents are read, understood and signed	Yes	No
21	Power of Attorney Enclosed in favour of Person Making Offer	Yes	No
22	Bidder has familiarized himself with all Relevant Local Laws & Local Conditions	Yes	No
23	Safety Requirement of this work in a Running plant Premises has been understood.	Yes	No
24	Erection and Commissioning programme furnished	Yes	No
	List of Jobs completed in last seven years is furnished (Appendix-VIII)	Yes	No
25	Whether copies of detailed Work Orders (with BOQ) and Completion Certificates in support of above furnished	Yes	No
26	Whether contractor has left any job unfinished? If so, give reasons.	Yes	No
27	Whether any client has terminated the contractor's work before completion? If so, furnish reasons for the same	Yes	No

Note: strike off yes or no, as applicable

Date:

Signature of Bidder

DECLARATION BY AUTHORIZED SIGNATORY OF BIDDER

I, _____, HEREBY CERTIFY THAT ALL THE INFORMATION AND DATA FURNISHED BY ME WITH REGARD TO THIS TENDER SPECIFICATION No. **BHE/PW/PUR/KNT-EP7/490** ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE. I HAVE 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 WITH THE OFFER.**

TENDERER'S NAME AND ADDRESS

AUTHORISED REPRESENTATIVE'S SIGNATURE WITH

DATE:

NAME AND ADDRESS

CERTIFICATE OF NO DEVIATION

TENDER SPECIFICATION NO.- BHE/PW/PUR/KNT-EP7/490

I/WE, M/s

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

Date:

Signature of the Bidder

SECTION-3
OFFER OF THE CONTRACTOR

To,
SR. MANAGER (PURCHASE)
BHARAT HEAVY ELECTRICALS LIMITED
POWER SECTOR - WESTERN REGION
SHREEMOHINI COMPLEX
345, KINGSWAY
NAGPUR 440001

DEAR SIR,

I/WE HEREBY OFFER TO CARRY OUT THE WORK DETAILED IN **TENDER SPECIFICATION No. BHE/PW/PUR/KNT-EP7/490** 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 LISTED 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 REMITTED HERewith THE EARNEST MONEY DEPOSIT OF Rs. 2, 00,000/- (RUPEES TWO LAKH ONLY) DETAILS OF EMD PAYMENT ARE FURNISHED IN THE CHECK LIST.

EMD SHALL BE REFUNDED SHOULD OUR OFFER NOT BE ACCEPTED / EMD **NEED NOT BE REFUNDED AND THE AMOUNT MAY BE TREATED AS "ONE TIME EMD" FOR ERECTION AND COMMISSIONING TENDERS OF BHEL-PSWR, NAGPUR.** SHOULD OUR OFFER BE ACCEPTED, I/WE FURTHER AGREE TO DEPOSIT SECURITY DEPOSIT FOR THE WORK AS PROVIDED FOR IN THE TENDER SPECIFICATION WITHIN THE STIPULATED TIME AS MAY 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.			
2.			

SECTION-4

SPECIAL CONDITIONS OF CONTRACT

4.0 DETAILED SCOPE OF WORK COVERED UNDER THIS TENDER SPECIFICATION

THE WORK TO BE CARRIED OUT UNDER THE SCOPE OF THESE SPECIFICATIONS IS BROADLY AS UNDER:

- 1) COLLECTION OF MATERIAL FROM BHEL'S/CUSTOMER'S STORES/STORAGE YARD
- 2) TRANSPORTATION TO SITE OF WORK/ PRE -ASSEMBLY
- 3) PRE-ASSEMBLY, IF ANY, PRE-ERECTION CHECKS
- 4) ERECTION, ALIGNMENT AND WELDING/BOLTING/FASTENING, GROUTING ETC;
- 5) NON-DESTRUCTIVE EXAMINATION
- 6) LEAKAGE TEST OF ESP, DUCTS AND OTHER SIMILAR ENCLOSURES
- 7) PRE-COMMISSIONING CHECKS/TESTS, TRIAL RUN/TESTING AND COMMISSIONING
- 8) TRIAL OPERATION AND PERFORMANCE GUARANTEE TEST
- 9) HANDING OVER OF THE UNIT

THE WORK SHALL CONFORM TO DIMENSIONS AND TOLERANCES SPECIFIED IN THE VARIOUS DRAWINGS/DOCUMENTS THAT WILL BE PROVIDED DURING VARIOUS STAGE OF ERECTION. IF ANY PORTION OF WORK IS FOUND TO BE DEFECTIVE IN WORKMANSHIP, NOT CONFORMING TO DRAWINGS OR OTHER STIPULATIONS DUE TO CONTRACTOR'S FAULT, THE CONTRACTOR SHALL DISMANTLE AND RE-DO THE WORK DULY REPLACING THE DEFECTIVE MATERIALS AT HIS COST, FAILING WHICH THE WORK WILL BE GOT DONE BY ENGAGING OTHER AGENCIES AND RECOVERIES WILL BE EFFECTED FROM THE CONTRACTOR'S BILLS TOWARDS EXPENDITURE INCURRED INCLUDING DEPARTMENTAL OVERHEADS OF BHEL.

THE SCOPE OF WORK IS FURTHER DETAILED IN THE SPECIFICATIONS HERE IN AFTER.

4.0.1

THE INTENT OF SPECIFICATION IS TO PROVIDE ERECTION SERVICES ACCORDING TO THE MOST MODERN AND PROVEN TECHNIQUES AND CODES. THE OMISSION OF SPECIFIC REFERENCE TO ANY METHOD, EQUIPMENT OR MATERIAL NECESSARY FOR PROPER AND EFFICIENT ERECTION AND COMMISSIONING OF THE PLANT SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF PROVIDING SUCH FACILITIES TO COMPLETE THE WORK WITHOUT ANY EXTRA COMPENSATION.

4.0.2

THE RATES QUOTED SHALL BE INCLUSIVE OF ALL COST TOWARDS NDE INCLUDING RADIOGRAPHIC EXAMINATION ETC.

4.0.3

THE TERMINAL POINTS DECIDED BY BHEL SHALL BE FINAL AND BINDING ON THE CONTRACTOR FOR DECIDING THE SCOPE OF WORK AND EFFECTING PAYMENT FOR THE WORK DONE.

4.0.4

THE WORK SHALL BE EXECUTED UNDER THE USUAL CONDITIONS AFFECTING MAJOR POWER PLANT CONSTRUCTION AND IN CONJUNCTION WITH NUMEROUS OTHER OPERATIONS AT SITE. THE CONTRACTOR AND HIS PERSONNEL SHALL COOPERATE WITH PERSONNEL OF CUSTOMER'S, CONTRACTOR'S, COORDINATING HIS WORK WITH OTHERS AND PROCEED IN A MANNER THAT SHALL NOT DELAY OR HINDER THE PROGRESS OF WORK AS A WHOLE.

4.0.5

CONTRACTOR SHALL ERECT AND COMMISSION ALL THE EQUIPMENTS AND AUXILIARIES AS PER THE SEQUENCE & METHODOLOGY PRESCRIBED BY BHEL. THE BHEL ENGINEER DEPENDING UPON THE TECHNICAL REQUIREMENTS, AVAILABILITY OF MATERIALS AND FRONTS WILL DECIDE THIS. NO CLAIMS FOR EXTRA PAYMENT FROM THE CONTRACTOR WILL BE ENTERTAINED ON THE GROUND OF DEVIATION FROM THE METHODS ADOPTED IN ERECTION OF SIMILAR SETS ELSEWHERE.

4.0.6

THE WORK COVERED UNDER THIS SPECIFICATION IS OF HIGHLY SOPHISTICATED NATURE, REQUIRING THE BEST QUALITY WORKMANSHIP, ENGINEERING AND CONSTRUCTION MANAGEMENT. THE CONTRACTOR SHOULD ENSURE SUCCESSFUL AND TIMELY COMPLETION OF THE WORK. THE CONTRACTOR MUST DEPLOY ADEQUATE QUANTITY OF TOOLS, CONSTRUCTION AIDS, EQUIPMENT ETC. HE MUST ALSO DEPLOY ADEQUATE TRAINED, QUALIFIED AND EXPERIENCED SUPERVISORY STAFF AND SKILLED PERSONNEL.

4.0.7

ALL NECESSARY CERTIFICATES AND LICENSES, PERMITS & CLEARANCES REQUIRED TO CARRY OUT THIS WORK ARE TO BE ARRANGED BY THE CONTRACTOR EXPEDITIOUSLY AT HIS COST IN TIME TO ENSURE SMOOTH PROGRESS OF WORK.

4.0.8

ALL CRANES, TRANSPORT EQUIPMENT, HANDLING EQUIPMENT, TOOLS, TACKLES, FIXTURES, EQUIPMENT, MATERIALS, MANPOWER, SUPERVISORS/ENGINEERS, CONSUMABLES ETC., EXCEPT OTHERWISE SPECIFIED AS BHEL SCOPE OF FREE ISSUE, REQUIRED FOR THIS SCOPE OF WORK SHALL BE PROVIDED BY THE CONTRACTOR. ALL EXPENDITURE INCLUDING TAXES AND INCIDENTALS IN THIS CONNECTION WILL HAVE TO BE BORNE BY HIM UNLESS OTHERWISE SPECIFIED IN THE RELEVANT CLAUSES. THE CONTRACTOR'S QUOTED RATES SHOULD BE INCLUSIVE OF ALL SUCH CONTINGENCIES.

4.0.9

DURING THE COURSE OF ERECTION, TESTING AND COMMISSIONING CERTAIN REWORK/ MODIFICATION/ RECTIFICATION/ REPAIR/ FABRICATION ETC., WILL BE NECESSARY ON ACCOUNT OF FEED BACK FROM VARIOUS POWER STATION UNITS ALREADY COMMISSIONED AND/ OR UNITS UNDER ERECTION AND COMMISSIONING AND ALSO ON ACCOUNT OF DESIGN DISCREPANCIES OR MANUFACTURING DEFECTS AND SITE OPERATION/ MAINTENANCE REQUIREMENTS. THIS WILL ALSO INCLUDE MODIFICATIONS/ RE-WORKS SUGGESTED BY FES/ OTHER INSPECTION GROUP ETC. CONTRACTOR SHALL CARRY OUT SUCH REWORK/ MODIFICATION/ RECTIFICATION/ FABRICATION/ REPAIR ETC., PROMPTLY AND EXPEDITIOUSLY. DAILY LOG SHEETS SIGNED BY BHEL ENGINEER AND INDICATING THE RECORDS OF WORK CARRIED OUT, MAN-HOURS ETC. SHALL BE MAINTAINED BY THE CONTRACTOR.

PAYMENTS FOR EXTRA WORKS WILL BE REGULATED ACCORDING TO SPECIAL CONDITIONS OF CONTRACT, SECTION-13 OF THIS TENDER SPECIFICATION.

4.0.10

ALL WORKS SUCH AS CLEANING, LEVELING, ALIGNING, TRIAL ASSEMBLY, DISMANTLING OF CERTAIN EQUIPMENTS/ COMPONENTS FOR CHECKING AND CLEANING, SURFACE PREPARATION, FABRICATION OF SHEETS, TUBES AND PIPES AS PER GENERAL ENGINEERING PRACTICE AND AS PER BHEL ENGINEER'S INSTRUCTIONS AT SITE, CUTTING, WELD DEPOSITING, GRINDING, STRAIGHTENING, CHAMFERING, FILING, CHIPPING, DRILLING, REAMING, SCRAPPING, LAPPING, FITTING UP ETC., AS MAY BE APPLICABLE IN SUCH ERECTION WORKS AND WHICH ARE TREATED INCIDENTAL TO THE ERECTION WORKS AND NECESSARY TO COMPLETE THE WORK SATISFACTORILY, SHALL BE CARRIED OUT BY THE CONTRACTOR AS PART OF THE WORK.

4.0.11

INTERCONNECTION/ HOOKUP, IF ANY, WITH THE EXISTING SYSTEM SHALL FORM PART OF WORK. SUCH INTERCONNECTIONS, HOOKUPS MAY REQUIRE SHUT DOWN OF RUNNING PLANT AND THE RELEVANT WORK HAVE TO BE COMPLETED WITHIN SUCH PLANNED SHUTDOWNS. THIS MAY

CALL FOR WORKING WITH ENHANCED RESOURCES AND ON EXTENDED HOURS. CONTRACTOR'S OFFER SHALL COVER ALL SUCH CONTINGENCIES.

4.0.12

THE CONTRACTOR SHALL PROVIDE, EXCEPTING THOSE SPECIFICALLY INCLUDED IN BHEL SCOPE, ALL FIXTURES, CONCRETE BLOCK SUPPORTS, WOODEN SLEEPERS, STEEL STRUCTURES REQUIRED FOR JIGS & FIXTURES, TEMPORARY SUPPORTS, ANCHORS FOR LOAD AND GUIDE PULLEYS ETC REQUIRED FOR THE WORK.

4.0.13

THE ROAD LENGTH TO STORAGE YARD FROM THE PROJECT SITE IS ABOUT 4-5 KM. **THERE IS AN UNLOADING BAY FOR CONSIGNMENTS ARRIVING ON RAILS WHICH IS ABOUT 2 KM FROM STORAGE YARD.** THESE ARE APPROXIMATE DISTANCES ANY VARIATION IN THESE DISTANCES SHALL NOT ENTITLE CONTRACTOR ANY ADDITIONAL COMPENSATION OR ANY CLAIM OF ANY KIND.

THE CONTRACTOR SHALL TAKE DELIVERY OF THE COMPONENT, EQUIPMENT, CHEMICAL AND LUBRICANT ETC. FROM THE CUSTOMER/BHEL STORES/ STORAGE AREA AFTER GETTING THE APPROVAL OF BHEL ENGINEER ON STANDARD INDENT FORMS TO BE SPECIFIED BY BHEL. COMPLETE AND DETAILED ACCOUNT OF ABOVE SHALL BE SUBMITTED TO THE BHEL ENGINEER AND RECONCILED PERIODICALLY.

4.0.14

CONTRACTOR SHALL ENSURE FLOW OF MATERIAL TO AND FROM SITE IN SUCH A MANNER AND SEQUENCE THAT MATERIAL ACCUMULATION AT SITE DOES NOT LEAD TO CONGESTION AT SITE. IN CASE IT IS NECESSARY TO SHIFT AND RE-STACK THE MATERIALS KEPT AT WORK AREAS/ SITE TO ENABLE OTHER AGENCIES TO CARRY OUT THEIR WORK OR FOR ANY OTHER REASON, IT SHALL BE DONE BY CONTRACTOR MOST EXPEDITIOUSLY. NO CLAIM FOR EXTRA PAYMENT FOR SUCH WORK WILL BE ENTERTAINED.

4.0.15

THE CONTRACTOR SHALL PERFORM ANY SERVICES, TESTS ETC. WHICH MAY NOT BE SPECIFIED BUT NEVERTHELESS REQUIRED FOR THE COMPLETION OF WORK WITHIN QUOTED RATES.

4.0.17

THE CONTRACTOR SHALL EXECUTE THE WORK IN THE MOST SUBSTANTIAL AND WORKMANLIKE MANNER. THE STORES SHALL BE HANDLED WITH CARE AND DILIGENCE.

4.0.18

BHEL RESERVES RIGHT TO RECOVER FROM THE CONTRACTOR ANY LOSS WHICH ARISES OUT OF UNDUE DELAY/DISCREPANCY/SHORTAGE/DAMAGE OR ANY OTHER CAUSES DUE TO CONTRACTOR'S LAPSE DURING ANY STAGE OF WORK. ANY LOSS TO BHEL DUE TO CONTRACTOR'S LAPSE SHALL HAVE TO BE MADE GOOD BY THE CONTRACTOR.

4.0.22

PLANT MATERIALS SHOULD NOT BE USED FOR ANY TEMPORARY SUPPORTS / SCAFFOLDING / PREPARING PRE-ASSEMBLY BED ETC.

4.0.23

THE DETAILS OF EQUIPMENTS TO BE ERECTED UNDER THIS CONTRACT IS GENERALLY AS PER THE WEIGHT SCHEDULE GIVEN IN **APPENDIX-I**. THESE DETAILS ARE APPROXIMATE AND MEANT ONLY TO GIVE A GENERAL IDEA TO THE TENDERER ABOUT THE MAGNITUDE OF THE WORK INVOLVED. ACTUAL QUANTUM AND TYPE OF EQUIPMENTS WILL BE BASED ON THE ERECTION DOCUMENTS THAT WILL BE FURNISHED IN THE COURSE OF ERECTION AND THE WEIGHT AND QUANTITY AS PER THE RELEVANT ENGINEERING DOCUMENTS WILL ONLY BE ADMISSIBLE FOR THE BILLING PURPOSE.

4.1 PREPARATION OF FOUNDATIONS, AND GROUTING

4.1.1

BUILDINGS, FOUNDATIONS AND OTHER NECESSARY CIVIL WORKS FOR SUPPORTING STRUCTURES, EQUIPMENTS ETC, WILL BE PROVIDED BY THE BHEL/CUSTOMER. THE CHECKING OF DIMENSIONAL ACCURACY, AXES, ELEVATION, LEVELS ETC, WITH REFERENCE TO BENCH MARKS OF FOUNDATIONS AND ANCHOR BOLT PITS AND ALSO ADJUSTMENTS OF FOUNDATION LEVEL, DRESSING AND CHIPPING OF FOUNDATION SURFACES OF ALL EQUIPMENTS CONTRACTOR/BHEL SHALL PREPARE PROTOCOLS BEFORE TAKING OVER THE FOUNDATIONS. DRESSING AND CHIPPING OF FOUNDATIONS UPTO 25MM FOR ACHIEVING PROPER LEVELS WILL BE WITHIN THE SCOPE OF WORK/SPECIFICATION.

4.1.2

ALL TEMPORARY FOUNDATIONS AND ANCHOR POINTS REQUIRED FOR INSTALLING ERECTION EQUIPMENTS AND WINCHES, FOUNDATIONS FOR PUMPS, TANKS ETC ARE IN THE SCOPE OF CONTRACTOR. ALL BUILDING MATERIALS LIKE CEMENT, STEEL INCLUDING RE-INFORCEMENT BARS, GRITS CEMENTS ETC FOR SUCH TEMPORARY FOUNDATIONS SHALL HAVE TO BE ARRANGED BY THE CONTRACTOR WITHIN THE QUOTED RATES. ALL SUCH FOUNDATIONS SHALL BE DEMOLISHED AND NORMAL GROUND CONDITIONS RESTORED AFTER THE USAGE.

4.1.3

THE COMPLETE WORK OF SECONDARY GROUTING OF EQUIPMENTS (STATIC AS WELL AS ROTATING IN TOTALITY) ETC IS INCLUDED IN THE SCOPE OF WORK/SPECIFICATION. CONTRACTOR SHALL ARRANGE ALL MANPOWER, T&P, FORM WORK AND SHUTTERING MATERIALS, ALL GROUTING MATERIALS SUCH AS ORDINARY PORTLAND CEMENT, SAND, STONE CHIPS ETC & QUICK-SETTING-NON-SHRINK-FREE-FLOW SPECIAL GROUT MIX OF REQUIRED SPECIFICATION (LIKE CONBEXTRA -GP1/ GP2 OR EQUIVALENT).

4.1.3.1

THE QUICK-SETTING-NON-SHRINK-FREE-FLOW SPECIAL GROUT MIX SHALL BE PURCHASED ONLY FROM THE FOLLOWING BHEL APPROVED VENDORS:

1. M/S FOSROC CHEMICALS (INDIA) PVT LTD;
2. M/S SIKA INDIA PVT LTD;
3. M/S PAGEL CONCRETE TECHNOLOGIES PVT LTD;
4. M/S PIDILITE INDUSTRIES LTD.

IN ORDER TO ENSURE THE QUALITY, THE MAJOR GROUTING OF EQUIPMENTS USING ANY OF ABOVE GROUT MIXES SHALL ESSENTIALLY BE DONE AS PER THE RECOMMENDATIONS OF SUPPLIER WITH REGARD TO GROUT PREPARATION AND USE OF MACHINERY ETC UNDER THE SUPERVISION OF THE RESPECTIVE SUPPLIER. BHEL HAS ARRANGEMENT WITH ABOVE SUPPLIERS FOR SUPERVISION SERVICES AND THE SUPERVISION CHARGES FOR THE SAME WILL BE BORNE BY BHEL. HOWEVER, THE CONTRACTOR SHALL ENSURE READINESS OF EQUIPMENT FOR GROUTING IN ALL RESPECT BEFORE SUCH A SERVICE IS REQUISITIONED AND THE DURATION IS NOT PROLONGED UNDULY. ANY OVERSTAY REQUIRED DUE TO CONTRACTOR SHALL BE CHARGED TO THE CONTRACTOR WITH BHEL'S DEPARTMENTAL CHARGES. CONTRACTOR SHALL CONSULT BHEL ENGINEER BEFORE DECIDING UPON THE VENDOR FOR THE ABOVE.

4.1.3.2

CLEANING OF THE FOUNDATION SURFACES, POCKET HOLES, ANCHOR BOLT PITS AND DE-WATERING AND MAKING THEM FREE OF OIL, GREASE, SAND AND OTHER FOREIGN MATERIALS BY SODA WASHING, WATER WASHING, COMPRESSED AIR AND OTHER APPROVED METHODS WILL BE WITHIN THE SCOPE OF THIS WORK.

4.1.4

BHEL WILL PROVIDE ONLY SHIMS AND PACKER PLATES (EITHER MACHINED OR PLAIN) WHICH ARE RECEIVED FROM BHEL'S MANUFACTURING PLANTS AND GO AS PERMANENT PART OF THE EQUIPMENT. ADDITIONAL PACKER PLATES AND SHIMS IF REQUIRED, WILL HAVE TO BE PREPARED BY THE CONTRACTOR OUT OF STEEL PLATES, STEEL SHEETS TO MEET SITE

REQUIREMENTS. NECESSARY STEEL PLATES FOR THIS PURPOSE WILL BE PROVIDED BY BHEL FREE OF COST.

4.1.5

PACKER PLATES SHALL NOT ONLY BE BLUE MATCHED WITH FOUNDATIONS BUT ALSO INTER-PACKER CONTACT SURFACES, CONTACT SURFACES BETWEEN PACKER AND PEDESTALS, CONTACT SURFACE BETWEEN PACKER AND FOUNDATION FRAME ETC SHALL ALSO BE BLUE MATCHED AND REQUIRED QUANTUM OF CONTACT SHALL BE ACHIEVED BY CHIPPING AND SCRAPPING AS PER ENGINEER'S INSTRUCTIONS.

4.2 WELDING, HEAT-TREATMENT, RADIOGRAPHY AND NON-DESTRUCTIVE TESTING

- A) INSTALLATION OF EQUIPMENT INVOLVES GOOD QUALITY WELDING, WELD CHECKS, POST WELD HEAT TREATMENT ETC. CONTRACTOR'S PERSONNEL ENGAGED SHOULD HAVE ADEQUATE KNOWLEDGE ON THE ABOVE WORKS.
- B) THE METHOD OF WELDING (VIZ) ARC OR ANY OTHER METHOD WILL BE INDICATED IN THE DETAILED DRAWING/DOCUMENTS. BHEL ENGINEER WILL HAVE THE OPTION OF CHANGING THE METHOD OF WELDING AS PER SITE REQUIREMENT.
- C) ALL THE WELDERS SHALL BE TESTED AND APPROVED BY BHEL/CUSTOMER/THIRD INDEPENDENT AGENCY'S ENGINEER BEFORE THEY ARE ACTUALLY ENGAGED ON WORK THOUGH THEY MAY POSSESS OTHER CERTIFICATES. BHEL RESERVES THE RIGHT TO REJECT ANY WELDER WITHOUT ASSIGNING ANY REASON.
- D) UNSATISFACTORY AND CONTINUOUS POOR PERFORMANCE MAY RESULT IN DISCONTINUATION OF CONCERNED WELDER.
- E) THE WELDED SURFACE SHALL BE CLEANED OF SLAG AND PAINTED WITH PRIMER PAINT TO PREVENT CORROSION. CONTRACTOR SHALL PROVIDE SUCH PRESERVATIVE PAINTS.
- F) THE CONTRACTOR SHALL MAINTAIN WELDING RECORDS IN THE FORM AS PRESCRIBED BY BHEL CONTAINING ALL NECESSARY DETAILS, AND SUBMIT THE SAME TO THE BHEL ENGINEER AS REQUIRED. INTERPRETATION OF THE BHEL ENGINEER REGARDING ACCEPTABILITY OF THE WELDS SHALL BE FINAL.
- G) THE FIELD WELDED JOINTS SHALL BE SUBJECT TO DYE PENETRANT/ OTHER NON-DESTRUCTIVE EXAMINATION AS SPECIFIED IN THE RESPECTIVE ENGINEERING DOCUMENTS/ AS INSTRUCTED BY BHEL.
- H) WELDING ELECTRODES HAVE TO BE STORED IN ENCLOSURES HAVING TEMPERATURE AND HUMIDITY CONTROL ARRANGEMENT. THIS ENCLOSURE SHALL MEET BHEL SPECIFICATIONS.
- J) WELDING ELECTRODES, PRIOR TO THEIR USE, CALL FOR BAKING FOR SPECIFIED PERIOD AND WILL HAVE TO BE HELD AT SPECIFIED TEMPERATURE FOR SPECIFIED PERIOD. ALSO, DURING EXECUTION, THE WELDING ELECTRODES HAVE TO BE CARRIED IN PORTABLE OVENS.

4.3 GENERAL RESPONSIBILITY OF THE CONTRACTOR

4.3.1

THE CONTRACTOR SHALL HAVE TOTAL RESPONSIBILITY FOR ALL EQUIPMENT AND MATERIALS IN HIS CUSTODY AT CONTRACTOR'S STORES, LOOSE, SEMI-ASSEMBLED, ASSEMBLED OR ERECTED BY HIM AT SITE. HE SHALL EFFECTIVELY PROTECT THE FINISHED WORKS FROM ACTION OF WEATHER AND FROM DAMAGES OR DEFAACEMENT AND SHALL ALSO COVER THE FINISHED PARTS IMMEDIATELY ON COMPLETION OF WORK AS PER BHEL ENGINEER'S INSTRUCTIONS. THE MACHINE SURFACES/FINISHED SURFACES SHOULD BE GREASED AND COVERED.

4.3.2 PRESERVATION & PROTECTION OF COMPONENTS

AT ALL STAGES OF WORK, EQUIPMENTS/MATERIALS IN THE CUSTODY OF CONTRACTOR, INCLUDING THOSE ERECTED, WILL HAVE TO BE PRESERVED AS PER THE INSTRUCTIONS OF BHEL. NECESSARY PRESERVATION AGENTS, PRIMER & PAINT, FOR THE ABOVE WORK SHALL BE PROVIDED BY CONTRACTOR AT HIS OWN COST. THIS SHALL BE APPLICABLE TO ALL CATEGORIES OF WORK.

4.3.3

THE CONTRACTOR SHALL MAKE SUITABLE SECURITY ARRANGEMENTS INCLUDING EMPLOYMENT OF SECURITY PERSONNEL AND ENSURE PROTECTION OF ALL MATERIALS/EQUIPMENT IN THEIR CUSTODY AND INSTALLED EQUIPMENTS FROM THEFT/FIRE/PILFERAGE AND ANY OTHER DAMAGES AND LOSSES.

4.3.4

CONTRACTOR SHALL COLLECT ALL SCRAP MATERIALS PERIODICALLY FROM VARIOUS AREA OF WORK SITE, DEPOSIT THE SAME AT PLACE(S) EARMARKED AT SITE OR SHIFT THE SAME TO PLACE(S) EARMARKED IN BHEL/ CLIENT'S STORES. IN CASE OF FAILURE OF CONTRACTOR IN COMPLIANCE OF THIS REQUIREMENT, BHEL WILL MAKE SUITABLE ARRANGEMENT AT CONTRACTOR'S RISK AND COST.

4.3.5

ALL SURPLUS, DAMAGED, UNUSED MATERIALS, PACKAGE MATERIALS/ CONTAINERS, SPECIAL TRANSPORTING FRAMES, GUNNY BAGS, ETC., SHALL BE RETURNED TO BHEL STORES BY THE CONTRACTOR.

4.3.6

THE CONTRACTOR SHALL NOT WASTE ANY MATERIALS ISSUED TO HIM. IN CASE IT IS OBSERVED AT ANY STAGE THAT THE WASTAGE/EXCESS UTILIZATION OF MATERIALS IS NOT WITHIN THE PERMISSIBLE LIMITS, RECOVERY FOR THE EXCESS QUANTITY USED OR WASTED WILL BE EFFECTED WITH DEPARTMENTAL CHARGES FROM THE CONTRACTOR. DECISION OF BHEL ON THIS WILL BE FINAL AND BINDING ON THE CONTRACTOR.

4.3.7

FOR ANY CLASS OF WORK FOR WHICH NO SPECIFICATIONS HAVE BEEN LAID DOWN IN THESE SPECIFICATIONS, WORK SHALL BE EXECUTED AS PER THE INSTRUCTIONS OF BHEL.

4.4 ERECTION OF ELECTROSTATIC PRECIPITATOR,

4.4.1

WHEREVER CALLED FOR, PRE-ASSEMBLY OF SUPPORTING STRUCTURES, CASING WALLS SHALL BE DONE ON GROUND PRIOR TO ERECTION IN POSITION.

4.4.2

ALL SITE WELD FOR CASING, INLET & OUTLET DUCTING CONNECTIONS HAVE TO BE TESTED FOR ESTABLISHING LEAKPROOF JOINTS.

4.4.3

LOADING OF COLLECTING ELECTRODES EITHER FROM TOP OR BOTTOM, TO BE DECIDED SUITING SITE CONDITIONS, SHALL BE DONE WITH DUE CARE AS PER INSTRUCTIONS.

4.4.4

STRAIGHTNESS OF ALL COLLECTING ELECTRODES HAS TO BE CHECKED ON GROUND PRIOR TO LOADING IN TO THE FIELD.

4.4.5

BUNDLE OF COLLECTING ELECTRODES SHOULD BE HANDLED ONLY WITH SPECIAL LIFTING BEAM AND SLINGS SUPPLIED FOR THE PURPOSE AS REGULAR DU.

4.4.6

BHEL WILL SUPPLY HUCK BOLTING M/C WITH NECESSARY AUXILIARIES FREE OF CHARGES. HOWEVER, ELECTRICAL CONNECTIONS, OPERATION ETC SHALL BE ARRANGED BY THE CONTRACTOR.

4.4.7

CLEARANCES AS PRESCRIBED AMONGST COLLECTING ELECTRODES AND WITH CASING WALLS HAVE TO BE MAINTAINED. SPOT HEATING OF COLLECTING ELECTRODES WHEREVER CALLED FOR, SHALL BE DONE AS PART OF WORK TO ACHIEVE THE REQUIRED CLEARANCES.

4.4.8

ERECTION, ALIGNMENT/ FIXING IN FINAL POSITION, OF HIGH VOLTAGE RECTIFIERS OF ESP IS IN THE SCOPE OF WORK. HOWEVER TESTING & COMMISSIONING WILL BE DONE BY OTHER AGENCY.

4.4.9

INSTALLATION, OF INTERLOCKS IS IN THE SCOPE OF WORK.

4.4.10

COMPLETE ERECTION, ALIGNMENT, TESTING, PRE-COMMISSIONING AND COMMISSIONING ETC FOR DRIVE MOTORS OF COLLECTING ELECTRODES AND EMITTING ELECTRODE RAPPING MECHANISM IS IN THE SCOPE OF WORK.

4.4.11 AIR LEAK TEST

AFTER ERECTION OF ESP AT APPROPRIATE STAGE AIR LEAK TEST HAS TO BE CARRIED OUT. NECESSARY EQUIPMENT LIKE, AIR BLOWER, VENTURY, DUCTING, AND INSTRUMENTATION ETC. WILL BE PROVIDED BY BHEL FREE OF CHARGES. HANDLING AT STORES, TRANSPORT, UNLOADING AT SITE ERECTION, COMMISSIONING OF TEMPORARY ARRANGEMENT FOR CONDUCTING THE AIR LEAK TEST AND CARRYING OUT THE LEAK TEST, ATTENDING TO THE LEAKAGES TILL SATISFACTORY RESULT IS IN SCOPE OF THE WORK. CONTRACTOR SHALL DISMANTLE THE TEST EQUIPMENTS AND RETURN TO BHEL STORES IN GOOD CONDITION AFTER DUE RECONCILIATION, CLEANING AND SERVICING. NO PAYMENT IS ENVISAGED FOR INSTALLATION AND RETURNING OF AIR LEAK TEST EQUIPMENTS/ ARRANGMENT.

4.5 THERMAL INSULATION

4.5.1

FIXING OF IRON COMPONENTS/ FICOM FOR AND APPLICATION OF THERMAL INSULATION (MINERAL WOOL MATTRESSES) BETWEEN THE INNER ROOF AND OUTER ROOF IS PART OF WORK UNDER THIS SOCPE. PAYMENT WILL BE MADE FOR THIS INSULATION AT THE RATE APPLICABLE FOR ESP (ITEM SN. 3 OF RATE SCHEDULE).

4.6 OTHER PRODUCTS AND SYSTEMS

4.6.1

DUCTS/ EXPANSION BELLOWS (METALLIC AND NON METALLIC) ARE SUPPLIED IN LOOSE WALL PLATES/SEGMENTS AND THESE ARE TO BE ASSEMBLED AND WELDED AT SITE BEFORE ERECTION. INSTALLATION OF STEEL FRAME OF NMEJ AND CONNECTION WITH ADJACENT DUCT AND ERECTION OF SCAFFOLDING FOR FIXING THE NMEJ AND FABRIC PORTION IS IN CONTRACTOR'S SOCPE. ALL JOINTS CONNECTING DUCTS, EXPANSION PIECES AND DAMPERS SHALL BE SEAL WELDED. THESE WELDS HAVE TO BE TESTED FOR LEAKPROOF AS PER TECHNICAL INSTRUCTION/ REQUIREMENT.

4.6.2

CERTAIN STRUCTURAL ITEMS OF STRUCTURE, PLATFORM ETC., WILL BE SUPPLIED IN RUNNING LENGTHS WHICH SHALL BE CUT TO REQUIRED SUITABLE SIZES AND ADJUSTED/TRIMMED AS PART OF WORK.

4.6.3

ADDITIONAL PLATFORMS OF PERMANENT NATURE FOR APPROACHING DIFFERENT EQUIPMENTS, AS PER SITE REQUIREMENT, WHICH MAY NOT BE INDICATED IN DRAWINGS, SHALL BE FABRICATED AND INSTALLED BY THE CONTRACTOR. SIMILARLY CANOPIES FOR MOTORS, ACTUATORS ETC MAY HAVE TO BE ERECTED. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THIS WORK ON ACCEPTED TONNAGE RATE FOR STRUCTURES. BHEL WILL SUPPLY THE MATERIAL REQUIRED FOR PLATFORMS/CANOPIES IN RANDOM LENGTHS & SIZES THAT SHALL BE FABRICATED WITHOUT ANY EXTRA PAYMENT.

4.6.4

SUSPENSIONS/SUPPORTS FOR DUCTS WILL BE SUPPLIED IN RUNNING/RANDOM LENGTHS/ SIZES, WHICH SHALL BE CUT TO SUITABLE SIZES AND ADJUSTED AS REQUIRED.

4.6.5

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TEMPORARY LADDERS ON COLUMNS FOR INITIAL WORKS, IF REQUIRED, TILL PERMANENT LADDER/ STAIRWAYS ARE COMPLETED. TEMPORARY WELDING ON ANY STRUCTURAL MEMBER SHALL BE DONE ONLY WITH THE APPROVAL OF BHEL. MATERIAL AND FABRICATION OF TEMPORARY LADDERS IS IN THE SCOPE OF CONTRACTOR

4.6.6

INSTALLATION AND WELDING OF NECESSARY INSTRUMENTATION TAPPING POINTS, & MEASUREMENT DEVICES, WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE DONE AS PER THE INSTRUCTIONS OF BHEL SITE ENGINEER. THE INSTALLATION OF ALL THE ABOVE ITEMS WILL BE CONTRACTOR'S RESPONSIBILITY EVEN IF THE:

- I. ITEMS ARE NOT SPECIFICALLY INDICATED UNDER THE RESPECTIVE PRODUCT GROUPS AS GIVEN IN THE TECHNICAL SPECIFICATIONS.
- II. ITEMS ARE SUPPLIED BY AN AGENCY OTHER THAN BHEL.

NDE, AND POST WELD HEAT TREATMENT FOR ABOVE SHALL BE DONE AS PER THE SPECIFICATIONS AS PART OF WORK.

4.6.7

ERECTION OF ACTUATORS/DRIVES OF DAMPERS, GATES ETC IS IN THE SCOPE OF WORK. THESE MAY HAVE TO BE SERVICED, ADJUSTED/SET, LUBRICATED PRIOR TO ERECTION, IN POSITION, DURING PRE-COMMISSIONING & COMMISSIONING AS INCIDENTAL TO THE WORK.

4.6.8

ALL ELECTRICAL MOTORS HAVE TO BE TESTED FOR IR & PI VALUES PRIOR TO THE TRIAL RUN. WHERE REQUIRED, DRY OUT MAY HAVE TO BE CARRIED OUT BY USING EXTERNAL HEATING SOURCE. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS IN THIS REGARD AND COMPLETE THE WORK AS INSTRUCTED.

4.6.9

SPRING SUSPENSION/CONSTANT LOAD HANGERS MAY HAVE TO BE PRE-ASSEMBLED FOR REQUIRED LOAD AND ERECTION CARRIED OUT AS PER INSTRUCTIONS OF BHEL. ADJUSTMENTS, REMOVAL OF TEMPORARY ARRESTS/LOCKS, CUTTING OF EXCESS THREAD LENGTH OF HANGER TIE-ROD ETC., HAVE TO BE CARRIED OUT AS AND WHEN REQUIRED. LOAD SETTING OF SPRING HANGERS, AS PER BHEL'S DOCUMENTS/INSTRUCTIONS, DURING VARIOUS STAGES OF ERECTION & TESTING AND AFTER FLOATING OF DUCTING AND DURING COLD AND HOT CONDITION WILL HAVE TO BE DONE. THIS EXERCISE MAY HAVE TO BE REPEATED TILL SATISFACTORY RESULTS ARE ACHIEVED AS INCIDENTAL.

4.6.10 FIXING OF FLOOR GRILLS AND ROOF SHEETING

ELECTROFORGED FLOOR GRILLS WILL BE SUPPLIED FOR THIS PROJECT. THESE MAY HAVE TO BE CUT TO SUIT REQUIREMENT. CUTTING SHALL BE DONE ONLY BY MECHANICAL CUTTERS **AND NOT BY GAS CUTTING**. COLD GALVANIZING COMPOUND IS TO BE APPLIED ON THE CUT SURFACE/EDGE. COLD GALVANIZING PAINT WILL BE SUPPLIED BY BHEL FREE OF COST.

FIXING OF FLOOR GRILLS SHALL BE DONE WITH SELF-TAPPING SCREWS **AND NOT BY WELDABLE STUDS**. SPECIAL PURPOSE ELECTRICALLY OPERATED HAND TOOLS ARE AVAILABLE IN THE MARKET FOR SUCH PURPOSE THAT DRILLS, TAPS AND TIGHTENS/FIXES THE SCREWS IN A SINGLE OPERATION. BHEL WILL SUPPLY THE NECESSARY SELF-TAPPING SCREWS AND FIXING CLIPS. CONTRACTOR SHALL DEPLOY THE **DRILLING CUM FIXING MACHINE** WITH SPARES REQUIRED FOR THIS PURPOSE.

SIMILARLY ROOF SHEETING MAY HAVE TO BE FIXED WITH SELF-TAPPING SCREWS.

4.7.0 TESTING, PRE-COMMISSIONING AND COMMISSIONING

4.7.1

TESTING, PRE-COMMISSIONING & COMMISSIONING WILL INVOLVE, THOUGH NOT LIMITED TO THESE, VARIOUS TESTING, TRIAL RUNS OF VARIOUS EQUIPMENTS ERECTED AND SYSTEMS INSTALLED. ALL THE ACTIVITIES FOR COMMISSIONING OF THE SET, AS INFORMED BY BHEL FROM TIME TO TIME SHALL BE COMPLETED.

4.7.2

ALL THE ABOVE TESTS SHOULD BE REPEATED TILL ALL THE EQUIPMENTS SATISFY THE REQUIREMENT/ OBLIGATIONS OF BHEL TO THEIR CLIENT AND ALSO THE RELEVANT STATUTORY AUTHORITY.

4.7.3

IN CASE ANY DEFECT, SUCH AS LOOSE COMPONENTS, UNDUE NOISE OR VIBRATION, STRAIN ON CONNECTED EQUIPMENT ETC, IS NOTICED DURING TESTS, TRIAL RUNS THE CONTRACTOR SHALL IMMEDIATELY ATTEND TO THESE DEFECTS AND TAKE NECESSARY CORRECTIVE MEASURES. IF ANY READJUSTMENT AND REALIGNMENT ARE NECESSARY, THE SAME SHALL BE DONE AS PER BHEL ENGINEER'S INSTRUCTIONS. CLAIM, IF ANY, FOR THESE WORKS FROM THE CONTRACTOR SHALL BE GOVERNED BY CLAUSES

4.7.4

- I) CONTRACTOR SHALL CUT/OPEN THE WORK, IF NEEDED, AS PER BHEL ENGINEER'S INSTRUCTIONS DURING PRE-COMMISSIONING, COMMISSIONING FOR INSPECTION, CHECKING AND MAKE GOOD THE WORKS AFTER INSPECTION IS OVER.
- II) SIMILARLY, DURING THE COURSE OF ERECTION, IF CERTAIN PORTION OF EQUIPMENT'S ERECTED BY THE CONTRACTOR HAS TO BE UNDONE FOR ENABLING OTHER CONTRACTORS/AGENCIES OF BHEL/CUSTOMER TO CARRY OUT THEIR WORK, CONTRACTOR SHALL CARRY OUT SUCH JOBS EXPEDITIOUSLY AND PROMPTLY AND MAKE GOOD THE JOB AFTER COMPLETION OF WORK BY OTHER CONTRACTOR'S/ AGENCIES OF BHEL/CUSTOMER AS PER BHEL ENGINEER'S/ AGENCIES OF BHEL/CUSTOMERS INSTRUCTIONS. CLAIMS, IF ANY, IN THIS REGARD SHALL BE GOVERNED AS PER CLAUSES 4.0.09

4.7.5

COMMISSIONING ACTIVITIES WILL CONTINUE TILL THE COMPLETION OF TRIAL RUN, TRIAL OPERATION AND PG TEST. DURING THIS PERIOD CONTRACTOR SHALL MAKE AVAILABLE THE SERVICES OF SEPARATE DEDICATED LABOR FORCE COMPRISING OF SUITABLE SKILLED AND SEMI/UN-SKILLED HANDS ALONG WITH NECESSARY TOOLS AND PLANTS, CONSUMABLES, SCAFFOLDS AND APPROACHES ETC.

4.7.6

IT SHALL BE SPECIFICALLY NOTED THAT THE CONTRACTOR MAY HAVE TO WORK ROUND THE CLOCK DURING THE PRE-COMMISSIONING AND COMMISSIONING PERIOD ALONG WITH BHEL ENGINEERS AND HENCE CONSIDERABLE OVERTIME PAYMENT IS INVOLVED. THE CONTRACTOR'S QUOTED RATES SHALL BE INCLUSIVE OF ALL THESE FACTORS.

4.7.7

CONDUCT OF PERFORMANCE GUARANTEE TEST IS IN THE SCOPE OF WORK. CONTRACTOR SHALL INSTALL ALL NECESSARY TAPPING POINTS, INSTRUMENTS ETC AND PROVIDE NECESSARY ASSISTANCE IN THIS REGARD.

4.7.8

THE CONTRACTOR SHALL CARRY OUT ANY OTHER TESTS AS DESIRED BY BHEL ENGINEER ON ERECTED EQUIPMENT COVERED UNDER THE SCOPE OF THIS CONTRACT DURING TESTING, PRE-COMMISSIONING AND COMMISSIONING, TO DEMONSTRATE THE COMPLETION OF ANY PART OR WHOLE OF WORK PERFORMED BY THE CONTRACTOR.

4.8 EXCLUSIONS

THE FOLLOWING WORKS ARE SPECIFIC EXCLUSIONS FROM THE SCOPE OF WORK / SPECIFICATION:-

- I) SOME SUB-DELIVERY ITEMS AND ELECTRICAL COMPONENTS SUCH AS PUSH BUTTONS, JUNCTION BOXES ETC.
- II) E&C WORK OF CABLE TRAYS, CABLES AND EARTHING EXCEPT SPECIFICALLY MENTIONED.
- III) CONTROL PANELS, EPMS, MCC ETC.
- IV) ALL ELECTRICAL AND CONTROL & INSTRUMENTATION ITEMS EXCEPT THOSE SPECIFIED HEREIN.
- V) CIVIL WORKS EXCEPT TO THE EXTENT SPECIFICALLY INDICATED ELSEWHERE IN THIS TENDER.
- VI) PNEUMATIC COPPER TUBING AND FITTINGS THEREOF.
- VII) ELECTRONIC PROBE/ ELECTRONIC COMPONENTS OF ASH LEVEL INDICATORS.
- VII) TESTING AND COMMISSIONING OF HEATING ELEMENTS, THERMOSTATS, HV RECTIFIER TRANSFORMERS.
- XI) INSULATION OF ESP & DUCTING (EXCEPT INSULATION BETWEEN INNER & OUTER ROOF OF ESP).
- XII) FINAL PAINTING

SECTION-5

SPECIAL CONDITIONS OF CONTRACT

5.0 OBLIGATIONS OF THE CONTRACTOR (INFRASTRUCTURE, TOOLS, TACKLES, CONSUMABLES ETC.)

5.1 ACCOMMODATION, DRINKING WATER & LOCAL TRANSPORTATION FOR THE LABOUR AND OTHER EMPLOYEES

- a) ONLY OPEN SPACE FOR CONSTRUCTION OF LABOUR ACCOMODATION WILL BE PROVIDED BY THE CLIENT. DEVELOPMENT OF THE LAND AND COSTRUCTION OF LABOUR COLONY, WITH ARRANGEMENTS OF LIGHTING, DRINKING WATER, AND SANITATION ETC IS IN CONTRACTOR'S SCOPE.
- b) ELECTRICTY FOR LABUOR COLONY: CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENT FOR DRAWING AND FURTHER DISTRIBUTION CONFORMING TO THE STATUTORY & SAFETY REQUIREMENTS.
- c) FOR DRINKING WATER CONTRACTOR HAS TO MAKE HIS OWN ARRANGEMENT INCLUDING DIGGING OF BORE -WELL IF REQUIRED.
- d) THE CONTRACTOR HAS TO MAKE HIS OWN ARRANGEMENT FOR TRANSPORTATION OF HIS WORKMEN AND OTHER EMPLOYEES. BHEL/CLIENT SHALL NOT PROVIDE ANY FACILITY IN THIS REGARD.

5.2 TOOLS AND TACKLES, MEASURING AND MONITORING DEVICES:

5.2.1

THE CONTRACTOR SHALL PROVIDE ALL, EXCEPTING THOSE SPECIFICALLY INDICATED AS BHEL SCOPE, REQUIRED TOOLS AND PLANTS, MONITORING AND MEASURING DEVICES (MMD) AND HANDLING & TRANSPORTATION EQUIPMENTS FOR THE SCOPE OF WORK COVERED UNDER THESE SPECIFICATIONS. CONTRACTOR HAS TO PROVIDE SUITABLE CRANES FOR MATERIAL HANDLING AT BHEL/CLIENT'S STORES/STORAGE YARD/ UNLOADING BAY FOR RAIL CONSIGNMENT. BHEL'S CRANE WILL NOT BE AVAILABLE FOR THIS PURPOSE. PLEASE REFER RELEVANT APPENDIX HEREIN FOR THE LIST OF T&P BEING PROVIDED BY BHEL FREEE OF CHARGES ON SHARING BASIS.

5.2.2

ALL TOOLS AND TACKLES TO BE DEPLOYED BY THE CONTRACTOR FOR THE WORK SHALL HAVE THE PRIOR APPROVAL OF BHEL ENGINEER WITH REGARD TO BRAND, QUALITY AND SPECIFICATION. INDICATIVE LIST OF MAJOR T&P TO BE ARRANGED BY THE CONTRACTOR HAS BEEN FURNISHED IN RELEVANT APPENDIX HEREIN. CONTRACTOR SHALL ALSO MOBILIZE ALL OTHER T&P NECESSARY FOR TIMELY AND SATISFACTORY COMPLETION OF THE WORK IN SCOPE.

5.2.3

CONTRACTOR'S RESPONSIBILITIES WITH REGARD TO OPERATOR, FUEL, LUBRICANTS AND DAILY UPKEEP OF T&P PROVIDED BY BHEL IS FURTHER DETAILED IN SECTION-7.

5.2.4

TIMELY DEPLOYMENT OF ADEQUATE QUANTITY OF T & P IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE PREPARED TO AUGMENT THE T & P AT SHORT NOTICE TO MATCH THE PLANNED PROGRAMME AND TO ACHIEVE THE MILESTONES.

5.2.5

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 ALTERNATIVE ARRANGEMENTS EXPEDITIOUSLY SO THAT THE PROGRESS OF WORK IS NOT HAMPERED.

5.2.6

IN THE EVENT OF CONTRACTOR FAILING TO ARRANGE THE REQUIRED TOOLS, PLANTS, MACHINERY, EQUIPMENT, MATERIAL OR NON-AVAILABILITY OF THE SAME OWING TO BREAKDOWN, BHEL WILL MAKE THE ALTERNATIVE ARRANGEMENT AT THE RISK AND COST OF THE CONTRACTOR.

5.2.7

THE T&P TO BE ARRANGED BY THE CONTRACTOR SHALL BE IN PROPER WORKING CONDITION AND THEIR OPERATION SHALL NOT LEAD TO UNSAFE CONDITION. THE MOVEMENTS OF CRANES AND OTHER EQUIPMENT SHOULD BE SUCH THAT NO DAMAGE / BREAKAGE OCCURS TO FOUNDATIONS, OTHER EQUIPMENTS, MATERIAL, PROPERTY AND MEN. ALL ARRANGEMENTS FOR THE MOVEMENT OF THE T&P ETC SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE NECESSARY TEST CERTIFICATES FOR EQUIPMENTS TO BE SUBMITTED.

5.2.8

USE OF WELDING GENERATORS/ RECTIFIERS FOR WELDING ONLY SHALL BE PERMITTED. USAGE OF WELDING TRANSFORMERS WILL BE SUBJECT TO PRIOR APPROVAL OF BHEL.

5.2.9

THE CONTRACTOR AT HIS COST SHALL CARRY OUT PERIODICAL TESTING OF HIS CONSTRUCTION EQUIPMENTS AND CALIBRATION OF MEASURING & MONITORING DEVICES (MMD). TEST/ CALIBRATION CERTIFICATES SHALL BE FURNISHED TO BHEL. MMDS SHALL BE CALIBRATED ONLY AT ACCREDITED LABORATORY AS PER THE LIST AVAILABLE WITH BHEL OR ANY OTHER LABORATORY APPROVED BY BHEL.

5.3 CONSUMABLES

5.3.1

THE CONTRACTOR SHALL PROVIDE ALL CONSUMABLES REQUIRED FOR CARRYING OUT THE WORK COVERED UNDER THESE SPECIFICATIONS EXCEPTING THOSE SPECIFICALLY INDICATED AS BHEL SCOPE.

5.3.2

ALL CONSUMABLES TO BE USED FOR THE WORK SHALL HAVE PRIOR APPROVAL OF BHEL ENGINEER WITH REGARD TO BRAND AND QUALITY SPECIFICATIONS. TEST REPORTS / CERTIFICATES IN RESPECT OF THESE CONSUMABLES, WHEREVER APPLICABLE, SHALL BE SUBMITTED TO BHEL ENGINEER.

5.3.3 PRIMERS & PAINTS

ALL PRIMERS AND PAINTS IS IN THE CONTRACTOR'S SCOPE UNLESS PROVIDED OTHERWISE IN BHEL SCOPE AS FREE ISSUE.

5.3.3 COSUMABLES FOR BHEL SUPLLIED EQUIPMENTS (CRANES, T&P, ETC):

REFER SECTION-7 IN THIS REGARD.

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 PRIOR APPROVAL OF BHEL, BEFORE PROCUREMENT, REGARDING MANUFACTURER, 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, DATE OF EXPIRY ETC. BATCH TEST CERTIFICATES SHALL BE MADE AVAILABLE FOR VERIFICATION & RECORD BEFORE THE ACTUAL USE OF THE WELDING CONSUMABLES.

BHEL RESERVES THE RIGHT TO REJECT THE USE OF ANY ELECTRODES, IF FOUND NON-ACCEPTABLE BECAUSE OF BAD QUALITY, DETERIORATION IN QUALITY DUE TO IMPROPER STORAGE, SHELF LIFE EXPIRY, UNAPPROVED TYPE / BRAND ETC.

5.4.2

GASES LIKE OXYGEN, AND ACETYLENE ETC THAT ARE REQUIRED FOR ERECTION RELATED ACTIVITIES SHALL BE ARRANGED BY THE CONTRACTOR AT HIS COST.

5.5 FIELD OFFICE

5.5.1

THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR FIELD OFFICE AND STORES FOR ACCOMMODATING NECESSARY EQUIPMENTS, TOOLS ROOM FOR EXECUTION OF THE WORK. ONLY OPEN SPACE WILL BE PROVIDED BY BHEL / CUSTOMER, FREE OF CHARGES AS PER THE AVAILABILITY OF SPACE.

5.5.2

ON COMPLETION OF WORK, ALL THE TEMPORARY BUILDINGS, STRUCTURES, PIPELINES, CABLES, ETC SHALL BE DISMANTLED AND LEVELED AND DEBRIS SHALL BE REMOVED AS PER INSTRUCTION OF BHEL BY THE CONTRACTOR AT HIS COST. IN THE EVENT OF HIS FAILURE TO DO SO, THE SAME WILL BE ARRANGED TO BE REMOVED AND EXPENDITURE THEREOF WILL BE RECOVERED FROM THE CONTRACTOR. THE DECISION OF BHEL ENGINEER IN THIS REGARD SHALL BE FINAL. HOWEVER, THE SCOPE OF DISMANTLING AND LEVELING THE AREA IS LIMITED ONLY TO THE CONTRACTOR'S SITE OFFICE, YARD AND OTHER SPACES OCCUPIED BY THE CONTRACTOR.

5.5.3.

BHEL IS INSTALLING A COMPUTERIZED SITE MANAGEMENT SYSTEM AT SITE TO COVER AREAS OF MATERIAL MANAGEMENT, ERECTION & COMMISSIONING, QUALITY CONTROL, BILLING, MIRS, ETC. THIS SYSEM CAN BE ACCESSED THROUGH NORMAL TELEPHONE LINES AND THROUGH LAN INSTALLED AT SITE.

CONTRACTOR SHALL ENSURE THAT ALL OPERATIONS IN THEIR SCOPE WHICH HAVE INTERFACES WITH BHEL SYSTEM IS DONE ONLY THROUGH THIS COMPUTERIZED SYSTEM. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR CONNECTIVITY, COMPUTING EQUIPMENT, PERSONNEL, SOFTWARE, ETC TO OPERATATE AND INTERACT WITH BHEL SYSTEM. NO MANUAL SYSTEM OTHER THEN WHAT IS NOT COVERED BY COMPUTREIZED SYSTEM WILL BE ACCEPTABLE TO BHEL.

5.6 AREA LIGHTING

5.6.1

CONTRACTOR SHALL ARRANGE ADEQUATE FLOODLIGHTS, HAND LAMPS AND AREA LIGHTING. CONTRACTOR SHALL USE HIS OWN MATERIALS LIKE CABLES, FUSES, SWITCH BOARDS ETC.

5.7 CONSTRUCTION POWER & WATER

5.7.1

CONSTRUCTION POWER (THREE PHASE, 415V / 440V, 50Hz) WILL BE PROVIDED AT ONE POINT NEAR THE SITE APPROXIMATLY 500 METER FROM ERECTION SITE FREE OF CHARGE, HOWEVER ALL TAXES, DUTIES, LEVIES, CHARGES ETC SHALL ALSO BE BORNE BY THE CONTRACTOR. REQUIRED ENERGY METER, ALL CABLES, FUSES, DISTRIBUTION BOARDS, SWITCHES, SWITCHBOARDS, BUS BARS, EARTHING ARRANGEMENTS, PROTECTION DEVICES e.g. ELCB, IF ANY, AND ANY OTHER INSTALLATION AS SPECIFIED BY STATUTORY AUTHORITY, CLIENT IN THIS REGARD, FOR DRAWL OF CONSTRUCTION POWER SHALL BE ARRANGED BY THE CONTRACTOR. OBTAINING APPROVALS, PAYMENT OF NECESSARY FEES, DUTIES ETC TOWARDS THE CLEARANCE OF SUCH INSTALLATIONS, PRIOR TO THESE BEING PUT TO USE OR AS MAY BE SPECIFIED, SHALL BE THE RESPONSIBILITY OF 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. INSTALLATION AND MAINTENANCE OF THIS SHALL BE DONE BY LICENSED AND EXPERIENCED ELECTRICIAN.

5.7.3

THE CUSTOMER WILL PROVIDE WATER FOR CONSTRUCTION PURPOSE AT A SINGLE POINT FREE OF CHARGE. HOWEVER, TAXES, DUTIES, LEVIES, CHARGES, IF ANY, SHALL BE BORNE BY THE CONTRACTOR. ALL ARRANGEMENTS FOR FURTHER DISTRIBUTION HAVE TO BE MADE BY THE CONTRACTOR.

5.7.4

CONTRACTOR SHALL BE WELL EQUIPPED WITH BACK-UP ARRANGEMENT TO TACKLE SITUATIONS ARISING DUE TO FAILURE OF CUSTOMER SUPPLIED POWER, SO AS TO ENSURE CONTINUITY AND COMPLETION OF CRITICAL PROCESSES AND ACTIVITIES THAT ARE UNDERWAY AT THE TIME OF POWER FAILURE OR IMPORTANT ACTIVITIES PLANNED IN IMMEDIATE FUTURE.

5.7.5

BHEL IS NOT 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.

5.8 RESPONSIBILITIES WITH REGARD TO LABOUR EMPLOYMENT ETC.

REFER CLAUSE 2.8 OF GENERAL CONDITIONS OF CONTRACT ALSO IN THIS REGARD.

5.8.1

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

5.8.2

BHEL / CUSTOMER MAY INSIST FOR 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 / CUSTOMER.

5.8.3

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ARRANGE GATE PASS FOR ALL HIS EMPLOYEES, T&P ETC FOR ENTERING THE PROJECT PREMISES. 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 PERMITS FOR WORKING BEYOND NORMAL WORKING HOURS.

5.8.4.

CONTRACTOR SHALL PROVIDE AT DIFFERENT ELEVATION SUITABLE ARRANGEMENT FOR URINAL AND DRINKING WATER FACILITY WITH NECESSARY PLUMBING & DISPOSAL ARRANGEMENT INCLUDING CONSTRUCTION OF SEPTIC TANK. THESE INSTALLATION SHALL BE MAINTAINED IN HYGINIC CONDITION AT ALL TIMES.

5.8.5 CERTAIN IMPORTANT MATTERS REGARDING IR AT SITE

A) CONTRACTOR SHALL OBTAIN FORM V FROM THE CLIENT IMMEDIATELY ON REACHING SITE.

B) CONTRACTOR SHALL OBTAIN NECESSARY LABOUR LICENSE AS PER REQUIREMENT BEFORE THE START OF WORK. THE NUMBER OF PERSONS COVERED BY THE LICENSE SHOULD BE INCREASED AS AND WHEN THE LABOUR STRENGTH IS INCREASED AT SITE.

C) THE COVERAGE OF WORKMEN COMPENSATION INSURANCE SHALL ALSO BE COMMENSURATE WITH THE ACTUAL STRENGTH OF WORKFORCE.

D) CONTRACTOR SHALL DEPOSIT APPLICABLE AMOUNT TOWARDS PROVIDENT FUND FOR ALL THE LABOUR EMPLOYED BY HIM WITH REQUISITE AUTHORITY AND FURNISH THE COPY OF CHALLAN TO BHEL EVERYMONTH AND SUBMIT ANNUAL RETURN FORMS 3A & 6A (AND/OR ANY OTHER APPLICABLE FORMS). AS FAR AS POSSIBLE, CONTRACTOR SHALL OBTAIN PF STATEMENT IN RESPECT OF EACH WORKER AND DISTRIBUTE TO THE INDIVIDUALS.

E) CONTRACTOR'S MONTHLY INVOICES WILL BE CLEARED SUBJECT TO SUBMISSION OF NECESSARY DOCUMENTS INCLUDING STATUTORY ONES SUCH AS PF CHALLANS, WAGE SHEETS ETC. THIS IS TO BE NOTED SPECIFICALLY AS ESSENTIAL FROM THE POINT OF VIEW THAT BHEL'S OWN INVOICES ON CLIENT WILL BE RELEASED ONLY ON SUBMISSION OF DOCUMENTS SUCH AS ABOVE STATED.

5.9

IF AT ANY TIME DURING THE EXECUTION OF WORK, IT IS NOTICED THAT THE WORK IS SUFFERING ON ACCOUNT OF NON-AVAILABILITY/SHORTFALL IN PROVISION OF RESOURCES FROM THE CONTRACTOR'S SIDE BHEL WILL MAKE SUITABLE ALTERNATE ARRANGEMENTS AT THE RISK AND COST OF CONTRACTOR. THE EXPENDITURE INCURRED WITH OVERHEADS THEREON SHALL BE RECOVERED FROM THE CONTRACTOR.

5.10 TAXES, DUTIES, LEVIES

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

5.10.1

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

5.10.2 Service Tax & Cess on Service Tax

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

Contractor shall obtain prior written consent from BHEL before billing the amount towards such taxes.

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

5.10.3 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.

5.10.4 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.

5.10.5 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.

SECTION-6

SPECIAL CONDITIONS OF CONTRACT

6.0 CONTRACTOR'S OBLIGATION IN REGARD TO EMPLOYMENT OF SUPERVISORY STAFF AND WORKMEN

6.1

THE CONTRACTOR SHALL DEPLOY ALL THE SKILLED/SEMISKILLED/ UNSKILLED LABOUR INCLUDING HIGHLY SKILLED WORKMEN ETC. THESE WORKMEN SHOULD HAVE PREVIOUS EXPERIENCE ON SIMILAR JOB. THEY SHALL HOLD VALID CERTIFICATES WHEREVER NECESSARY. BHEL RESERVES THE RIGHT TO INSIST ON REMOVAL OF ANY EMPLOYEE OF THE CONTRACTOR AT ANY TIME IF HE IS FOUND TO BE UNSUITABLE AND THE CONTRACTOR SHALL FORTHWITH REMOVE HIM. CONTRACTOR SHOULD FURNISH A TENTATIVE DEPLOYMENT PLAN OF HIS MANPOWER AS PER FORMAT PROVIDED IN APPENDIX. ALSO THE ACTUAL DEPLOYMENT SHALL BE SO AS TO SATISFY THE ERECTION AND COMMISSIONING TARGETS SET BY BHEL.

6.2

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENGAGE HIS WORKMEN IN SHIFTS AND OR ON OVERTIME BASIS FOR ACHIEVING THE TARGETS SET BY BHEL. THIS TARGET MAY BE SET TO SUIT BHEL'S COMMITMENTS TO ITS CUSTOMER OR TO ADVANCE DATE OF COMPLETION OF EVENTS OR DUE TO OTHER REASONS. THE DECISION OF BHEL IN REGARD TO SETTING THE ERECTION AND COMMISSIONING TARGETS WILL BE FINAL AND BINDING ON THE CONTRACTOR.

6.3

CONTRACTOR SHALL DEPLOY ONLY QUALIFIED AND EXPERIENCED ENGINEERS/ SUPERVISORS. THEY SHALL HAVE PROFESSIONAL APPROACH IN EXECUTING THE WORK.

6.4

THE CONTRACTOR'S SUPERVISORY STAFF SHALL EXECUTE THE WORK IN THE MOST PROFESSIONAL MANNER IN THE STIPULATED TIME. ACCURACY OF WORK AND AESTHETIC FINISH ARE ESSENTIAL PART OF THIS CONTRACT. THEY SHALL BE RESPONSIBLE TO ENSURE THAT THE ASSEMBLY AND WORKMANSHIP CONFORM TO DIMENSIONS AND TOLERANCES GIVEN IN THE DRAWINGS/INSTRUCTIONS GIVEN BY BHEL ENGINEER FROM TIME TO TIME.

6.5

THE SUPERVISORY STAFF EMPLOYED BY THE CONTRACTOR SHALL ENSURE PROPER OUTTURN OF WORK AND DISCIPLINE ON THE PART OF THE LABOUR PUT ON THE JOB BY THE CONTRACTOR. ALSO IN GENERAL THEY SHOULD SEE THAT THE WORKS ARE CARRIED OUT IN A SAFE AND PROPER MANNER AND IN COORDINATION WITH OTHER LABOUR AND STAFF EMPLOYED DIRECTLY BY BHEL OR OTHER CONTRACTORS OF BHEL OR BHEL'S CLIENT.

6.6

IF AT ANY TIME, IT IS FOUND THAT THE CONTRACTOR IS NOT IN A POSITION TO DEPLOY THE REQUIRED ENGINEERS/SUPERVISORS/WORKMEN DUE TO ANY REASON; BHEL SHALL HAVE THE OPTION TO MAKE ALTERNATE ARRANGEMENTS AT THE CONTRACTOR'S RISK AND COST.

6.7 SITE ORGANISATION

THE CONTRACTOR SHALL PROVIDE ADEQUATE STAFFING IN THE FOLLOWING AREAS IN ADDITION TO THE STAFFING REQUIREMENTS OF EXECUTION AS STRUCTURED/INFORMED BY BHEL:

- A) OVERALL PLANNING, MONITORING & CONTROL
- B) QUALITY CONTROL AND QUALITY ASSURANCE
- C) MATERIALS MANAGEMENT
- D) SAFETY, FIRE & SECURITY
- E) INDUSTRIAL RELATIONS AND FULFILLMENT OF LABOUR LAWS AND OTHER STATUTORY OBLIGATIONS.

SECTION-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 IN THIS TENDER SPECIFICATION.

7.1.4 WELDER QUALIFICATION TEST MATERIALS

CONTRACTOR SHALL PROVIDE THE RAW MATERIAL FOR PREPARATION OF TEST PIECES FOR CONDUCTING THE SITE QUALIFICATION TEST OF WELDERS. CONTRACTOR SHALL PREPARE THE REQUIRED TEST PIECES FROM SUCH RAW MATERIALS, COMPLETE THE TEST AND CARRY OUT DESTRUCTIVE AS WELL AS NON-DESTRUCTIVE TESTS AS PER BHEL'S INSTRUCTIONS.

7.2 EQUIPMENT – TOOLS & PLANTS

BHEL WILL MAKE AVAILABLE T&P LISTED VIDE APPENDIX-II FREE OF CHARGE. FURTHER DETAILS ARE AS UNDER:

7.2.1 CRANES TO BE PROVIDED BY BHEL

7.2.1.1

BHEL WILL MAKE AVAILABLE THE CRANE AS PER APPENDIX-II FREE OF CHARGE TO THE CONTRACTOR ON SHARING BASIS FOR THE PURPOSES NOTED THEREIN VIDE NOTES.

THESE CRANES HAVE TO BE SHARED WITH OTHER AGENCIES / CONTRACTOR'S OF BHEL. THE ALLOCATION OF CRANES SHALL BE THE DISCRETION OF BHEL ENGINEER, WHICH SHALL BE BINDING ON THE CONTRACTOR.

7.2.1.2

ALL ARRANGEMENTS, INCLUDING PROVIDING & LAYING OF SLEEPER BEDS, BACKFILLING OF APPROACHES WHEREVER NECESSARY FOR SAFE MOVEMENT OF THE CRANES AS DIRECTED BY BHEL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SLEEPERS FOR THIS PURPOSE SHALL BE PROVIDED BY THE CONTRACTOR.

7.2.1.3

BHEL T&P WILL BE ISSUED IN BASIC ASSEMBLED CONDITION; CONTRACTOR SHALL TRANSPORT THESE T&P TO & FRO BETWEEN BHEL STORES AND SITE. ADDITIONAL LOOSE COMPONENTS / SUB-ASSEMBLIES / ATTACHMENTS AS AND WHEN NECESSARY, WILL BE ISSUED BY BHEL, TO & FRO TRANSPORTATION BETWEEN BHEL STORES AND SITE OF SUCH ITEMS SHALL ALSO BE DONE BY THE CONTRACTOR. ASSEMBLY OF SUCH ADDITIONAL LOOSE COMPONENTS/SUB-ASSEMBLIES/ ATTACHMENTS IS IN CONTRACTOR'S SCOPE. ANY BOOM REDUCTION/ EXTENSION OF BHEL CRANES FOR CONTRACTOR'S USE AND RESTORATION TO PREVIOUS STATE OR AS DIRECTED BY BHEL SHALL BE THE CONTRACTOR'S RESPONSIBILITY. CONTRACTOR SHALL PROVIDE ALL ENABLING SERVICES WITH TOOLS AND TACKLES FOR ASSEMBLY/DISMANTLING AND BOOM EXTENSION/ REDUCTION AS ABOVE.

7.2.1.4

THE DAY-TO-DAY UPKEEP AND RUNNING MAINTENANCE LIKE FILLING / TOPPING UP OF LUBRICANTS, CHANGING FILTERS ETC. OF BHEL CRANES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SPARES IF ANY, REQUIRED IN NORMAL COURSE WILL BE PROVIDED BY BHEL. MAJOR BREAKDOWNS WILL BE ATTENDED TO BY BHEL. THE CRANES PROVIDED BY BHEL WILL BE WITHDRAWN FOR REGULAR AND CAPITAL MAINTENANCE AS PER THE RESPECTIVE SCHEDULE OF MAINTENANCE. AS FAR AS POSSIBLE SUCH SCHEDULES WILL BE INTIMATED TO THE CONTRACTOR IN ADVANCE AND MAY BE ADJUSTED DEPENDING ON THE WORK REQUIREMENTS AT SITE. HOWEVER NO CLAIM WHATSOEVER WILL BE ENTERTAINED ON ACCOUNT OF NON-AVAILABILITY OF CRANES.

7.2.1.5

WHERE THE SERVICES OF THE CRANES PROVIDED BY BHEL ARE TO BE SHARED BY OTHER AGENCIES/ CONTRACTORS OF BHEL, THE CONTRACTOR'S RESPONSIBILITIES DEFINED ABOVE WILL ALSO BE APPORTIONED ACCORDINGLY TO THE BENEFICIARY AGENCY. WORKING ARRANGEMENTS IN THIS REGARD WILL BE DONE AT SITE BY BHEL ENGINEER AND IN ANY CASE HIS DECISION SHALL BE FINAL AND BINDING.

7.3 OTHER T&P

7.3.1

THE RESPONSIBILITIES OF CONTRACTOR DEFINED ABOVE FOR BHEL CRANES SHALL ALSO BE APPLICABLE, MUTATIS – MUTANDIS, IN RESPECT OF OTHER TOOL & PLANTS PROVIDED BY BHEL.

7.3.2

AS REGARDS THE HYDRAULIC TEST PUMPS, WATER FILL PUMPS AND CHEMICAL CLEANING EQUIPMENTS ETC WHICH HAVE TO BE USED IN TEMPORARY INSTALLATIONS FOR THE RESPECTIVE PURPOSE HAVE TO BE SERVICED BY THE CONTRACTOR PRIOR TO USE. BHEL WILL PROVIDE NECESSARY SPARES, PACKING ETC FREE OF CHARGE FOR THE SAME.

7.3.3

SPECIAL TOOLS WHICH ARE SUPPLIED BY BHEL AS PART OF MAINTENANCE TOOLS TO BE HANDED OVER TO CUSTOMER UNDER REGULAR DU / DESS NUMBERS IN VARIOUS PRODUCT GROUPS MAY BE ISSUED TO THE CONTRACTOR FREE OF CHARGES FOR SPECIFIC ACTIVITIES, AT THE DISCRETION OF BHEL. CONTRACTOR SHALL RETURN THEM AFTER THE COMPLETION OF THE SPECIFIC ACTIVITY FOR WHICH THE TOOLS WERE SPARED, IN GOOD WORKING ORDER.

7.3.4

LUBRICANTS LIKE ENGINE OIL, CARDIUM COMPOUND, HYDRAULIC OIL, GEAR OIL, GREASE BHEL'S T&P INCLUDING CRANES WILL BE PROVIDED BY BHEL FREE OF CHARGE. SIMILARLY FILTERS FOR CRANES WILL BE PROVIDED FREE OF CHARGE BY BHEL. ALL OTHER CONSUMABLES LIKE COTTON WASTE ETC SHALL BE IN THE CONTRACTOR'S SCOPE.

7.3.5

THE CONTRACTOR MUST NOT USE THESE EQUIPMENTS FOR ANY PURPOSE OTHER THAN WHAT THEY ARE INTENDED FOR. IF THE ABOVE ITEMS ISSUED TO CONTRACTOR ARE FOUND NOT UTILISED / NOT MAINTAINED TO THE SATISFACTION OF BHEL ENGINEER OR MISUSED, THESE WILL BE WITHDRAWN AND NO REPLACEMENT WILL BE DONE FOR SUCH ITEMS.

7.4 CHEMICALS, GASES AND LUBRICANTS FOR PRE-COMMISSIONING AND COMMISSIONING

ALL LUBRICANTS AND CHEMICALS REQUIRED FOR TESTING, PRESERVATION, CHEMICAL CLEANING / ACID CLEANING, OIL FLUSHING AND THE LUBRICANTS FOR THE PLANT EQUIPMENT WILL BE SUPPLIED BY BHEL FREE OF CHARGES.

SECTION-8

SPECIAL CONDITIONS OF CONTRACT

INSPECTION, QUALITY ASSURANCE, QUALITY CONTROL, STATUTORY INSPECTION

8.0 Quality Control and Quality Assurance

8.1.1

BHEL gives lot of importance for this function. Contractor's engineers and supervisors shall be adequately qualified and inclined to do a quality job. The quality assurance engineer shall coordinate all aspects of quality control, inspection, implementation of quality assurance procedures laid down by BHEL. He shall also fill up all the quality assurance log sheets and submit for BHEL/customer for joint inspection and acceptance. Total quality is the watch ward 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.

8.1.2

All the electrical/mechanical, testing, calibrating and all other measuring equipment/instruments for checking, testing, calibrating the equipments under the scope of this work shall be provided by contractor (refer clause 5.1.1).

8.1.3

All these instruments/equipments/gauges/tools etc. provided by the contractor shall be of brand, quality and accuracy specified by BHEL engineer and should have necessary calibration and other certificates as per the requirement of BHEL engineer. Decision of BHEL engineer regarding acceptance or otherwise of the measuring instruments/gauges/tools for the work under this specification, is final and binding on the contractor.

8.1.4

It is the responsibility of the contractor to prove the accuracy of the testing/measuring/calibrating equipments brought by him based on the periodicity of calibration as called for in the BHEL's quality assurance standards/BHEL engineer's instructions.

8.1.5

Apart from day-to-day inspection by BHEL engineers stationed at site and also by BHEL's customer engineers, stage inspection of equipments etc. under calibration, erection, testing and commissioning at various stages by teams of engineers from field engineering services of BHEL's manufacturing units and quality assurance teams from field quality assurance unit/factory quality assurance unit of BHEL will also be conducted. Contractor shall arrange all labour, tools and tackles etc. for such stage inspection.

8.1.6

Any re-laying or re-termination of cables/re-erection of instruments/recalibration of instruments etc. required due to contractor's mistake or design requirement and found at any stage inspection, shall be carried out by the contractor at no extra cost.

8.1.7

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 as per the relevant clauses.

8.1.8

The welders' performance will be reviewed from time to time as per BHEL/IBR standards and welders not performing to the standards of BHEL/IBR will be removed from working. Contractor shall arrange for alternative welders immediately.

8.1.9

All the welders including HP welders shall carry identity cards as per the pro-forma prescribed by BHEL. Only welders duly authorised by BHEL shall be engaged on the work.

8.1.10 Stage inspection by QA engineers:

Apart from day-to-day inspection by BHEL engineers stationed at site and also by customer engineers, stage inspection of the equipments under erection & commissioning at various stages of erection and commissioning by teams of engineers from field quality assurance will also be conducted. All necessary inputs required for such stage inspection shall be arranged by contractor free of cost.

Any modifications suggested by QA engineers shall be carried out.

Any minor modification/repairs of defective work found during stage inspection shall be rectified free of cost by contractor.

Any major rectification or in case of repairs/re-work of defective work found during stage inspection, but not attributable to the contractor shall also be carried out. Claims of contractor if any, shall be governed as per the clauses in section 13.

8.2 Statutory Inspection

8.2.1

The scope includes getting the approvals from the statutory authorities. This includes arranging for inspection visits of electrical inspector periodically as per BHEL engineer's instructions, submitting documents etc. and following up the matter with them as and when necessary for the work involved in this scope.

8.2.2

All fees connected with the contractors for testing his welders/ men/workers and testing, inspection, calibration of his instruments and equipments, shall be paid by the contractor. It shall be contractor's responsibility to obtain approval of statutory authorities wherever applicable, for conducting of any work which comes under the purview of these authorities.

SECTION-9

SPECIAL CONDITIONS OF CONTRACT

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 authorised 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:

Name of Contractor

Name of Contractor Site-in-charge & Telephone number

Job Description in short

Date of start of job

Date of expected completion

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.

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

9.2.1.2 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 PPE of standard ISI make as may be prescribed

9.2.1.3 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

9.2.1.4 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.

9.2.1.5 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.

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

9.2.1.7 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.

9.2.1.8 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.

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

9.2.1.10 All excavations and openings must be securely and adequately fenced/barricaded and warning signs erected when considered necessary as per relevant code of practice.

9.2.1.11 No persons shall remove guardrails, covers or protective devices unless authorised by a responsible supervisor and alternative precautions have been taken.

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

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

9.2.1.14 Only authorised personnel are allowed to repair, commission electrical equipments.

9.2.1.15 Gas cylinders shall be handled and stored as per Gas Cylinder Rules and relevant safe working practices

9.2.1.16 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.

9.2.1.17 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.

9.2.1.18 The contractor shall train adequate number of workers/supervisors for administering "FIRST AID". List of competent first aid administrators should be prominently displayed.

9.2.1.19 The contractor shall display at strategic places and in adequate numbers the following in fluorescent markings

- Emergency telephone numbers
- Exit, Walkways
- Safe working load charts for wire ropes, slings, D shackles etc
- Warning signs

9.2.1.20 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.

9.2.1.21 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.

9.2.1.22 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.

9.2.1.23 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.

9.2.1.24 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.

9.2.1.25 **Emergency Response**

9.2.1.15.1 BHEL will have an Emergency Response Plan for each Project Site in consultation with the Owner as the case may be, detailing the procedure for mobilization of personnel and equipment, and defining the responsibilities of the personnel indicated, in order to prepare for any emergency that may arise in order to ensure the priorities of

- Safeguard of life
- Protect assets under construction or 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 aid personnel 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 fails in 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 neutralized to acceptable norms before disposal to the designated area.

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

9.3 **SUPERVISION**

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

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

.Contractor, supervisor must attend all schedule safety meetings as would be intimated to him by the BHEL Engineer in Charge.

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

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

9.4.0 **TRAINING & AWARENESS**

9.4.1 Contractor shall deploy experienced supervisors and other manpower that 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 authorized 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 absencing himself from work for more than 46 hours, his accident report has to be sent to the respective Government Authorities. Therefore contractor shall inform the owner's representative such matter immediately for their needful action.

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

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

9.6 AUDIT REVIEW AND INSPECTION

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

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

- Compliance with procedures and systems
- Availability, condition and use of PPE

- 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-coordinator 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.

SN	Equipment	Scope of inspection	Inspection by	Schedule
1	Hand tools	To identify unsafe/defective tool	User	Daily
2	Power tools	To identify unsafe/defective tool	User	Daily
3	Fire Extinguishers	To check pressure and any defect	User Safety Coordinator	Daily Every month
4	Lifting equipment/tackles	To check for defects and efficacy of brakes	User Third party	Daily Every Year
5	PPE	To check for defects	User	Daily

9.7 **NON COMPLIANCE**-

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

Sl. No.	Violation of Safety Norm	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&P	500/-
14.	Accident Resulting in Partial Loss in Earning Capacity	25,000/- per victim
15.	Fatal Accident/Accidents Resulting in total loss in Earning Capacity	1,00,000/- per victim

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:

9.10.1 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

IS No.	YEAR	Amd. upto	Description
			CONSTRUCTION OF FOUNDATIONS IN SOIL
IS 1905	1987		STRUCTURAL SAFETY OF BUILDINGS MASONARY WALLS
IS 2082	1985		ELECTRICAL GEYSERS
IS 2171	1985		PORTABLE FIRE EXTINGUISHERS DRY POWDER TYPE (CARTRIDGE)
IS 2309	1989		PRACTICE FOR THE PROTECTION OF BUILDINGS AND ALLIED BUILDINGS AGAINST LIGHTENING
IS 2312	1967		EXHAUST FANS
IS 2361	1994		SPECIFICATION FOR BUILDING GRIPS - FIRST REVISION
IS 2418	1977		TUBULAR FLUORSCENT LAMPS IS 2418 (FT-1)
IS 2750	1964		STEEL SCAFFOLDINGS
IS 2762	1964		SAFE WORKING LOADS IN KGS FOR WIRE ROPE SLINGS
IS 2878	1986		FIRE EXTINGUISHERS CARBON DIOXIDE TYPE (PORTABLE AND TROLLEY MOUNTED)
IS 2925	1984		SPECIFICATION FOR INDUSTRIAL SAFETY HELMETS
IS 3016	1982		CODE OF PRACTICE FOR FIRE PRECAUTIONS IN WELDING AND CUTTING OPERATIONS- FIRST REVISION
IS 3315	1974		DESERT COOLERS
IS 3521	1989		INDUSTRIAL SAFETY BELTS AND HARNESS
IS 368	1983		IMMERSION WATER HEATERS
IS 3696	1991		SAFETY CODE OF SCAFFOLDS AND LADDERS PART 1 TO 2
IS 3737	1996		LEATHER SAFETY BOOTS FOR WORKERS IN HEAVY METAL INDUSTRIES
IS 374	1979		CEILING FANS INCLUDING REGULATORS
IS 3764	1992		EXCAVATION WORK - CODE OF SAFETY
IS 3786	1983		METHOD FOR COMPUTATION OF FREQUENCY AND SEVERITY RATES FOR INDUSTRIAL INJURIES AND CLASSIFICATION OF INDUSTRIAL ACCIDENTS
IS 3935	1966		CODE OF PRACTICE FOR COMPOSITE CONSTRUCTION
IS 4014	1967		CODE OF PRACTICE FOR STEEL TUBULAR SCAFFOLDING
IS 4081	1986		SAFETY CODE FOR BLASTING AND RELATED DRILLING OPERATIONS
IS 4082	1977	1996	STACKING AND STORAGE OF CONSTRUCTION MATERIALS AND COMPONENTS AT SITE
IS 4130	1991		DEMOLITION OF BUILDINGS - CODE OF SAFETY PART 1 TO 2
IS 4138	1977		SAFETY CODE FOR WORKING IN COMPRESSED AIR (FIRST REVISION)
IS 4155	1966		GLOSSARY OF TERMS RELATING TO CHEMICAL AND RADIATION HAZARDS AND HAZARDOUS CHEMICALS
IS 4209	1967		CODE OF SAFETY FOR CHEMICAL LABORATORY
IS 4250	1980		FOOD MIXERS
IS 4262	1967		CODE OF SAFETY FOR SULFURIC ACID
IS 4756	1978		SAFETY CODE FOR TUNNELING WORK
IS 4912	1978		SAFETY REQUIREMENTS FOR FLOOR AND WALL OPENINGS, RAILINGS AND TOE BOARDS

IS No.	YEAR	Amd. upto	Description
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 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

IS No.	YEAR	Amd. upto	Description
			MATERIAL
IS 9759	1981		GUIDELINES FOR DEWATERING DURING CONSTRUCTION
IS 9815	1989		SERVO MOTOR OPERATED LINE VOLTAGE CORRECTOR (SERVO STABILISER)
IS 9815	1989		SERVO MOTOR OPERATED LINE VOLTAGE CORRECTOR (SERVO STABILISER)
IS 9944	1992		RECOMMENDATIONS ON SAFE WORKING LOAD FOR NATURAL AND MANMADE FIBRE ROPE SLINGS
IS 996	1979		SINGLE PHASE ELECTRIC MOTORS
ISO 3873	1977		SAFETY HELMET

SECTION-10

SPECIAL CONDITIONS OF CONTRACT

10.0 DRAWINGS AND DOCUMENTS

10.1

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

10.2

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

10.3

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

10.4

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

10.5

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

10.6

In case of any conflict between general instructions to tenderness, 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 quoted for offer evaluation. Offers will be evaluated on the total amount for the entire Rate Schedule and the work will be awarded without splitting the scope.

10.8

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

SECTION-11

SPECIAL CONDITIONS OF CONTRACT

TIME SCHEDULE, MOBILIZATION, PROGRESS MONITORING, OVERRUN, VARIATION ETC.

11.1 TIME SCHEDULE & MOBILIZATION

11.1.1

THE CONTRACTOR HAS TO MOBILIZE HIS RESOURCES AND WORK FORCE IN SUCH A MANNER THAT THE ENTIRE WORK IS COMPLETED TO ACHIEVE THE FOLLOWING SCHEDULE:

SN	MAJOR MILESTONE	COMPLETION SCHEDULE #
01	START OF ERECTION	WITHIN 15 DAYS FROM DATE OF FAX LOI
02	BOILER LIGHT UP AND ALKALI BOIL OUT	19 th MONTH
03	COAL FIRING & SYNCHRONISATION	23 rd MONTH
04	COMPLETION OF TRIAL RUN AND COMPLETION OF ALL FACILITIES	27 TH MONTH
05	TOTAL PERIOD	27 MONTHS

- No. OF MONTHS FROM THE START OF ERECTION.

11.1.2

IN ORDER TO MEET ABOVE SCHEDULE IN GENERAL, AND ANY OTHER INTERMEDIATE TARGETS SET, OR TO MEET CUSTOMER REQUIREMENTS, CONTRACTOR SHALL ARRANGE ALL NECESSARY RESOURCES AS DIRECTED BY BHEL.

11.1.2 CONTRACT PERIOD

THE TOTAL CONTRACT PERIOD FOR COMPLETION OF ENTIRE WORK SHALL BE **27 (TWENTY SEVEN) MONTHS** FROM THE START OF ERECTION. THE CONTRACTOR SHALL COMPLETE ALL THE WORKS IN THE SCOPE OF THIS CONTRACT WITHIN THIS PERIOD. **PERMANENT ERECTION OF THE FIRST COLUMN SEGMENT OR MAJOR SUB-ASSEMBLY OF ANY OTHER EQUIPMENT ON ITS DESIGNATED FOUNDATION FOLLOWING DUE PROCESS OF PRE-ASSEMBLY AND QUALITY CHECKS AS PER APPROVED FIELD QUALITY PLAN (FQP) SHALL BE CONSIDERED AS THE START OF CONTRACT PERIOD FOR THIS CONTRACT.** PLACEMENT OF PACKER PLATES ETC. SHALL NOT BE CONSIDERED FOR THIS PURPOSE.

11.1.3 GRACE PERIOD

GRACE PERIOD OF **5 (FIVE) MONTHS** BEYOND THE CONTRACT PERIOD OF 27 (TWENTY SEVEN) MONTHS IS PROVIDED FOR THIS CONTRACT.

11.2 PROGRESS MONITORING, CONTRACT EXTENSION AND OVERRUN

11.2.1 PROGRESS MONITORING

PROGRESS WILL BE REVIEWED PERIODICALLY (DAILY / WEEKLY / MONTHLY) INCLUDING MONTH END REVIEW VIS-A-VIS THE PLANS DRAWN AS ABOVE. THE CONTRACTOR SHALL SUBMIT PERIODICAL PROGRESS REPORTS, AND OTHER REPORTS / INFORMATION INCLUDING MANPOWER, CONSUMABLES ETC., AS DESIRED BY BHEL.

11.2.2 ASCERTAINING AND ESTABLISHING THE REASONS FOR SHORTFALL

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THE ONUS PROBANDI THAT THE CAUSES LEADING TO EXTENSION OF THE CONTRACT PERIOD IS NOT DUE TO ANY REASONS ATTRIBUTABLE TO THE CONTRACTOR IS ON HIM (THE CONTRACTOR). REVIEW OF THE PERFORMANCE AS STATED VIDE CL. 11.2.1 ABOVE WILL BE MADE CONSIDERING THE AVAILABILITY OF COMPONENTS TO BE ERECTED AND OTHER INPUTS / CONSTRAINTS OVER WHICH THE CONTRACTOR HAS NO CONTROL. THE PROGRAMME WILL BE REVIEWED AREA-WISE AND THE FOLLOWING FACTS WILL BE RECORDED IN CASE OF SHORTFALL AT THE END OF EVERY MONTH:

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

11.2.3 CONTRACT EXTENSION

IF THE COMPLETION OF WORK AS DETAILED IN THESE SPECIFICATIONS 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.

11.2.4

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. 11.2.2 SHALL BE DONE DURING THE EXTENDED PERIOD. OVERRUN CHARGES WILL BE PAID IN PROPORTION TO THE ACHIEVEMENT OF RESPECTIVE MONTH VIS-À-VIS THE PLAN FOR THE MONTH (FOR ASSESSING THE PERFORMANCE, THE AGREED PLAN SHALL BE REDUCED BY SHORTFALL ATTRIBUTABLE TO BHEL). BHEL MAY DISALLOW CONTRACTOR'S CLAIM FOR OVERRUN CHARGES IF THE MONTHLY PROGRAMME AND REVIEW AS MENTIONED HERE ARE NOT MADE BY HIM.

11.2.5

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.

11.2.6 OVERRUN COMPENSATION

IF THE CONTRACT IS EXTENDED BEYOND THE CONTRACT (INCLUDING GRACE) PERIOD FOR ANY REASON OTHER THAN THOSE ATTRIBUTABLE TO THE CONTRACTOR OR FORCE MAJEURE CONDITIONS, THE CONTRACTOR WILL BE COMPENSATED BY PAYMENT OF OVER RUN CHARGES AT THE RATE OF Rs. 50,000/- (RUPEES FIFTY THOUSAND ONLY) PER MONTH. OVERRUN COMPENSATION WILL BE PAID FOR THE EXTENSION ATTRIBUTABLE TO BHEL ONLY. NO OVERRUN COMPENSATION WILL BE PAYABLE FOR THE EXTENSION ON ACCOUNT OF REASONS ATTRIBUTABLE TO CONTRACTOR AND / OR FORCE MAJEURE CONDITIONS.

11.3 PRICE VARIATION

THE AGREED RATES SHALL REMAIN FIRM THROUGHOUT THE CONTRACT PERIOD, GRACE PERIOD AND EXTENSIONS IF ANY. CLAUSE NO. 2.15 OF GENERAL CONDITIONS OF CONTRACT SHALL NOT BE APPLICABLE TO THIS CONTRACT.

11.4 CONTRACT VARIATIONS

11.4.1 VARIATION IN QUANTITIES

WEIGHT OF VARIOUS EQUIPMENTS, QUANTITIES OF VARIOUS ITEMS OF WORK, ETC. COVERED UNDER THESE SPECIFICATIONS AND INDICATED IN RELEVANT APPENDICES ARE LIKELY TO VARY. FOR ANY UPWARD OR DOWNWARD VARIATION IN THE QUANTITIES, THE RATES ACCEPTED SHALL BE APPLICABLE WITHOUT ANY VARIATION. PAYMENT WILL BE MADE FOR THE ACTUAL QUANTITY EXECUTED AND SO CERTIFIED BY BHEL.

11.5 INTEREST BEARING ADVANCE

INTEREST BEARING (@ 13.5% PER ANNUM INTEREST 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).

11.6 DEFINITION OF WORK COMPLETION

THE CONTRACTOR'S SCOPE OF WORK UNDER THESE SPECIFICATIONS WILL BE DEEMED TO HAVE BEEN COMPLETED IN ALL RESPECT, ONLY WHEN ALL THE ACTIVITIES ARE COMPLETED SATISFACTORILY AND SO CERTIFIED BY BHEL SITE IN CHARGE. THE DECISION OF BHEL IN THIS REGARD SHALL BE FINAL AND BINDING ON THE CONTRACTOR.

SECTION-12

SPECIAL CONDITIONS OF CONTRACT

TERMS OF PAYMENT

12.0 GENERAL

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 25TH OF PREVIOUS CALENDAR MONTH TO 24TH 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, THIS AMOUNT MAY BE RELEASED EARLIER (INCLUDING BEFORE COMPLETION OF WORK) SUBJECT TO RECEIPT AND ACCEPTANCE OF BANK GUARANTEE OF EQUAL AMOUNT IN BHEL'S PRESCRIBED FORMAT AND 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

THE PAYMENT FOR RUNNING BILLS WILL NORMALLY BE RELEASED WITHIN 30 DAYS OF SUBMISSION OF RUNNING BILL. CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENT FOR MAKING PAYMENT OF IMPENDING LABOUR WAGES AND OTHER DUES IN THE MEANWHILE.

12.1.1 PROGRESSIVE PAYMENT FOR ALL ITEMS OF RATE SCHEDULE:

- a) 40% OF AGREED ITEM RATE ON PRO -RATA BASIS ON PLACEMENT OF EQUIPMENT IN POSITION.
- b) 45% OF AGREED ITEM RATE ON PRO -RATA BASIS ON COMPLETION OF ALIGNMENT AND WELDING/BOLTING/GROUTING.
- c) THE REMAINING 15% OF AGREED ITEM RATE WILL BE PAID ON PRO -RATA BASIS ON COMPLETION OF ACTIVITIES/ MILESTONE AS UNDER.
 - c.1) COMPLETION OF LEAK TEST /TIGHTNESS TEST : 5%
 - c.2) BOILER LIGHT UP & ABO COMPLN : 4%
 - c.3) COAL FIRING : 2%
 - c.4) TRIAL OPERATION COMPLETION : 3%
 - c.4) COMPLETION OF ALL FACILITIES : 1%

12.2 MEASUREMENT OF THE WORK COMPLETED

- A) WHERE PAYMENT IS TO BE MADE ON THE BASIS OF WEIGHT, THE WEIGHT PER UNIT GIVEN IN THE BHEL DOCUMENT ONLY SHALL BE TAKEN IN TO CONSIDERATION. IN CASE SUCH INFORMATION IS NOT AVAILABLE IN BHEL DOCUMENTS, THEN THE LATEST RELEVANT INDIAN STANDARDS IN THIS REGARD MAY BE APPLIED.
- B) SPARES, SURPLUS QUANTITY, ERECTION CONTINGENCY MATERIALS WILL NOT BE PAID FOR UNLESS THE SAME HAS BEEN CONSUMED IN PLACE OF REGULAR ITEM OF MEASURABLE WORK AS PER THE RATE SCHEDULE.
- C) WHERE THE PAYMENT IS MADE ON THE BASIS OF ITEM RATE, ACTUAL EXECUTED QUANTITY MEASURED JOINTLY SHALL ONLY BE PAID FOR.
- D) IT IS CLARIFIED THAT AS FAR AS WEIGHT CONSTITUTED BY WELDING CONSUMABLES AND OTHER CONSUMABLES SUPPLIED BY BHEL AS WELL AS BY THE CONTRACTOR, SHALL BE IGNORED FOR THE PURPOSE PAYMENT.
- E) BHEL ENGINEER'S DECISION REGARDING STAGE OF PAYMENT CORRESPONDING TO PROGRESS OF WORK, CALCULATION OF WEIGHT ETC. WILL BE FINAL AND BINDING ON THE CONTRACTOR.
- F) WASTAGE ALLOWANCE PROVIDED ELSEWHERE ON APPLICATION OF REFRACTORY & INSULATION WILL BE APPLIED ON THE NET ISSUED QUANTITY. THE NET ISSUED QUANTITY IS GROSS ISSUE LESS THE QUANTITY RETURNED. THE WASTAGE ALLOWANCE WILL BE APPLIED AT THE FINAL RECONCILIATION STAGE. THE PAYABLE AMOUNT WILL THEN BE RESTRICTED TO THE NET QUANTITY AFTER WASTAGE ALLOWANCE.
- G) NO SEPARATE PAYMENT SHALL BE MADE FOR GROUTING OF EQUIPMENTS, STRUCTURES ETC SPECIFIED ELSEWHERE IN THESE SPECIFICATIONS.

SECTION-13

SPECIAL CONDITIONS OF CONTRACT

EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION

13.1

IF EXTRA WORKS (REQUIRING UP TO 100 MANHOURS) FOR MODIFICATION, REWORK, REVAMPING, IN BRIEF, ANY WORK DONE TO CHANGE THE STATE EXISTING TO A STAGE DESIRED AND ALSO FABRICATION, ALL OR ANY, NEEDED DUE TO ANY CHANGE IN OR DEVIATION FROM THE DRAWINGS AND DESIGN OF EQUIPMENT, OPERATION / MAINTENANCE REQUIREMENTS, MISMATCHING, TRANSIT DAMAGES AND OTHER ALLIED WORKS THAT ARE NOT VERY SPECIFICALLY INDICATED IN THE DRAWINGS, BUT ARE FOUND ESSENTIAL FOR SATISFACTORY COMPLETION OF THE WORK, ARE DONE, NO EXTRA CHARGES WILL BE PAID. THE TENDERERS ARE REQUESTED TO TAKE THIS ASPECT INTO ACCOUNT AND THE QUOTED RATE SHOULD INCLUDE ALL SUCH CONTINGENCIES.

13.2

HOWEVER, BHEL MAY CONSIDER FOR PAYMENT AS EXTRA ON MANDAY BASIS, FOR SUCH OF THOSE ACTIVITIES DETAILED IN CLAUSE 13.1 WHICH REQUIRE MORE THAN 100 MANHOURS AND SUCH PAYMENT WILL BE REGULATED BY THE TERMS, CONDITIONS AND STIPULATIONS CONTAINED IN THE CLAUSES CONTAINED HEREINAFTER. IT MAY BE SPECIFICALLY NOTED THAT THE DECISION OF BHEL AS TO WHETHER SUCH PAYMENT IS DUE SHALL BE FINAL AND BINDING ON THE CONTRACTOR.

13.3

EXTRA WORKS SHALL BE DONE BY A SEPARATELY IDENTIFIABLE GANG, WITHOUT AFFECTING ROUTINE ACTIVITIES. DAILY LOG SHEETS IN THE PROFORMA PRESCRIBED BY BHEL SHOULD BE MAINTAINED AND SHALL BE SIGNED BY THE CONTRACTOR'S REPRESENTATIVE AND BHEL ENGINEER. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED / ENTERTAINED IN THE ABSENCE OF THE SAID SUPPORTING DOCUMENTS i.e. DAILY MAN-HOUR LOG SHEETS. IT MAY, HOWEVER, BE NOTED THAT SIGNING OF LOG SHEETS BY BHEL ENGINEER DOES NOT MEAN THE ACCEPTANCE OF SUCH WORKS AS PAYABLE EXTRA WORKS.

13.4

SUCH EXTRA WORKS ARISING OUT OF TRANSIT, STORAGE AND ERECTION DAMAGES, PAYMENT, IF FOUND DUE, WILL BE REGULATED AS PER SECTION-14.

13.5

BHEL RETAINS THE RIGHT TO AWARD OR NOT TO AWARD ANY OF THE MAJOR REPAIR / REWORK / MODIFICATION / RECTIFICATION / FABRICATION WORKS AS DEFINED ABOVE TO THE CONTRACTOR, AT THEIR DISCRETION WITHOUT ASSIGNING ANY REASON FOR THE SAME.

13.6

IT SHALL BE NOTED THAT ALL EXTRA WORKS THAT ARISE ON ACCOUNT OF THE CONTRACTOR'S FAULT, WILL HAVE TO BE CARRIED OUT BY THE CONTRACTOR FREE OF COST. UNDER SUCH CIRCUMSTANCES, ANY MATERIAL AND CONSUMABLE REQUIRED FOR THIS PURPOSE WILL ALSO HAVE TO BE ARRANGED BY THE CONTRACTOR AT HIS COST.

13.7

AFTER ELIGIBILITY OF EXTRA WORKS IS ESTABLISHED AND FINALLY ACCEPTED BY BHEL ENGINEER / DESIGNER, PAYMENT WILL BE RELEASED ON COMPETENT AUTHORITY'S APPROVAL AT THE FOLLOWING RATE.

MANDAY RATE FOR ELIGIBLE EXTRA WORKS

SINGLE AVERAGE MANDAY RATE FOR 8 WORKING HOURS, INCLUDING OVERTIME IF ANY, AND OTHER SITE EXPENSES AND INCIDENTALS, INCLUDING SUPERVISION, CONSUMABLES, TOOLS AND TACKLES, WILL BE **Rs 320/-** (RUPEES THREE HUNDRED TWENTY ONLY). NO PAYMENT WILL BE MADE IF AN ITEM OF WORK LASTS LESS THAN 100 MANHOURS.

SECTION-14

SPECIAL CONDITIONS OF CONTRACT

14.0 Insurance

14.1 Marine, Storage cum Erection (MCE) Insurance and Repairing Damages

14.1.1

BHEL/client has an MCE insurance cover, inter-alia, for all the permanent project equipments/components supplied by BHEL under scope of this work by way of a transit and storage cum erection policy covering liability against damages/ losses etc.

14.2 Reporting Damages and Carrying out Repairs

14.2.1

Checking all components/equipments at siding/site and reporting to transporter and /or insurance authorities of any damages/losses will be done by BHEL.

14.2.2

Contractor shall render all help to BHEL in inspection including handling, re-stacking etc, assessing and preparing estimates for repairs of components damaged during transit, storage and erection, commissioning and preparing estimates for fabrication of materials lost/damaged during transit, storage and erection. Contractor shall help BHEL to furnish all the data required by railways, insurance company or their surveyors.

14.2.3

Contractor shall report to BHEL in writing any damages to equipments/ components on receipt, storing, and during drawl of the materials from stores, in transit to site and unloading at place of work and during erection and commissioning. The above report shall be as prescribed by BHEL site management. Any consequential loss arising out of non-compliance of this stipulation will be borne by contractor.

14.2.4

Contractor shall carry out fabrication of any material lost/damaged as per instructions from BHEL engineer.

14.2.5

BHEL, however, retains the right to award or not to award to the contractor any of the rectification/rework/repairs of damages and also fabrication of components.

14.2.6

All the repairs/rectification/rework of damages and fabrication of materials lost, if any, shall be carried out by a separately identifiable gang for certification of man-hours. Daily log sheets should be maintained for each work separately and should be signed by contractor's representative and BHEL engineer. Signing of log sheets does not necessarily mean the acceptance of these as extra works.

14.2.7

All rectification, repairs, rework and fabrication of components lost, which are minor and incidental to erection work (consuming not more than 100 man-hours on each occasion) shall be treated as part of work without any extra cost.

14.2.8

Insurance cover under this policy will generally be as per clauses 2.10.1 to 2.10.4 of General Conditions of Contract unless and otherwise specified differently in the Special Conditions.

14.2.9

In case the loss/damage is not attributable to the contractor, Payments of all extra works on account of repair / rectification / reworks of damages and fabrication of materials lost will be as per provisions of Section-13 of SCC.

14.2.10

In case the repairs/rectification/rework and fabrication of materials lost, the work has been done by more than one agency including the contractor, the payment towards extra charges will be on pro-rata basis and the decision of BHEL in this regard is final and binding on the contractor.

14.2.11

In case of theft / damage / loss of materials due to **repeated/continued instances of negligence/failure** attributable to the contractor, the expenses incurred on account of repair/ replacement of such components including BHEL's overhead expenses as applicable (presently @ 30%) in excess of the amount realized from the underwriters, if any, shall be recovered from the contractor. Recovery will be limited to Normal Deductible Franchise (DF)/Excess as per applicable Insurance (TAC) tariff guidelines for every incidence of loss/damage.

14.2.12

In case any insurance claim does not become tenable due to **wilful** negligence/damage/loss attributable to the contractor, the total cost of repair/replacement including BHEL overhead expenses shall be recovered from the contractor.

14.3 Insurance by the Contractor and Indemnification of BHEL

14.3.1

BHEL has taken 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 specification. However, the bidder 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 bidders' specific attention is also invited to clause 2.10 of General Conditions of Contract.

14.3.2

Contractor shall obtain suitable statutory as well as non-statutory insurance policies for all the properties belonging to him and also for his personnel deployed at project for execution of the contract work.

SECTION-15

Special Condition of Contract

15.0 Earnest Money Deposit & Security Deposit

15.1 Earnest Money Deposit:

EMD for this tender is Rs. 2, 00,000/- (Rupees Two lakhs only). Bidders who have already deposited One Time EMD of Rs. 2.00 lakh will be exempted from submission of any EMD now for this tender.

EMD is to be paid in **cash** (as permissible under Income Tax Act), Pay Order or **Demand Draft** only in favour of Bharat Heavy Electricals Limited and payable at Nagpur. **No other form of EMD is acceptable.**

15.1.1 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.

15.1.2 EMD shall not carry any interest.

15.2 Security Deposit

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

CONTRACT VALUE	TOTAL SECURITY DEPOSIT
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 should be furnished by the contractor before start of the work.

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

- i) Cash (as permissible under the Income Tax Act)
- ii) Pay Order, Demand Draft in favour of BHEL.
- iii) Local cheques of scheduled banks, subject to realization.
- iv) Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc.
(Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back).

- v) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act 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.
- vi) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/c BHEL, duly discharged on the back.
- vii) Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of the Security Deposit should be collected (By DD/or Bank Guarantee) before start of the work and the balance 50% may be recovered from the running bills.
- viii) EMD of the successful tenderer shall be converted and adjusted against the Security Deposit excepting One Time EMD.
- ix) The security deposit shall not carry any interest.

NOTE: Acceptance of Security Deposit against Sl. Nos. (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-I

ESTIMATED WEIGHT OF VARIOUS PRODUCT GROUPS FOR 1 x 500 MW ESP & DUCTS

PRODUCT GROUP (PG) No.	DESCRIPTION OF PG	DESIGN WEIGHT (MT)
48, 57 and Other Relevant PG	FLUE GAS DUCTS & DAMPERS (FROM BLR OUTLET FLANGE TO CHIMNEY) EXPANSION JOINTS (METALLIC AND NON-METALLIC), BLOWERS WITH DRIVE AND OTHER COMPONENTS, ACTUATORS/DRIVES OF GATES, DAMPER ETC.	1,397
78	ELECTROSTATIC PRECIPITATOR, INSULATION BETWEEN INNER RROF & OUTER ROOF.	7799
39	COLUMNS AND STRUCTURES FOR DUCT SYSTEM	1,100
89	ESP-GALLREIES AND STAIRS	139
	TOTAL WEIGHT	10,435

NOTE:

THE ACTUATORS/ DRIVES OF GATES, DAMPERS ETC. RELEASED IN SOME OTHER PROUCT GROUP BUT REQUIRED FOR THE ABOVE CITED SYSTEMS SHALL ALSO BE IN SCOPE OF CONTRACTORS WORK.

APPENDIX-II

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

SN	DESCRIPTION AND CAPACITY OF T&P	QUANTITY	REMARKS
01	CRAWLER CRANE 150 T	01 NO.	THIS CRANE WILL BE PROVIDED AFTER 2 ND MONTH FROM START OF ERECTION
02	LS-718 CRANE (325 TON)	01 SET	THIS CRANE WILL BE PROVIDED, IF NEEDED, WITH PRIOR CONSENT OF CONSTRUCTION MANAGER, BHEL
03	HUCK BOLTING MACHINE COMPLETE SET WITH ACCESSORIES, CONSUMABLES AND SPARES AS NEEDED FOR NORMAL OPERATION	01 SET	NIL
04	AIR LEAK TEST EQUIPMENT MACHINE WITH ALL ACCESSORIES	01 SET	POWER CABLE FOR AIR LEAK TEST EQUIPMENT TO BE PROVIDED BY THE CONTRACTOR.

NOTES:

1. OPERATOR FOR THE 325 T CRANE WILL BE PROVIDED BY BHEL.
2. CONTRACTOR SHALL ARRANGE/SHARE OPERATOR FOR THE 150 T CLASS CRANE.
3. CONTRACTOR SHALL PROVIDE THE FUEL FOR ABOVE CRANES PROVIDED FOR CONTRACTOR'S USE BOTH AT STORAGE YARD AS WELL AS AT SITE.
4. BHEL WILL MAKE AVAILABLE THE CRAWLER CRANES AT SITE ON SHARING BASIS MAINLY FOR THE PURPOSE OF:
 - (i) UNLOADING AND RE-HANDLING OF MATERIALS AT ERECTION SITE
 - (ii) LOADING AT ERECTION SITE FOR RETURN OF EXCESS MATERIALS
 - (iii) PRE-ASSEMBLY AND ERECTION.
 - (iv) ANY OTHER ERECTION RELATED ACTIVITY AT THE DISCRETION & APPROVAL OF BHEL SITE INCHARGE.
5. ALSO REFER SECTION-7.

APPENDIX-III

MAJOR TOOLS & PLANTS & MMD TO BE DEPLOYED BY THE CONTRACTOR

A: TOOL & PLANTS

SN	DESCRIPTION OF EQUIPMENT	CAPACITY	MINIMUM QUANTITY	REMARKS
01	CRAWLER CRANE	75 T	01	TO BE DEPLOYED FROM BEGINNING FOR START OF ERECTION
02	CRAWLER/TYRE -MOUNTED CRANE	18-25 T	01	TO BE DEPLOYED FROM BEGINNING
03	PICK AND CARRY CRANE	8/10 TON	01	TO BE DEPLOYED FROM BEGINNING
04	TRAILER WITH HORSE	15 TON - 20 TON	01	TO BE DEPLOYED FROM BEGINNING
05	AIR COMPRESSOR (ELECTRIC)	140 CFM	01	TO BE DEPLOYED AT APPROPRIATE STAGE OF WORK
06	SELF DRILLING CUM TAPPING MACHINE FOR SCREWS OF FLOOR GRILL & ROOF SHEETING	AS REQUIRED	01	TO BE DEPLOYED AT APPROPRIATE STAGE OF WORK
07	3 ph DISTRIBUTION BOARD WITH COMPLETE SET UP FOR DRAWING CONSTRUCTION POWER, FITTED WITH ENERGY METER	200 Amp	2 SETS	TO BE DEPLOYED FROM BEGINNING
08	WELDING GENERATOR (ELECTRIC & DIESEL)	300 AMPS	AS REQUIRED	TO BE DEPLOYED PROGRESSIVELY
09	ELECTRIC WINCH	1 TON / 2 TON / 3 TON	04 (TOTAL)	TO BE DEPLOYED PROGRESSIVELY
10	ELECTRIC CABLE FOR DRAWAL & DISTRIBUTION OF CONSTRUCTION POWER	AS PER SITE REQUIREMENT	AS PER SITE REQUIREMENT	TO BE DEPLOYED FROM BEGINNING
11	BAKING OVEN AND HOLDING OVEN WITH THERMOSTAT AND TEMPERATURE GAUGE FOR BAKING COATED WELDING ELECTRODES	AS PER REQUIREMENT	01 EACH	TO BE DEPLOYED AT APPROPRIATE STAGE OF WORK
12	PORTABLE OVEN FOR COATED WELDING ELECTRODES	AS PER REQUIREMENT	AS PER REQUIREMENT	TO BE DEPLOYED PROGRESSIVELY

NOTE:

1. CONTRACTOR SHALL ORGANIZE SUITABLE T & P FOR HANDLING & LOADING ON TRUCK/TRAILERS, PROVIDE TRUCK /TRAILER FOR TRANSPORTATION OF MATERIALS TO SITE WHICH HAVE COME BY RAILS AND UNLOADED AT UNLOADING BAY IN PLANT AREA.

B: MEASURING AND MONITORING DEVICES (MMD):

TO MEET REQUIREMENTS OF WORK (TO BE FINALIZED AT SITE).

APPENDIX -IV

ANALYSIS OF UNIT RATE QUOTED

SN	DESCRIPTION	% OF QUOTED RATE	REMARKS
01	SITE FACILITIES VIZ., ELECTRICITY, WATER OTHER INFRASTRUCTURE.		
02	SALARY AND WAGES + RETRENCHMENT BENEFITS		
03	CONSUMABLES		
04	T&P DEPRECIATION & MAINTENANCE		
05	ESTABLISHMENT & ADMINISTRATIVE EXPENSES		
06	OVERHEADS		
07	PROFIT		
TOTAL		100 %	

SIGNATURE OF THE TENDERER

DATE:

APPENDIX-V

FORMAT FOR MONTH-WISE MANPOWER DEPLOYMENT PLAN
(CATEGORY -WISE NUMBERS TO BE INDICATED FOR EACH MONTH)

SN	Description	Months																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
01	RESIDENT ENGINEER																											
02	ERECTION ENGINEERS																											
03	ERECTION SUPERVISORS																											
04	QUALITY ASSURANCE ENGINEER																											
05	SAFETY ENGINEER																											
06	MATERIALS MANAGEMENT SUPERVISORS																											
07	STRUCTURAL & OTHER WELDERS																											
08	FITTERS																											
09	CRANE OPERATOR																											
10	TRUCK/TRAILER DRIVERS																											
11	STORE KEEPERS																											
12	ELECTRICIANS																											
13	SEMISKILLED/ UNSKILLED WORKERS																											
	MONTH WISE TOTAL																											

* DEPLOYMENT FOR ENTIRE CONTRACT DURATION SHALL BE INDICATE. USE ADDITIONAL SHEETS IN IDENTICAL FORMAT FOR REMAINING CONTRACT PERIOD AND OTHER T&P

DATE:

SIGNATURE OF TENDERER

APPENDIX-VI

FORMAT FOR MONTHLY DEPLOYMENT PLAN FOR MAJOR TOOLS AND PLANTS

SN	DESCRIPTION & CAPACITY OF T&P	Months																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
01	CRAWLER CRANE 75T																											
02	CRAWLER CRANE 18-25T																											
03	PICK AND CARRY 8/10 T CRANE																											
04	TRAILER WITH HORSE																											
05	ELECTRIC WINCHES – ASSORTED CAPACITIES																											
06	WELDING M/C																											
07	ELECTRIC WINCH																											
08																												
09																												
10																												
11																												
12																												
13																												

* DEPLOYMENT FOR ENTIRE CONTRACT DURATION SHALL BE INDICATE. USE ADDITIONAL SHEETS IN IDENTICAL FORMAT FOR REMAINING CONTRACT PERIOD AND OTHER T&P

DATE:

SIGNATURE AND SEAL OF THE TENDERER

APPENDIX-VII

CONCURRENT COMMITMENTS

SN	FULL POSTAL ADDRESS OF CLIENT AND NAME OF OFFICER IN-CHARGE	DESCRIPTION OF THE WORK	VALUE OF THE CONTRACT	COMMENC-EMENT DATE	SCHEDULED COMPLETION	% COMPLTD. AS ON DATE	ANTICIPA - TED COMPLN. DATE	REMARKS

DATE:

SIGNATURE OF THE TENDERER

APPENDIX–VIII

DETAILS OF SIMILAR WORK DONE DURING THE LAST SEVEN YEARS

SN	FULL POSTAL ADDRESS OF CLIENT & NAME OF OFFICER IN CHARGE	DESCRIPTION OF WORK	VALUE OF CONTRACT (Rs.)	DATE OF AWARD OF WORK	DATE OF COMMENCEMENT OF WORK	ACTUAL COMPLETION TIME (MONTHS)	DATE OF ACTUAL COMPLETION OF WORK	REMARKS
1								
2								
3								
4								
5								

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