TENDER DOCUMENT

TENDER SPECIFICATION No : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

NAME OF WORK:

ELECTRICAL WORKS (ERECTION & COMMISSIONING) FOR REPLACEMENT OF PROCESS ELECTROSTATIC PRECIPITATOR (ESP), INVOLVING HANDLING AT SITE STORES / STORAGE YARD, TRANSPORTATION TO SITE OF WORK, ERECTION, TESTING AND COMMISSIONING OF ELECTRICAL COMPONENTS OF ESP, IN UNIT-1 & 2, SINTER PLANT – 1, ROURKELA STEEL PLANT, ROURKELA, ODISHA USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , CONSUMABLES, MANPOWER ETC.

Issued to M/s. :

PART – I (TECHNICAL BID)

ERECTION SERVICES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

RANIPET – 632 406

BHARAT HEAVY ELECTRICALS LIMITED
BOILER AUXILIARIES PLANT
RANIPET- 632406.

ERECTION SERVICES DEPARTMENT

TENDER SPECIFICATION NO. : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

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BHARAT HEAVY ELECTRICALS LIMITED
BOILER AUXILIARIES PLANT
RANIPET – 632 406

ERECTION SERVICES DEPARTMENT

SPECIAL INSTRUCTIONS TO BIDDERS

1. This Booklet consists of the scope and bill of quantities of the entire work etc.

2. The Bidders are requested to go through the instructions contained in the documents attached and quote in the Rate Schedule attached.

3. The Bidders are advised to go through the General conditions of contract, Special conditions of contract, Tender specifications and all parts of this tender document and fully understand the scope of work before quoting. Any doubt in the documents should be got clarified from Erection Services Department of BHEL, Ranipet before submitting their offer.

4. Bidders shall note that all consumables, tools & tackles and **all the required Cranes / Trucks / Trailers / Tractors etc.** are to be provided by the contractor.

5. **The Tender Documents should be submitted duly signed and stamped in all the pages** of the Tender Specification, General conditions of contract, special conditions of contract, Annexure etc. by the Bidder.

6. Offer of the Bidder with all the required documents should be submitted so as to reach the specified addressee as per schedule given in the Notice Inviting Tender.

7. ADDRESS FOR SUBMISSION / POSTING OF BID DOCUMENTS

THE OFFICE OF MANAGER ,
CIVIL TOWNSHIP,
(NEAR MUKUNDARAYAPURAM RAILWAY STATION)
BHARAT HEAVY ELECTRICALS LIMITED,
BOILER AUXILIARIES PLANT,
RANIPET – 632 406. , TAMILNADU.
Phone No.:04172 - 284883

8. Address for communication, clarifications etc.

THE DY. GENERAL MANAGER,
ERECTION SERVICES,
BHARAT HEAVY ELECTRICALS LIMITED,
BOILER AUXILIARIES PLANT,
RANIPET – 632 406.
Phone No.:04172 - 241171 / 284973 / 284554
Fax : 04172 - 242011
E- mail : mohankumar@bhelrpt.co.in
vramesh@bhelrpt.co.in

Contd…

9. **No advance payment towards mobilization of site operation** or for any other purpose will be made by BHEL. The payment for work will be made strictly as per payment terms in the tender specification.

10. The bidders shall submit the duly filled in **Formats** given in this Tender document, along with the offer.

11. **The retrofitting work shall be carried out in one ESP at a time by isolating it from the system.** Bidders are requested to carefully study and understand the sequence and schedule of activities as the retrofitting work affects the unit's operation. Time is the essence of the contract and all the resources required for completion of work in the stipulated time period has to be mobilized well in advance of the shutdown/ stipulated date.

12. BHEL is not bound to accept the lowest or any bid and will have the right to reject any or all the bids without assigning any reason whatsoever. It is to be noted that a two-part evaluation system will be used for this tender. Please read the relevant portions of the tender / NIT. Hence it is essential that the Bidder submits a comprehensive technical proposal in their bid.

13. **No special tools are envisaged to be provided by BHEL.**

14. Approval, if any, required from statutory authorities like Labour Commissioner, Electricity Board, etc., should be obtained by the bidder at his own cost and risk.

15. The bidder should mobilize maximum labour force from the local area of work.

16. These Tender Documents are not transferable.

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BHARAT HEAVY ELECTRICALS LIMITED

BOILER AUXILIARIES PLANT, RANIPET- 632406.

ERECTION SERVICES DEPARTMENT

NOTICE INVITING TENDER

Sealed offers in TWO PARTS are invited from experienced bidders meeting the requisite Qualifying Requirements (QR) for the work mentioned below. Points relevant to the tender are mentioned below and are to be complied with.

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1. TENDER SPECIFICATION NO. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238
   Dated 18.01.14
2. **NAME OF THE WORK** :

   ELECTRICAL WORKS (ERECTION AND COMMISSIONING) FOR REPLACEMENT OF PROCESS ELECTROSTATIC PRECIPITATOR (ESP), INVOLVING HANDLING AT SITE STORES / STORAGE YARD, TRANSPORTATION TO SITE OF WORK, ERECTION, TESTING AND COMMISSIONING OF ELECTRICAL COMPONENTS OF ESP, IN UNIT-1 & 2, SINTER PLANT – 1, ROURKELA STEEL PLANT, ROURKELA, ODISHA USING CONTRACTOR'S OWN TOOLS AND PLANTS, CRANES , CONSUMABLES, MANPOWER ETC.

3. **EARNEST MONEY DEPOSIT** : **Rs. 1,00,000/-** (Rupees One Lakh only)

3.1 **EARNEST MONEY DEPOSIT (EMD)** : The offer submitted must be accompanied by the prescribed amount of EARNEST MONEY DEPOSIT. EMD shall be remitted along with the tender in the form of pay order or DEMAND DRAFT only drawn in favour **of** BHARAT HEAVY ELECTRICALS LIMITED **payable at RANIPET**. EMD in the form of bank guarantee / fixed deposit receipt or in any other form **will not be accepted.**

3.2 One Time EMD remitted at any other BHEL Unit / Power Sector **will not** be considered. **EMD amount remitted at BHEL/ Ranipet against this tender will only be considered.**

3.3 **An offer / bid that is not accompanied by the requisite EMD amount is liable to be summarily rejected**.

4. **TENDER SCHEDULE :**

a.	START OF SALE OF TENDER DOCUMENTS	**20.01.2014 To 29.01.2014**
b.	PRE- BID MEETING	**Not Applicable**
c.	START DATE & TIME FOR BID SUBMISSION	**25.01.2014 at 10.00 Hrs**
d.	DUE DATE & TIME FOR BID SUMBISSION	**30.01.2014 at 14.30 Hrs.**
e.	DATE & TIME OF OPENING OF TECHNICAL BID	**30.01.2014 at 15.00 Hrs.**

Note : ***Please obtain updated information from the BHEL website about the latest applicable dates.)***

5. **PRE BID MEETING :** Not applicable

6. **OPENING OF TENDER**: Technical bids will be opened on the mentioned date at the office of THE MANAGER, CIVIL TOWNSHIP, NEAR MUKUNDARAYAPURAM RAILWAY STATION, BHEL, Ranipet.

NOTICE INVITING TENDER

6.1 In case the opening of the tender is a non-working day then the opening will be done on the next working day as per the time schedule.

7. Tender specification documents with complete details are hosted in web page (www.bhel.com). Bidders can directly download the same and use for submission of offer. Tender document charges shall be paid to BHEL along with or before submission of offer.

8. Interested bidders may alternately collect hard copy of tender specification documents from Erection Services Dept / BHEL / Ranipet on all working days (between 10.00 to 14.00 hrs) within the sale period on payment of tender document charges.

9. **Tender specification document charges (Non-refundable)** : Charges for Tender Specification document @ Rs.2000/- per Tender Specification shall be paid through Account Payee Demand Draft in favour of "Bharat Heavy Electricals Limited" payable at Ranipet or in Cash at the cash counter of BAP/Ranipet. In the case of downloading of Tender Specification documents etc. from the web page, the bidder shall remit the tender document charges (Rs.2000/-) positively along with or before submission of offer. In the case of request by the bidder for dispatch of Tender Specification documents through Courier/Post, extra charges shall be paid @ Rs.500/- per Tender Specification. The tender documents are not transferable.

10. BHEL will not take any responsibility for delay/loss of documents or correspondence sent by courier/post.

11. All corrigenda, addenda, amendments, clarifications etc. to tender specification will be hosted in the web page (www.bhel.com **> Tender notifications > view corrigendum**) only and not in the news paper. Bidders shall keep themselves updated with all such developments.

12. **QUALIFYING REQUIREMENTS (QR) :**
Bidders shall essentially meet all the qualifying requirements in (a) & (b) as under:

a. Bidder must have successfully executed Erection and Commissioning of **Electrical** / "**Electrical and C&I" work** in industries like steel plants, Refineries, Cement plants, Thermal Power plants, Captive power plants etc. in the last seven years as on 31.12.2013 as follows.

(i) One work of atleast Rs.26.00 lakhs in a single work order.
(ii) Two works of atleast Rs.16.00 Lakhs each..
(iii) Three works of atleast Rs.13.00 Lakhs each.

(AND)

b. The contractor must have achieved minimum average annual financial turn over of **Rs.10.00 Lakhs** during the last three financial years (FY) ending on 31/03//2013 or 31/03/2012, if the account for the FY 12-13 is not audited.

Fulfillment of QUALIFYING REQUIREMENTS: A bidder must satisfy all the qualifying requirements enumerated as in (a) & (b) above concurrently in order to qualify to participate in this tender.

13. Erection and commissioning of Electrical and C&I work mentioned in 12.0 above shall mean works involving both Electrical and C & I parts with major being that of Electrical. Normal O & M works/ Services, replacement of limited quantities of spares and minor rectification works shall not be considered as Erection. Successful execution shall mean the erected system / equipment has been commissioned.

NOTICE INVITING TENDER

14. **<u>Supporting documents for QR</u>:**
Bidder shall submit documents in support of possessing qualifying requirements as under, duly self certified and stamped by the authorized signatory.

    (i) List of jobs done with the name of the project, Owner of the project, Name of the customer, Work order reference No and date, brief details of jobs, executed value, date of start, date of completion.

    (ii) Certified Photocopies of work orders issued by the Customer containing details of bill of quantities/schedule of rates and certificates for proof of satisfactory completion of work.

    (iii) Certified Photo copies of Audited profit and loss account, Balance sheet and IT returns for the last three years, accompanied by relevant schedules for turn over figures.

15. **Acceptance of any bid shall be subject to the approval by BHEL's Customer/ Client.**

16. **Seeking clarification on Tender Specification:** Clarifications, if any shall be sought through written communication only, indicating the specific clauses in the Tender Document, so as to reach the specified office at least five days before the last date for bid submission. BHEL shall not be responsible for receipt of queries after the due date for seeking of clarification due to postal delay. Any clarification / query received after the last date for seeking the same may not be normally entertained by BHEL and no time extension will be given.

17. BHEL may decide holding pre-bid meeting (PBM) with any /all intending bidders. On such communication from BHEL, the bidder shall ensure participation in the same at the appointed time, date and place as may be decided by BHEL. **Bidders are advised to visit the site and completely familiarize themselves with the site conditions for this Retrofit job.**

18. All the information as called for in the various clauses and annexure of tender specification should be furnished. Please refer to the check list. The details so furnished shall be complete in all respects and as per the formats prescribed in the Tender specification (Statutory requirement of Contract). The bidder may have to produce original documents for verification, if so desired by BHEL.

19. BHEL reserves the right to reject any offer on the basis of unsatisfactory performance of the bidder in any on going job or any similar job in the past.

20. BHEL will operate CPSE purchase preference policy as applicable.

21. Offers received with any deviation or without relevant information are liable to be rejected.

22. Price bids received in any form other than prescribed in Part-II (PRICE BID) are liable to be rejected.

23. BHEL reserves the right to accept or reject any or all the bids without assigning any reasons whatsoever.

24. **VALIDITY OF OFFER**: The validity of the offer shall be 180 days from the date of bid opening (including extensions , if any). No unsolicited revision in the tender offer shall be entertained after opening of tenders and till expiry of the validity period.

25. **LIQUIDATED DAMAGES**: BHEL will impose Liquidated Damages as per suitable clauses in the Tender Specifications on account of delay, violation of contract conditions and non-performance attributable to the contractor.

NOTICE INVITING TENDER

26. **REVERSE AUCTION (RA)**: BHEL reserves the right to go for Reverse Auction (English Reverse (No Ties) – ON LINE BIDDING on INTERNET) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give acceptance to participate in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.

    In case BHEL decides to go for reverse auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the reverse auction. Those bidders who have given their acceptance to participate in reverse auction will have to necessarily submit online sealed bid in the reverse auction. Non-submission of online sealed bid by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue. For details refer to the **General Terms and Conditions of reverse auction** in SECTION-VII.

27. If the reverse auction is unsuccessful as defined in the RA rules / procedure, or for whatsoever reason, the sealed Price Bids may be opened for deciding the successful bidder.

28. **BID EVALUATION** : The offer submitted by bidders who meet the requisite Qualifying Requirements will be evaluated in two stages, namely Technical- Bid Evaluation and Price Bid Evaluation. The Technical bid will be evaluated as per 'Technical-bid Acceptance Criteria' (TAC) enumerated in ANNEXURE-1 to NIT. The bids which obtain the minimum score specified in the TAC will only be acceptable and further considered for Price Bid Evaluation.

29. Bidders whose technical bids are found acceptable to BHEL shall be intimated separately about the status of their offers. Date of price bid opening shall be intimated to the qualified bidders only.

30. **PRICE BID EVALUATION CRITERIA:** The successful bid shall be based only on the Total quoted value for the entire scope of work, in the sealed "Price bid" or RA, as applicable.

31. The offers of the bidders who are on the banned list as also the offer of the bidders, who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL web site " www.bhel.com".

32. **EPF registration:** Bidders should furnish the EPF code and registration details along with the bid. Bidders who have not registered and do not possess EPF code, if awarded the work, should immediately register and obtain the code.

33. **Benefits to Micro, Small & Medium Enterprises (MSE):** Guidelines of the Govt. of India shall be followed to provide benefits to MSE. MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM-II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM-II certificate along with CA certificate (Format enclosed as per Appendix – IV) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) where the deemed validity of EM-II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents

34. **ORDER OF PRECEDENCE:** In the event of any ambiguity or conflict between the clauses / statements in Tender Documents, the order of precedence shall be in the order below.
    a. Amendments / clarifications / corrigenda / errata etc. issued.
    b. Notice Inviting Tender (NIT)

c. Price Bid
d. Technical Conditions of Contract
e. Special Conditions of Contract
f. General Conditions of Contract
g. Forms & Procedures

35. In the event of any conflict between requirements of a clause/s of this specification /documents/drawings/data sheets etc. and different standards / codes specified, the same is to be brought to the notice of BHEL before submission of offer; else BHEL's interpretation shall prevail.

36. Typographical error/missing pages/other errors in the tender documents noticed, must be brought to the knowledge of BHEL in writing before pre-bid meeting / submission of offer, else BHEL's interpretation shall prevail.

ANNEXURE – I				
Technical bid acceptance Criteria (TAC)				
S. No	**Evaluation Parameter**	**Document to be submitted**	**Max Score (MS)**	**Evaluated Score (WS)**
1	**General Technical Competence based on past experience** More than 10 years experience in Electrical works in Power plants, Steel Plants etc. Gets 20 marks. Anything less gets marks proportionate to no. of years of experience	List of works & Completion certificate	20	
2	**Ability to complete on Schedule based on past records** Contractor to submit the actual time periods of completion for his past projects along with contractual schedules	Proof of contract dates	5	
3	**Similar ESP Retrofit Experience** 03 or more ESP Electrical works gets 15 marks. Anything less gets proportionate marks	Completion letter/certificate	15	
4	**Past Safety Records & Safety Plan Proposed** Reasonable and complete Plan gets 05 marks. Else proportionate	Plan/Availability of safety officer	5	
5	**Electrical Contractor License** If License is available in own name 05 marks. If license is to be obtained through another agency 0 marks.	Verifiable document	5	
6	**Work Breakdown Structure and Time Schedule** Reasonable and complete schedule gets 10 marks. Else proportionate marks	Macro Schedule	10	
7	**Appropriate Equipment committed to be mobilized** If cranes, Tools & tackles, Testing equipment are covered with appropriate numbers including source for procurement 15 marks; else proportionate marks	Equipment list	15	
8	**Company Organization and Appropriate Project Staff Organisaion** If appropriate no. of staff with 10 years similar erection experience are committed 05 marks; else proportionate	Staff list	5	
9	**Appropriate Skilled Labour committed to be mobilized** If appropriate no. of skilled labour with similar erection experience are committed 05 marks; else proportionate	Letters/ Certificate	5	
10	**Status reporting and Quality Control** Appropriate Quality Assurance procedures for different works and appropriate project reporting system	Quality document	5	
11	**Bid Appreciation / Site visit** If site problems are brought out and site visit has been made 05 marks; else proportionate	Proof of visit	5	
12	**Completeness of bid submission** If all stipulated documents are submitted 05 marks; else proportionate	Index and corresponding contents	5	
	Maximum Total Points (MS)		**100**	
	Acceptance of Technical bid - Minimum Score to pass Technical Evaluation		**50**	

BHARAT HEAVY ELECTRICALS LIMITED

BOILER AUXILIARIES PLANT
RANIPET- 632406.
ERECTION SERVICES DEPARTMENT

PROCEDURE FOR SUBMISSION OF SEALED TENDERS

A. The bidders must submit their offer in two parts in separate sealed covers prominently superscribed as PART-I TECHNICAL BID and PART-II PRICE BID and also indicating on each of the covers the following details.

   a. TENDER SPECIFICATION NUMBER
   b. NAME OF WORK and
   c. DUE DATE AND TIME FOR SUBMISSION

B. **PART-I (TECHNICAL BID) COVER-I :**

   a. Excepting Rate Schedule, all other schedules, data sheets, formats. drawings and other details called for in the NIT / specification shall be enclosed in Part-I "Technical Bid".
   b. Supporting documents / annexure etc. as required in line with Qualifying Requirement shall be enclosed. The documents shall be indexed properly.
   c. Part – II: (UNPRICED) – without indicating rates / price, but mentioning 'QUOTED' against each item. **The Rate of Tax applicable (in %) shall only be indicated in the appropriate columns / space provided.**

C. **PART-II (PRICE BID) COVER-II :**

   a. All indications of price shall be given in this PART-II "Price Bid" only. Discounts, if any shall be indicated only in the price bid.

D. These two Covers - I & II (PART-I AND PART-II) shall together be enclosed in a **third envelope (COVER-III) along with requisite EMD** as mentioned in the Notice Inviting Tender and this SEALED COVER shall be superscribed and submitted to **THE MANAGER, CIVIL TOWNSHIP**, BHEL, Ranipet at the address given in "Special Instructions to Bidders " on or before the due date.

TENDER SPECIFICATION NO. : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

PROJECT INFORMATION

1. Purchaser and Owner : M/s. ROURKELA STEEL PLANT (SAIL), ROURKELA

2. Location : **PROCESS ESP, SINTER PLANT – I** ROURKELA STEEL PLANT ROURKELA, ODISHA.

3. Nearest Railway station : Rourkela

4. Air Quality : Normal Power Plant conditions

5. **Climate & Limitation to work**

	Description	**From**	**To**
Season (months)	Summer	March	May
	Rain	June	September
	Winter	Dec	Jan

Monthly Wind, Rainfall and Temperature			
Month	Avg. Rainfall (mm)	Atmospheric Temperature (deg c)	
January	5.12	24.7	8.7
February	18.52	27.2	11.6
March	3.74	33.5	15.7
April	23.2	38.8	21.5
May	40.02	40.9	25.3
June	199.02	38.5	26.8
July	380.46	33.2	25.2
August	385.36	32.5	24.9
September	265.72	32.7	24
October	44.66	32.1	20.1
November	18.48	29.2	14.3
December	8.54	25.5	9.4
Above Data is from : India Meteorological Department (http://www.imd.gov.in/)			

Highest parameters recorded	Value	Month
Peak Rainfall (mm)	385.36	August
Peak Wind velocity(m/s)	39	
Highest Temperature (deg)	40.9	May
Lowest Temperature (deg)	8.7	January

Before submitting his/her/their offer, the Bidder has to get thoroughly acquainted with the site conditions with reference to Operating procedures inside the plant, security rules for access and movements, HSE rules prevailing in the plant, site interference problems, movement of cranes / derricks etc. in the store yard / work site during material handling, erection, storage facilities available, constraints on access and movements, etc. No compensation or revision of rates will be entertained at a later date for not having proper knowledge of the site conditions.

O-o-o-o-o-o-o-o-o-o-o-o-O

TENDER SPECIFICATION

TENDER SPECIFICATION No : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

1.0 SCOPE OF WORK :The scope of electrical work in Electrostatic Precipitator (ESP) includes handling at BHEL/Customer storage yard and shifting of new electrical components of ESP to site of erection, Erection, testing and commissioning of electrical components of ESP, in Unit-1 & 2, Sinter Plant-1, Rourkela Steel Plant, Rourkela, Odisha using contractor's own tools and plants, cranes , consumables, manpower etc.

1.1 **Detailed scope of work:** The scope of work consists of the following major parts.

a. Erection & commissioning of electrical components of ESP (BHEL supplied).
b. Electrical works of new dust conveying system.

The detailed scope of work is explained herein under and further enumerated in the **Annexure–IV** attached with this tender specification, Special Conditions of Contract and Schedule of Rates & Quantities attached along with this tender. Trial-run, testing & commissioning of the entire system within the contract time and to the entire satisfaction of the of M/s RSP and BHEL forms part of the work.

1.2 The Sinter Plant has two machines/ units and each machine / unit has one ESP. Replacement work will be carried out for one ESP at a time by isolating the same during a short shutdown of the sinter machine. While replacement of an ESP is in progress, the Plant will be in operation through the second ESP. Hence necessary precautions are to be taken while executing the work.

1.3 Work includes handling of ESP components at site stores / storage yards, transportation to site of erection, handling at site of erection, preassembly, water washing etc. complete and hook up of the entire system as per drawings of BHEL.

1.4 The distance of BHEL / Customer stores / storage yard within the plant to site of erection is in a radius of about 2.0 km.

1.5 Area illumination for enabling the execution of electrical work shall be in the scope of contractor.

1.6 All the ESP materials & components (except that specifically mentioned in rate schedule, special conditions etc.) will be supplied by BHEL / Client on free issue basis and the contractor has to take receipt of them at the designated point, store them carefully, use them in the works as specified and required and finally account for them.

1.7 Erection High Voltage Rectifier (HVR) Transformers shall be carried out by other agencies. However, testing and commissioning shall be in the scope the contractor.

1.8 Fabrication and erection of temporary structures, platforms, supports etc. for erection of Electrical components of ESP forms part of the work. The temporary structures etc. erected shall be removed after completion of work at no extra cost.

1.9 Adequate quantity of Tools & tackles shall be arranged by the contractor for safe erection of the Electrical components.

1.10 Being a retrofitting job, any work like cutting/grinding etc. of supplied materials/existing materials to suit to site conditions shall form part of the erection work and no extra charges will be paid on this account.

1.11 After completion of work, all the materials/equipment removed/shifted shall be re-installed/re-erected/placed back in their original locations or at locations as instructed by BHEL.

1.12 The contractor shall make suitable security arrangements including employment of security personnel (round the clock) to ensure the protection of all materials/equipments and works from theft, fire, pilferage and any other damage and loss at stores/storage yard/pre-assembly area/erection site, till the completion of work.

1.13 Trial-run, testing & commissioning of the entire system within the contract time and to the entire satisfaction of the customer and BHEL forms part of the work.

2.0 ROUND THE CLOCK WORK: Part of the work is to be carried during shutdown of the running plant and the relevant works have to be completed within the planned shutdown. This will call for working with enhanced resources and round the clock. The contractor shall provide for suitable illumination, security, labour amenities, etc for such working. Necessary safety gadgets shall be provided and ensured for the manpower during late hours. The bidder shall consider all such contingencies in their offer.

3.0 TERMINAL POINTS: The terminal points for erection shall be from Inlet duct to Outlet duct of ESP and outlet of Dust Conveying system in the existing system below ESP..

4.0 SITE LOCATION: Please see project information sheet.

5.0 TOOLS & TACKLES: It may be noted that **BHEL will not provide** any cranes , trailors / trucks / tractors, tools and testing kit/ instruments for execution of the work. All required resources including derricks, winches, test kits, wire ropes and tackles, etc are to be arranged by the contractor only. The quoted the rate shall consider all the eventualities that may arise during such works.

6.0 CONSTRUCTION POWER & WATER: Required construction power and water to site shall be provided by BHEL on FREE OF CHARGE at one point only (within 500m). Necessary power cabling from the source to distribution boards, energy meters etc. and distribution pipe lines to different locations of water point with taps, valves etc., shall be provided by the bidder at his cost.

7.0 HEALTH, ENVIRONMENT AND SAFETY: The contractor shall follow good safety practices at the site. All personnel shall be provided the required safety protective gear and contractor to ensure that they are used. Safety training to be provided to all personnel at the site. In addition, the prevailing rules and regulations pertaining to Health, Environment and Safety (HSE) procedures of M/s RSP, project site rules, prevailing labour laws enforced by local authorities, labour regulations, movement of labour / vehicles inside the plant area, time keeping systems etc., in force and other local political conditions shall be studied before submission of this budgetary offer. The bidder shall submit a write-up, along with the Technical-bid, on the HSE procedures to be adopted subject to modification and acceptance by BHEL, covering at minimum Personal Protective Equipment such as helmets, hard shoes, goggles, gloves, etc, safety training to staff and labour, daily safety pep talks & inspections, safety sign boards, housekeeping procedures, etc.

8.0 COMPLIANCE TO STATUTORY REQUIREMENTS: It is the responsibility of the contractor to obtain the required labour license from the appropriate authorities before commencement of work.

8.1 The contractor shall comply with all State/Central Laws, Statutory Rules, Regulations etc. inclusive of those regarding Labour and Industrial Laws which are applicable from time to time and shall comply with the provision of the same Labour Legislation, Rules and Regulations

framed under the provision of Employees' Provident Fund and Miscellaneous Provision Act 1952, ESI registration, Labour License etc..

8.2 **ELECTRICAL CONTRACTORS LICENSE**: The Bidder shall enclose a copy of valid electrical contractors license applicable for the state where the site is located valid till commissioning of the ESP. In case the Bidder is not in possession of such a license, they may execute the work through any other agency having such valid license. This may be indicated in the offer itself and acceptance of such party may be enclosed with the offers. Offers not having any of these are liable to be rejected.

9.0 APPROVAL FROM CIEG : It is the responsibility of the Bidder to test, commission and obtain necessary safety certificates & approvals from the Electrical authorities for the equipment installed / erected by them and by the other agencies to enable commissioning of the system.

10.0 SITE MANAGEMENT :

a. The contractor shall arrange to print all materials management forms, daily labour progress reports, and all other forms & reports etc., as indicated / instructed by BHEL and customer's HSE plan and project site rules. The Contractor shall depute well experienced senior site manager who shall liaise with BHEL and clients coordinate all resources and works and complete the job satisfactorily. The bidder shall submit in his Technical bid a resume of the proposed site manager. In addition, the Contractor shall mobilize adequate numbers of well experienced site technical supervisory staff as well as skilled and unskilled labour.

b. Erection Progress Reports shall be accompanied by Photographs (both hard & soft copies) as directed by BHEL Engineer at site.

11.0 MOBILISATION ADVANCE: No advance payment towards mobilization of site operation or for any other purpose will be made by BHEL. The payment for work will be made strictly as per payment terms in the tender specification.

12.0 FIRM PRICE : The Contractor has to keep his quoted rates firm for the entire contractual period including total extended period, if any, and no claim for revision of rates or price escalation is allowed under any circumstances.

13.0 VARIATION IN QUANTUM OF WORK : The details of quantum of work are indicated in the rate schedule which is only approximate and is likely to vary to the extent of PLUS or MINUS 15% of the scheduled quantities.(except for Sl. No. I for which the quantities may vary beyond 15%).

14.0 EARNEST MONEY DEPOSIT (EMD) : The EMD amount to be remitted along with the offer and the mode of remittance shall be as indicated in the "Notice Inviting Tender".

15.0 SECURITY DEPOSIT (SD) : The successful Bidder shall within the time specified in the letter of intent deposit the required amount of security deposit. The SD shall be as per clause 1.8 of General Conditions of Contract (GCC).

16.0 TAXES AND DUTIES : Refer Annexure–III for terms & conditions related to Taxes & Duties.

17.0 PAYMENT TERMS : All payments for the works completed shall be paid based on bills raised by the contractor as payment terms and certified by Engineer-in-Charge of BHEL. **Payment for works will be made within a period of 30 days from the date of submission of bills along with all the enclosures as called for by BHEL. Payment will be only through e-payment** (through electronic fund transfer (EFT) / RTGS) only after deducting Bank charges as per BHEL terms of payment.

17.1 DETAILS OF PAYMENT TERMS FOR ERECTION & COMMISSIONG: The payment terms shall be as per clause 3.22. of Special Conditions of Contract for Electrical works (SCC - Section-III).

17.2 DETAILS OF PAYMENT TERMS FOR SUPPLY PART : Not Applicable.

18.0 PERIOD OF CONTRACT / DURATION OF WORK : **The total duration for the tendered scope of replacement work is 05 (Five) Months. The time period shall commence from date of dismantling of first component at site, as certified by BHEL Site Engineer**. The Time period for shutdown and erection activity are enumerated below and shall be strictly adhered to.

18.1 **Tentative Time period of work : Refer Annexure -II**

18.2 The contractor shall mobilise the resources like manpower, cranes, consumables, tools and plants required to complete the entire work with in the above said schedule.

19.0 LIST OF TOOLS & TACKLES : The list of Tools and tackles, cranes etc proposed to be deployed by the contractor shall be given along with the offer. In case of cranes, the range diagrams and load charts should be included for the models to be used for the job.

20.0 G.A Drawing : Layout drawing is attached for reference. The drawings are for 'Tender' purposes only, even if indicated otherwise, which may undergo revisions / changes during construction /execution stage.

21.0 Accommodation for Contractors' personnel : BHEL **shall not** provide any accommodation facilities for the contractors' personnel. All the necessary arrangements have to be made by the contractor, outside the Plant premises, at no extra cost to BHEL.

22.0 LIQUIDATED DAMAGES : If the work completion gets delayed and the contract period gets extended due to reasons attributable to the bidder, liquidated damages as per provisions of contract (clause No.2.7.5 of General conditions of Contract for Works) shall apply. All decisions of BHEL in this regard will only be final and binding on the Bidder.

23.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORKS: Refer Section-V of the special conditions of contract.

24.0 OVER-RUN COMPENSATION (ORC): Refer Section-VI of the special conditions of contract.

25.0 The following documents enclosed shall also form part of the tender:

a. Technical bid evaluation Criteria – (Annexure-I)
b. Tentative Schedule of activities – (Annexure –II)
c. Taxes & Duties - (Annexure –III)
d. Technical Specification & scope of work – (Annexure- IV)
e. General terms and conditions of work (ES:F:010)
f. Special Conditions of Contract for Electrical works of ESP (BAP:ERN:ELE:SPN:ESP:01 – SECTION-III& IV)
g. Special Conditions of Contract – (Section –V & VI)
h. General Terms and Conditions for REVERSE AUCTION (SECTION-VII)
i. Statutory requirement of contract (ES:F:009)
j. Appendix-I, II, III and IV

k. Drawings for Tender purpose

i. Layout of ESP
ii. Typical arrangement of Disconnecting switch & Support Insulator heater
iii. Typical installation arrangement of Thermostat in Hopper.
iv. Typical installation arrangement of Hopper heater.
v. Typical installation arrangement of Ash level indicator.

ANNEXURE – II

TENDER SPECIFICATION No. : : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238

TENTATIVE SCHEDULE OF ACTIVITIES FOR ELECTRICAL WORK

The dates for each activity given below are only indicative and are likely to change depending on other related activities. The contractor shall ensure that the work is completed within the Time Period stipulated.

S.NO	Description of work	No. of Days	January 2014	February 2014	March 2014	April 2014	May 2014	June 2014
01.	Electrical works for replacement of ESP in Unit-2 during Shutdown (including Testing and commissioning).	20 Days		[redacted]				
02.	Electrical works for replacement of ESP in Unit-1 during Shutdown (including Testing and commissioning).	20 Days				[redacted]		

ANNEXURE – III

TAXES AND DUTIES

A. FOR ERECTION & COMMISSIONING :

1.0 Rates quoted shall include all royalties, taxes, terminal taxes, Octroi, duties, Sales Tax on Works Contract, Entry Tax, Licenses, Deposits, Royalty, Stamp Duty, Central or Provincial Excise Tax and other taxes **(except Service Tax)** leviable under the state and the central Government Rules. BHEL will not entertain any claim whatsoever in this respect. No reimbursement on account of increase in rate of existing levies shall be made.

1.1 **SERVICE TAX**

1.1.1 The Bidder shall not include Service Tax in their quoted rates; but the bidder has to separately indicate the Service Tax rate, amount and workings thereof in the Price bid schedule included in the bid documents.

1.1.2 If service tax amount is not indicated separately in the price bid schedule included in the Bid documents, it will be presumed that the quoted rate is inclusive of applicable service tax and bids will be evaluated accordingly.

1.1.3 The bidder shall furnish proof of service tax registration with Central Excise Department specifying the name of services covered under this contract. Registration Certificate should also bear the endorsement for the premises from where the billing shall be done by the bidder on BHEL for this project.

1.1.4 **Pure Service not involving any supply of materials by Contractor:**

a) Bidders have to quote the applicable Service Tax payable in the Price bid format included in the Bid document which shall be considered for evaluation. The same shall be considered for reimbursement against valid documentary evidence to successful bidders ie. Service Tax Registration Certificate, Original Invoice, Service Tax Payment Certificate and copy of Service Tax payment Challan.

1.2 **VALUE ADDED TAX (VAT) FOR THE WORKS**

1.2.1 **Price quoted shall be inclusive of VAT except service tax. :** Notwithstanding the fact that this is only an erection service contract not involving any transfer of materials whatsoever and not attracting VAT liability, being labour oriented job work, for the purpose of VAT the contractor has to maintain the complete data relating to the expenditure incurred towards wages etc. in respect of the staff/workers employed for this work as also details of purchase of materials like consumables, spares etc., inter alia indicating the name of the supplier, address and VAT Registration No. and VAT paid for the purchases, etc.

1.2.2 The bidder shall get registered with State VAT authorities and the registration certificate shall be forwarded to BHEL immediately after commencement of work. In case the bidder had already registered under respective State VAT, they must quote their registration Number and forward copy of Registration Certificate while submitting this tender.

1.2.3 The monthly/quarterly VAT return, duly incorporating the erection income from BHEL as turnover, should be submitted to BHEL at regular intervals with all annexure and details of payment of VAT (WCT).

1.2.4 You have to obtain VAT Clearance Certificate from the concerned authorities as per the provisions of local VAT act, on completion of the project and submit along with the final bill.

B. FOR SUPPLY PART : Not Applicable

C. OTHER TERMS & CONDITIONS

1.0 **New Levies / Taxes :** 16.4.1 In case Government imposes any new levy / tax after award of the work during the tenure of the contract, BHEL shall reimburse the same at actual on submission of documentary proof of payment subject to the satisfaction of BHEL that such new levy / tax is applicable to this contract. However, this is applicable for contract delivery period only.

2.0 **Statutory variations:** Statutory variations are applicable only in the cases of changes in Value Added Tax and Service Tax, during the contract delivery period. The changes implemented by the Central / State Government in the VAT Act / Service Tax during the contract deliver period, viz. increase / decrease in the rate of taxes, applicability, etc. and its impact on upward revision / downward revision are to be suitably paid/ adjusted from the date of respective variation. The bidder shall give the benefit of downward revision in favour of BHEL. No other variations shall be allowed during the tenure of the contract.

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

ANNEXURE – IV

TENDER SPECIFICATION No : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

TECHNICAL SPECIFICATION & SCOPE OF WORK

1. INTRODUCTION TO THE PROJECT

1.1 Steel Authority of India Limited, Rourkela Steel Plant has two sinter plants in operation. The Sinter Plant – I is of 2X125 Sqm sintering area. At Sinter Plant – I multi cyclones were provided in the process waste gas line. In the year 1995, the multi cyclones were replaced with Process ESPs supplied by M/s Orient engineers. Due to aging and degradation of performance of the old existing ESPs, M/s SAIL- RSP have decided to replace them.

1.2 The broad scope of supply includes new ESPs with casings, all ESP internals, rapping system, TR sets and electrics etc.

1.3 The following existing ESP components, structures etc. are to be retained.

a. ESP Supporting structure up to +10170 mm level (i.e. up to the top of bottom girder).

b. Hoppers (06 per ESP).

c. Ducting arrangement is to be retained / reused and shall be modified to suit and connect the new ESPs.

d. Hopper approach platforms.

e. Dust disposal system consisting chain conveyors, valves etc. below hoppers.

1.4 After replacement of ESPs, the system configuration will be as below.

S.No.	Parameter description	Value	Unit
1.	ESP size / nomenclature	FAA - 3 X 37.5M + 45M– 112155 - 2	
2.	Number of ESPs per sinter machine	1	No.
3.	Number of Sinter machines / isolatable gas paths	2	No.
4.	No. of Fields per ESP after replacement work	4	No.
5.	Nominal length of field along gas flow	3.75 & 4.50	m
6.	Pitch of collecting electrode	400	mm
7.	Nominal height of Collecting electrodes	15.5	m
8.	Total No. of Collecting Electrodes per ESP	506	No.
9.	Type of Emitting Electrodes	Spiral wire type	
10.	Total No. of Emitting Electrodes per ESP	506	No.
11.	Thermal Insulation -	75	mm
12.	Thermal insulation - Plain Aluminum Sheet cladding thickness	0.91	mm

2.0 **RETROFITTING METHODOLOGY** :

2.1 Both the existing process ESPs are to be replaced with new ESPs. Sinter machine – I A is to be shut down for a period of 45 Days for dismantling of existing ESP-IA and installing new ESP-IA. Sinter machine – IB along with existing ESP shall be in operation during this period.

2.2 After successful commissioning of the new ESP IA, Sinter machine- IA is to be put into operation. Subsequently, Sinter machine- IB is to be shut down for a period of 45 Days for dismantling of existing ESP IB and for installing new ESP- IB.

2.3 The existing ESP control room houses ESP Switch gear panels, Lighting Distribution panels in the ground floor and EC panels & Rapper control panels in the First floor. These will be dismantled by another agency / BHEL.

3.0 . New ESP switchgear panels, Electronic Control panels etc. are to be erected in the existing control room.

4.0 **BRIEF SCOPE OF SUPPLY (BY BHEL)**

4.1 The scope of supply of new electrical components by BHEL for retrofitting of ESP will include, but not limited, to the following.

4.2 High voltage Disconnecting Switches between the transformer rectifier and the high voltage emitting system complete.

4.3 Eight numbers (08 per Unit) of mineral oil immersed High Voltage Rectifier (HVR) Transformer rectifier units (95 KV,1800mA, 95 KV 2000 mA).

4.4 Microcontroller based Precipitator Controller (ARECA) housed in the electronic control cubicles (Electronic control panels -ECP). The EC panels will be housed in the existing control room A/C area.

4.5 Heating elements of tubular type for the hoppers, support insulators and shaft insulators complete with thermostats.

4.6 Ash level indicator (Radio frequency type) for high and low level, for old hoppers and new hoppers.

4.7 Two numbers (02 nos. per Unit) of opacity monitor, one number at the outlet duct of each ID fan near to chimney shall be provided for continuous dust monitoring.

4.8 Interlock system consisting of key exchange boxes and interlocks for personnel protection arranged so that access to any high voltage equipment is prevented until the high voltage system is de-energised and grounded.

4.9 All the power and control cables of armoured type.

4.10 Ladder type trays.

4.11 Earthling materials.

4.12 PC based Precipitator Integrated Operating System (IOS) to enable UCB operator to access the ESP for control, monitoring and data acquisition functions. The IOS-PC, Data logger PC and Printer will be kept at the UCB. This IOS (for each Boiler) consists of

- 1 number of PC (IOS-PC),
- 1 number of PC based data logger,
- 1 number printer
- 1 set of microcontroller based Rapper controller (Intellirap).
- 1 set of STATCON

4.13 One number (01 per Unit) IOS Panel to house Intellirap controllers, which will be at ESP control room.

4.14 Structural steel materials (angles, channels etc) for fabrication of supports for cable trays, junction boxes, panels etc,

5.0 **EXCLUSIONS**

5.1 Dismantling of existing electrical components like cables, cable trays, panels, High Voltage rectifier transformer (HVR) etc. These will be dismantled by BHEL / Other agency.

5.2 Erection of new HVR transformer. These will be erected by BHEL / Other agency, but testing is in the scope of electrical works.

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APPENDIX - I

LIST OF MAJOR TOOLS & TACKLES , TESTING & MEASUREING INSTRUMENTS/ TOOLS AND TRACKLES TO BE ARRANGED/BROUGHT BY CONTRACTOR.

This is only an indicative list. All the tools & tackles, equipment, instruments, test kits etc. required for completion of the work shall be arranged by the contractor. **All safety equipment required for this work shall be arranged by the contractor. All safety regulations of BHEL/their client M/s.RSP must be followed by the contractor during the erection work.**

SL.NO.	Description
I .	**INSTRUMENTS , TEST KITS AND EQUIPMENT**
01	Primary Injection Kits
02	Secondary Injection Kits
03	Motorised Megger (2.5/5 KV)
04	Micro ohm Meters
05	HV Test Kit
06	Digital Multimeters (31/2/4 ½ Digit)
07	Insulation tester hand operated 250V/500V/1000V rated mains/battery operated (Megger).
08	Tong testers
09	Industrial type vacuum cleaner
10	Transformer Oil Filtration Machine and BDV Test Kit
II.	**HANDLING EQUIPMENT**
01	Turn buckles
02	D-Shackles
03	Steel wire ropes
04	Manila ropes
05	Chain pulley blocks
06	Mobile Crane (10 MT)
III.	**MAJOR T&P**
01	Grinding machine and Drilling machine ¼".1/2",3/4" and 1".
02	Sprit level.
03	Tap sets for both BSP and NPT threads upto 1" each
04	Mechanical tool kit for fitters.
05	Electrical tool kits including spanners, Allen keys etc.
06	Cutting tools
07	Flood light fittings.
08	Distribution boards with power cable as required.
09	Painting brush.
10	Safety belts and safety helmets.
11	Ferrule printing machine.
12	Electrode drying ovens.
13	Gas cutting set
14	Welding Generators / T/F

GENERAL CONDITIONS OF CONTRACT

FOR

WORKS

(SECTION – I & II)

ES : F : 010

ERECTION SERVICES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

RANIPET – 632 406

BHARAT HEAVY ELECTRICALS LIMITED
BOILER AUXILIARIES PLANT
RANIPET 632 406

GENERAL CONDITIONS OF CONTRACT FOR WORKS IN ERECTION SERVICES DEPARTMENT OF BHARAT HEAVY ELECTRICALS LIMITED (RANIPET)

SECTION -I

1. GENERAL INSTRUCTIONS TO BIDDERS

1.1. DESPATCH INSTRUCTIONS:

1.1.1. This tender specification as a whole, duly furnishing all the details required and other documents as required in the following pages, shall be duly signed and sent in a sealed cover duly super scribing the name of work as given in the tender notice.

1.1.2. The tender shall be addressed to Officer inviting tender as indicated in the tender notice.

1.1.3. Tenders submitted by post shall be sent by "REGISTERED POST WITH ACKNOWLEDGEMENT DUE "and shall be posted with the due allowance for any postal delay. The tenders received after the due date and time of opening are liable to be rejected. Telegraphic offers and offers received by telex may not be considered.

1.1.4. Tenders shall be opened by authorized officer of BHEL at his office at the time and date as specified in the tender notice in the presence of such of those bidders or their authorized representatives who may be present.

1.1.5. The Tenders shall closely pursue all the clauses, specifications and drawings indicated in the tender documents before quoting. Should the bidder have any doubt in the meanings of any portion of the tender specification or find discrepancies or omission in the drawings or the tender documents issued are in complete or shall require clarification on any of the technical aspect, scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender.

1.1.6. Before tendering, the bidders are advised to inspect the site of work and the environments and be well acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later, on the ground of lack of knowledge.

1.1.7. Bidder must fill up all the schedules and furnish all the required information as per the instructions given in various sections of the tender specification. Each and every page of the Tender Specification must be signed and submitted along with the offers by the bidder in token of complete acceptance thereof. The information furnished shall be complete by itself.

1.1.8. The bidders shall quote the rates in English language and international numerals. These rates shall be entered in figures as well as in words.

1.1.9. Discrepancy in Quoted Rates :

a. If, in the price structure quoted, there is a discrepancy between the Unit rate quoted and the Total Price (which is obtained by multiplying the unit price by the quantity) due to arithmetical errors, the Unit rate quoted will be considered valid and the Total price will be corrected accordingly, unless in the opinion of BHEL there is an obvious misplacement of decimal point in the unit price. In which case the total price as quoted shall govern and the unit price corrected accordingly.

b. If there is an error in total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

c. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

d. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date before which the bidder has to send their acceptance on the above lines. If the bidder does not agree to the decision of BHEL, the bid is liable to be ignored.

1.1.10. For the purpose of the tender, the metric system of units shall be used.

1.1.11. All entries in the tender shall either be typed or be written in ink. Erasers and overwriting are not permitted and may render such tenders liable to summary rejection. All cancellations and insertions shall be duly attested by the bidder.

1.2. QUALIFICATION OF BIDDERS:

Only bidders who have previous experience in the work of this nature and description detailed in this tender specification are expected to quote for this work duly submitting details of experience along with the offer. Offers from bidders who do not have proven and established experience in the field are not likely to be considered.

1.3. DATA TO BE ENCLOSED:

Full information shall be given by the bidder in respect of the following. Non-submission of these information may lead to rejection of the offer.

1.3.1. FINANCIAL STATUS:

A certificate from Scheduled Bank to prove his financial capacity to undertake the work duly indicating financial limits the bidder enjoys or solvency certificate from the concerned Government authority. Informations required in Annexure A, shall be furnished by the bidder along with the offer.

1.3.2. INCOME TAX CERTIFICATE:

A certificate of Income Tax clearance from the appropriate authority in the forms prescribed there for indicating annual turnover and the Sales Tax clearance certificate from the appropriate authorities as prescribed by the concerned state government, if any. These certificates shall be valid for one year from the date of issue or for the period prescribed therein for all tenders submitted during the period.

1.3.3. PREVIOUS EXPERIENCE:

A statement giving particulars duly supported by documentary evidence of the various services rendered for each similar work by the bidder indicating the particulars, value of each work, the site location, the duration, date of completion, a list of site locations and particulars and value of various services that are under progress. Information required in Annexure –BI & BII shall be furnished by the bidders along with the offer.

1.3.4. ORGANISATION CHART:

The Organisation pattern that is presently available with the bidder and that will be employed by the bidder for this work shall be furnished.

1.3.5. An attested copy of the Power of Attorney, in case the tender is singed by an individual other than the sole proprietor, shall also be attached. (If it is a Company or Firm, etc., Director/Managing Partner as the case may be is required to sign)

1.3.6. IN CASE OF AN INDIVIDUAL:

His full name, address and place and nature of business shall be indicated.

1.3.7. IN CASE OF PARTNERSHIP FIRMS:

The names of all the partners and their addresses be furnished along with a copy of the partnership deed/instrument of partnership duly certified by Notary Public shall be enclosed.

1.3.8. IN CASE OF COMPANIES:

Date and place of registration including date of commencement certificate in case of public companies (certified copies of Memorandum and Articles of Association are also to be furnished) are to be furnished.

1.3.9. Nature of business carried on by the Company and the provisions of the Memorandum relating there of shall be furnished.

1.3.10 Names and particulars including addresses of the Directors and their previous experiences shall be furnished.

1.3.11 A list of tools and tackles that the bidder is having and those that will be used on this job shall be furnished.

1.3.12 In addition to the above, the particulars required in various annexure shall also be furnished.

1.4. EARNEST MONEY DEPOSIT:

1.4.1. Every tender must be accompanied by the prescribed amount of Earnest Money Deposit in any one of the following forms.

1.4.1.1.EMD shall be deposited in cash (as permissible under income tax act), Payorder or Demand Draft (payable at Ranipet in favour of "Bharat Heavy Electricals Ltd.,") only. No other form of EMD remittance shall be acceptable to BHEL.

1.4.1.2. In case of payment of EMD in the form of Cash, the amount should be remitted by the bidder to the Cash Office of Bharat Heavy Electricals Limited, BAP,Ranipet-632 406 during it's working hours and cash receipt issued shall be enclosed along with the tender.

1.4.2. Tenders received without Earnest Money in full in the manner prescribed above are liable to be rejected.

1.4.3. The Earnest Money Deposit of the successful tenders may be retained towards part of Security Deposit.

1.4.4. In the case of unsuccessful bidders, the Earnest Money will be refunded to them within a reasonable time after finalisation of the tender.

1.4.5. Earnest Money Deposit by the bidder will be forfeited as per tender documents if the bidder:

1.4.5.1. Fails to communicate unqualified acceptance of Letter of Intent within 15 days of date of Letter of Intent.

1.4.5.2. Does not commence the work within the period as per LOI/Contract. In case the LOI/Contract is silent in this regard then within fifteen days after award of contract.

1.4.5.3. After opening of Tender, revokes/withdraws his tender within the validity period or revises/alters his earlier quoted rates/conditions.

1.4.5.4. Fails to submit SD as indicated in the Letter of Intent.

1.4.6. Earnest Money deposit shall not carry any interest.

1.5. AUTHORISATION AND ATTESTATION:

1.5.1. Tenders shall be signed by persons duly authorized /empowered to do so. Certified copies of such authority and relevant documents shall be submitted along with the tenders.

1.6. VALIDITY OF OFFER:

The rates in the Tender shall be kept open for acceptance for a minimum period of six months from the date of opening of tenders. In case the Bharat Heavy Electricals Limited calls for negotiations such negotiations shall not amount to cancellation or withdrawal of the original offer , which shall be binding on the bidders.

1.7. EXECUTION OF CONTRACT:

The successful bidder's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited. The successful bidder shall be required to execute an agreement in the prescribed from (Annexure-D) with BHEL within a reasonable time after the acceptance of his tender and in any case before submitting the first bill for payment. The expenses for completion, stamping and registration of the agreement with prescribed authority, if necessary, shall be borne by the Contractor.

1.8. SECURITY DEPOSIT:

1.8.1. Upon acceptance of tender, the successful bidder within the time specified in the letter of intent must deposit the required amount of Security Deposit for satisfactory execution of work and shall not commence work under this contract before remitting security deposit except as directed by BHEL.

1.8.2. <u>The total amount of Security Deposit shall be as follows</u>:

1.8.2.1. In the case of work costing up to Rs.10 lakhs – 10% of the quoted value.

1.8.2.2. In the case of work costing Rs.10 lakhs to Rs.50 lakhs – Rs.1 lakh plus 7.5% of the amount exceeding Rs.10 Lakhs.

1.8.2.3. In the case of work costing more than Rs.50 Lakhs – Rs.4 lakhs plus 5% of the amount exceeding Rs.50 Lakhs.

1.8.3. The Security Deposit may be furnished in any one of the following forms:-

1.8.3.1. Cash (as permissible under the income tax act).

1.8.3.2. Payorder , Demand Draft in favour of BHEL.

1.8.3.3. Local cheques of Scheduled Banks, subject to realization.

1.8.3.4. Securities available from Post Offices such as National saving 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).

1.8.3.5. Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the companies act. The Bank Guarantee format should have the approval of BHEL (Annexure-E). The Bank Guarantee furnished towards Security Deposit should be kept valid by proper renewal till the expiry of 6 Months after the said work is actually completed.

1.8.3.6. 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, account BHEL, duly discharged on the back.

1.8.3.7. Security deposit can also be recovered at the rate of 10% from the running bills. However in such cases atleast 50% of the security deposit (as Bank Guarantee or Demand Draft) should be remitted before start of the work and balance 50% may be recovered from the running bills till the full Security Deposit is made up.

1.8.3.8. EMD of the successful bidder may be converted and adjusted against the security deposit on specific request by the contractor.

1.8.3.9. Acceptance of security deposit as per clause 1.8.3.4 and 1.8.3.6 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.

1.8.4. If the value of the work done at any time exceeds the accepted agreement value, the security Deposit shall be correspondingly enhanced and the extra Security Deposit shall be immediately deposited by the Contractor or recovered from payments due to him.

1.8.5 Failure to deposit the Security Deposit within the stipulated time, may lead to forfeiture of Earnest Money and cancellation of the award of work.

1.8.6 If any part of Security Deposit of the Contractor is held in the form of approved securities it shall be kept transferred in the name of Bharat Heavy Electricals Limited, Ranipet, in such a manner that the same can be realized fully without referring to the Contractor, BHEL shall not be responsible for any depreciation in the value of the Security while in BHEL's custody or for any loss of interest thereon.

1.8.7 BHEL reserves the right to forfeiture of Security Deposit in addition to the other claims and penalties in the event of the Contractor's failure to fulfill any of the Contractual obligation including liquidation or bankruptcy of the contractor, non-payment of money payable by means of arbitration award in favour of BHEL or in the event of termination of Contract as per terms and conditions of Contract. BHEL reserves the right to set off the Security Deposit, against any claims of any other contracts with BHEL.

1.8.8 RETURN OF SECURITY DEPOSIT:

If the Contractor performs and completes the work in all respects to the entire satisfaction of BHEL and presents an absolute "No Demand Certificate" in the prescribed form (Annexure-F) and returns properties belonging to BHEL handed over, lent or hired by him for carrying out the said works, Security Deposit will be released to the Contractor after deducting all cost of expenses or other amounts that are to be paid to BHEL under this or other contracts entered into with the Contractor. **It may be noted that in no case the Security Deposit shall be refunded/released prior to passing of final bill.**

1.9. REJECTION OF TENDER AND OTHER CONDITIONS

1.9.1. The acceptance of Tender will rest solely with BHEL which does not bind itself to accept the lowest tender or any tender and reserves to itself full rights for the following without assigning any reasons whatsoever.

1.9.1.1. To reject any or all of the bidders.

1.9.1.2. To split up the work amongst two or more Bidders.

1.9.1.3. To award the work in part.

1.9.1.4. Either of the contingencies stated in (1.9.1.2) and (1.9.1.3) above to modify the time for completion suitably.

1.9.2. Conditional and Unwitnessed tenders, tenders containing absurd or unworkable rates and amounts and tenders which are incomplete and otherwise considered defective and tenders not in accordance with the tender conditions, specifications, etc., are liable to be rejected.

1.9.3. If a bidder expires after the submission of his/her tender or after the acceptance of his/her tender, BHEL may at their discretion cancel such tender. If a partner of a firm expires the submission of the tender or after the acceptance of the tender, BHEL may cancel such tender at their discretion unless the firm retains its character.

1.9.4. BHEL will not be bound by any power of Attorney granted by the bidder or by changes in the composition of the firm made subsequent to the execution of the Contract. They may, however recognize such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.

1.9.5. If the bidder deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage or cancel the contract, if awarded. The Earnest Money/Security Deposit /any other money due shall also be forfeited.

1.9.6. Canvassing in any form in connection with the tender is strictly prohibited and the tenders submitted by the contractors who resort to canvassing in any form are liable to rejection.

1.9.7. Should a bidder or contractor or in the case of a firm or company of contractors one or more of its partners/share holders/Directors have a relation or relations employed in BHEL, the

authority inviting tender shall be informed of the fact along with the offer, failing this BHEL may, at its sole discretion reject the tender or cancel the contract and forfeit the Earnest Money/Security Deposit.

1.9.8. The successful bidder should not sub-contract the part or complete work detailed in the tender specification undertaken by him without written permission of BHEL. The bidder is solely responsible to BHEL for the work awarded to him.

1.9.9. No deviation from the tender specification shall be acceptable to BHEL. Bidders shall confirm their unqualified acceptance of the terms and conditions by giving an undertaking to this effect in a separate letter as specified by BHEL.

1.10. NO INTEREST shall be payable by BHEL on Earnest Money or Security Deposit, if applicable, or any money due to the Contractor by BHEL.

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SECTION –II

2.1. DEFINITION:

The following terms shall have the meaning hereby assigned to them except where the context otherwise requires.

2.1.1. **BHEL or (B.H.E.L Ltd)** shall mean Bharat Heavy Electricals Limited a Company registered under Indian Companies Act 1956, with its Registered Office at BHEL House, Siri fort, New Delhi 110 049 or its Authorised Officers or its Resident Engineer or other employees authorized to deal with any matters with which these persons are concerned on its behalf.

2.1.2. **"GENERAL MANAGER"**

shall mean the Officer in Administrative charges of contracting unit of BHEL.

2.1.3. "**ENGINEER**" or "ENGINEER IN CHARGE" shall mean Engineer who is in-charge for the works referred in Erection Services. The term also includes PROJECT MANAGER, "RESIDENT MANAGER" "SITE ENGINEER " " RESIDENT MANAGER" and "ASSISTANT SITE ENGINEER " of BHEL at the site as well as the Officers incharge at Head Office.

2.1.4. "**SITE**" shall mean the place or places at which the plants/equipments are to be erected and services are to be performed as per the specification of this contract.

2.1.5. "**CLIENTS OF BHEL**" or "**CUSTOMER**" shall mean the project authorities to whom BHEL is supplying the equipments.

2.1.6. "**CONTRACTOR**" shall mean the individual, firm or company who enters in to this contract with BHEL and shall include their executors, administrators, successor and permitted assignees.

2.1.7. "**CONTRACT**" or "CONTRACT DOCUMENT" shall mean/and include the agreement or work order, the accepted appendices of rates, schedules, quantities, if any and general conditions of contract, the special conditions of contract, instructions to the bidders, the drawings, the technical specifications, the special specifications, if any, the tender documents and the Letter of Intent/Acceptance Letter issued by BHEL. Any conditions or terms stipulated by the contractor in the tender document or subsequent letters shall not form part of the contract unless specially accepted in writing by BHEL, in the Letter of intent and incorporated in the agreement.

2.1.8. "**GENERAL AND SPECIAL CONDITIONS OF CONTRACT**" shall mean the "Instructions to Bidders and General and Special Conditions of Contract" pertaining to the work for which the bidders are called for.

2.1.9. "**TENDER SPECIFICATIONS**" shall mean the "SPECIFIC CONDITIONS, Technical specifications, appendices, site informations and drawings" pertaining to the work in which the bidders are required to submit their offer, Individual specification number will be assigned to each tender specification..

2.1.10. "**TENDER DOCUMENTS**" shall mean the General and Special Conditions of Contract(2.1.8) and tender specification(2.1.9).

2.1.11. "**LETTER OF INTENT**" shall mean the intimation by a letter to the bidder that the tender has been accepted in accordance with provisions contained in that letter. The responsibility of the contractor commences from the date of issue of this letter and all the terms and conditions of contract are applicable from this date.

2.1.12. "**COMPLETION TIME**" Shall mean the period by date specified in the acceptance of tender or date mutually agreed upon for handing over of the erected equipment/plant which are found acceptable by the Engineer being of required standard and conforming to the specifcations of the contract.

2.1.13. "**PLANT**" shall mean and cannote the entire assembly of the plant and equipments covered by the contract.

2.1.14. "**EQUIPMENT**" shall mean all equipments, machinery, materials, structurals, electricals and other components of the plant covered by the contract.

2.1.15. "**TESTS**" shall mean and include such test or tests to be carried out on the part of the contractor as are prescribed in the contract or considered necessary by BHEL in order to ascertain the quality, workmanship, performance and efficiency of the contract work or part thereof.

2.1.16. "**APPROVED**" "DIRECTED" or "INSTRUCTED" shall mean approved, directed or instructed by BHEL.

2.1.17. "**WORK OR CONTRACT WORK**" shall mean and include supply of all categories of labour specified consumables, tools and tackles required for complete and satisfactory site transportation handling, stocking, storing, erecting, testing, and commissioning of the equipments to the entire satisfaction of BHEL.

2.1.18. "**SINGULAR AND PLURAL ETC**" works carrying singular number shall also include plural and vice versa, where the context so required. Words importing the masculine gender shall be taken to include the feminine gender and words imparting persons shall include any company or association or body of individuals, whether incorporated or not.

2.1.19. "**HEADINGS**"

The headings in these general conditions are solely for the purpose of facilitating reference and shall not be deemed to be part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.

2.1.20. "**MONTH**" shall mean calender month, unless specified otherwise in the tender.

2.1.21. "**WRITING**" shall include any manuscript typewritten or printed statement under the signature of BHEL.

2.2. LAW GOVERNING THE CONTRACT AND COURT JURISDICTION

The contract shall be governed by the Law for the time being in force in the Republic of India, and shall be subject to the Jurisdiction of the courts having Jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu).

2.3. ISSUE OF NOTICE:

The Contractor shall furnish to the BHEL ENGINEER the name, designation and address of his authorized agent and all complaints, notices, communication and reference shall be deemed to have been duly given to the contractor or his authorized agent or left or posted to the address of either the contractor or of his representative and shall be deemed to have been so give in the case of posting on the day on which they would have reached such address in the ordinary course of post or on which they were so delivered of / or left.

2.4. USE OF LAND:

No land belonging to BHEL or their customer under temporary possession of BHEL shall be occupied by the Contractor without the written permission of BHEL.

2.5. COMMENCEMENT OF WORKS:

2.5.1. The Contractor shall commence the works within the time indicated in the Letter of Intent from BHEL and shall proceed with the same with due expedition without delay.

2.5.2. If the successful bidder fails to start the work within the stipulated time, BHEL, at his sole discretion will have the right to cancel the contract. His earnest money and/or Security Deposit with BHEL will stand forfeited without any further reference to him without prejudice to any and all of BHEL's other rights and remedies in this regard.

2.5.3. All the works shall be carried out under the direction and to the satisfaction of BHEL.

2.5.4. The erected/constructed plant or work performed under this contract shall be taken over when it has been completed in all respects and/or satisfactorily put in to operation at site.

2.6. MODE OF PAYMENT AND MEASUREMENT OF THE WORK COMPLETED:

2.6.1. All payments due to the contract shall be paid through E-PAYMENT (EFT / RTGS) only. The contractor has to furnish acceptance for e-payment, duly indicating the bank account details in the prescribed format.

2.6.2. For Progress running bill payment:

The contractor shall present detailed measurement working sheets, in quadruplicate, duly indicating all relevant details based on technical documents and connected drawings for work done during the month/period under various categories in line with terms of payment as per letter of intent. The basis of arriving at the quantities/weight shall be the relevant documents and drawings released by BHEL.

2.6.3. These measurement working sheets will be checked and vetted by BHEL Engineers and quantities and percentage eligible for payment under various groups shall be decided by BHEL engineers. The abstract of quantities and percentage so arrived based on the terms of payment shall be entered in Measurement Book and signed by both the parties.

2.6.4. Based on the above quantity, contractor shall prepare the bills in prescribed proforma and work out the financial value. These will be entered in Measurement Book and signed by both the parties and paid duly effecting recoveries due.

2.6.5. All recoveries due from the contractor for the month/period shall be effected in full from the corresponding running bills unless specific approval from the competent authorities is obtained otherwise.

2.6.6. Measurement shall be restricted to that for which it is required to ascertain the financial liability of BHEL under this contract.

2.6.7. The measurement shall be taken jointly be persons duly authorized on the part of BHEL and by the contractor.

2.6.8. The contractor shall bear the expenditure involved, if any, in making the measurement. The contractor shall, without extra charges provide all the assistance with appliances and other things necessary for measurement.

2.6.9. If, at any time due to any reason, whatsoever, it becomes necessary to re-measure the work done in full or in part, the expenses towards such re-measurements shall be borne by the contractor.

2.6.10. Passing of measurement as per bills does not amount to acceptance of the completion of the work mentioned. Any left out work has to be completed if pointed out at a later date by BHEL.

2.6.11. Final measurement bill shall be prepared in the final bill proforma prescribed for the purpose based on the certificate issued by BHEL Engineer that entire work as stipulated in the tender specification has been completed in all respects to the entire satisfaction of BHEL. Contractors shall give unqualified 'No Due' and 'No Demand' certificate. All the tools and tackles loaned to them should be returned in condition satisfactory to BHEL. Quantities/Weight erected shall be prepared and paid, within a reasonable time after completion of work. After payment of final bill, only guarantee obligation percentage shall remain unpaid which shall be released in accordance with clause 2.13. The final bill quantities and financial value shall also be entered in Measurement Book and signed by both the parties to the contract.

2.7 RIGHTS OF BHEL

BHEL reserves the following rights in respect of this contract without entitling the contractor for any compensation.

2.7.1. To get the work done through other agency at the risk and cost of the Contractor, in the event of Contractor's poor progress, or inability to progress the work, persistent disregard in instruction of BHEL, assignment transfer, subletting of the contract without permission of BHEL, non fulfillment of any contractual obligation etc., and to recover compensation for such losses from the contractor including BHEL's supervision charges and overheads from Security Deposit / other dues.

2.7.2. To withdraw any portion of work and/or to restrict/alter quantum of work as indicated and get it done through other agency and/or with departmental labour to suit BHEL's commitment to its customer or in case BHEL decides to advance the date of completion due to other emergency reasons/BHEL's obligation to its customer.

2.7.3. To terminate the contract after due notice to cause forfeiting of Security Deposit and recover the loss sustained in getting the balance work done through other agencies in addition to liquidated damages in the event of :

2.7.3.1. Contractor's continued poor progress.

2.7.3.2. Withdrawal from or abandonment of the work before completion of the work.

2.7.3.3. Corrupt act of contractor.

2.7.3.4. Insolvency of the contractor.

2.7.3.5. Persistent disregards to the instructions of BHEL.

2.7.3.6. Assignment transfer, sub-letting of the contract without BHEL's permission.

2.7.3.7. Non-fulfillment of any contractual obligations.

2.7.4. To recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.

2.7.5. To claim compensation for losses sustained including BHEL's supervision charges and overheads for completion on termination of contract and to impose penalty for delay in completion of the work at the rate of ½% of the contract value per week of delay or part thereof subject to a ceiling of 10% of contract value.

2.7.6. To terminate the contract or to restrict the quantum of work and pay for the portion of work executed in case BHEL's contracts with their customers are terminated for any reason.

2.7.7. To effect recovery from any amount due to the contractor under this or any other contractor in any other form the moneys BHEL is forced to pay to anybody, due to contractor's failure to fulfill any of his obligation.

2.7.8. To restrict or increase the quantity and nature of work to suit the site requirements since the tender specification is based on preliminary documents and quantities furnished there in are indicative and approximate and the rates quoted shall not be subject to revision.

2.7.9. To deploy BHEL's fitters, welders, operators and technicians in case of emergency/poor progress/deficiency in skill on the part of employees of contractor and to recover the expenditure on account of the same from contractor's bills.

2.7.10. While every endeavor will be made by BHEL they cannot guarantee un-interrupted work to the contractor due to conditions beyond their control. Contractor will not be entitled for any compensation extra payment on his account.

2.7.11. In the event of any dispute of any nature, the decision of BHEL shall be final and binding on the contractor.

2.7.12. Cancellation of contract in part or full for contractor's default:

If the contractor:

a) makes default in commencing the work within a reasonable time from the date of handing over of the site and continue in that state after a reasonable notice from Engineer-in-charge.

OR

b) in the opinion of the Engineer-in-charge at any time whether before or after the date / extended date for completion, make default in proceeding with the work, with due diligence and continue in that state after a notice of seven days from Engineer-in-charge

OR

c) fails to comply with any of the terms and conditions of the contract or after 7 days notice in writing with orders properly issued there under

OR

d) fails to complete the work order and items of work as per individual dates for completion and clear the site on or before the date of completion or fails to achieve the progress set out in accordance with the provisions of contract.

The Accepting Officer may, without prejudice to any other right or remedy which shall have accrued or shall accrue to BHEL, cancel the contract as a whole or in part thereof or only such work order items of work in default from the contract. Whenever the Accepting officer exercises his authority to cancel the contract as a whole or in part under this condition he may complete the work at the contractor's risk and cost , provided always that in the event of the cost of completion (as certified by Engineer-in-charge, which is final and conclusive) being less than the contract cost the advantage shall accrue to the BHEL. If the cost of completion exceeds, the money due to the contractor under this contract the contractor shall either pay the excess amount ordered by General Manager or the same shall be recovered from the contractor by other means. Engineer-in-charge will have power to take possession of site and materials, constructional plant, implements, stores etc there on.

In case BHEL completes the work or any part thereof under the provisions of the contract conditions, then such completion is to be taken in to account in determining the excess cost to be charged to the contractor under this condition and shall consist of the cost of materials purchased and / or labour provided by BHEL, with an addition of such percentage to cover superintendence and establishment charges as may be decided by the General Manager, whose decision shall be final and conclusive.

2.7.13. If the contractor fails to pay the excess sum within a period of 30 days the Engineer-in-charge shall have the right to sell any or of the contractor's unused materials, construction plant, implements, temporary buildings etc., and apply the proceeds of sale thereof towards the satisfaction of any sum due from the contractor under the contract and if there after be any balance out standing from the contractor, it shall be recovered in accordance with the provisions of the contract.

2.7.14. BHEL shall have the right to recover any money due from the contractor from any money due to the contractor under this contract or any other contract or from the Security Deposit.

2.8. RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF LOCAL LAWS, EMPLOYMENT OF WORKERS Etc.

The following are the responsibilities of the Contractor in respect of observation of local laws, employment of personnel, payment of taxes etc.

2.8.1. As far as possible unskilled workers shall be engaged from the local areas in which the work is being executed.

2.8.2. The contractor at all times during the continuance of this contract shall, in all his dealings with local labour for the time being employed on or in connection with the work, have due regard to all local festivals, religious and other customs.

2.8.3. The contractor shall comply with all state and Centrals Laws, Statutory Rules, Regulations etc., inclusive of those regarding labour and industrial laws which are applicable from time to time and they shall comply with the provisions of the said labour legislations, rules and regulations framed under the provisions of Employees Provident Fund and Miscellaneous Provisions Act 1952 shall be strictly followed.

2.8.4. The contractor shall pay all taxes, including sales Tax on works contract if any fees, license, charges, deposits duties, tool royalty commissions or other charges which may be leviable on account of any of his operations in execution of the contract in case BHEL is forced to pay any of such taxes. BHEL shall have the right to recover the same from the contractor either from his bills or other wise as deemed fit.

2.8.5. While BHEL would pay the inspection fees, of the Boiler Inspectorate, all other arrangements for the visits periodically by Boiler Inspector to site, Inspection Certificate etc., will have to be made by the contractor. However BHEL will not make any payment to Boiler Inspector in connection with contractor's welders qualification/requalification tests etc.

2.8.6. The contractor shall be responsible for provision of health and sanitary arrangements (more particularly described in Contract Labour Regulation & Abolition Act) safety precautions etc., as may be required for safe and satisfactory execution of the contract.

2.8.7. The contractor shall be responsible for providing proper accommodation including adequate medical facilities for the personnel employed by him.

2.8.8. The contractor shall be responsible for the proper behavior and observance of all regulations by the staff employed by him.

2.8.9. The contractor shall ensure that no damage is caused to any person/property of other parties working at site. If any such damage is caused it is the responsibility of the contractor to make good the losses or compensate for the same.

2.8.10. All the properties/equipments/components of BHEL their client loaned with or without deposit to the contractor in connection with contract shall remain the properties of BHEL/their client. The contractor shall use such properties for purpose of execution of this contract, all such properties/equipments/components shall be deemed to be in good condition when received by the Contractors unless he notifies within 48 hours to the contrary. The Contractor shall return them in good condition as and when required by BHEL/their client. In case of non-return, loss, damage, repairs etc, the cost thereof, as may be fixed by the site Engineer, will be recovered from the Contractor.

2.8.11. It is not obligatory on the part of BHEL to supply any tools and tackles or other materials other than those specifically agreed to do so by BHEL. However, depending upon the availability/possibility BHEL's customer's handing equipment and other plants may be made available to the contractor on payment of the hire charges/free of charges, as fixed subject to the conditions laid down by BHEL/Customer from time to time. Unless paid in advance such hire charges if applicable shall be recovered from contractors bills/security deposit in one installment.

2.8.12. The Contractor shall fully indemnify BHEL against all claims of whatsoever nature arising during the course of erection/construction/performing work under the contract.

2.8.13. In case the Contractor is required to undertake any work outside the scope of this contract the rate payable shall be those mutually agreed upon.

2.8.14. Any delay in completion of works/non-achievement of periodical targets, due to reasons attributable to the contractor, the same will have to be compensated by the Contractor either by increasing manpower and resources or by working extra hours and/or by working more than one shift. All these are to be carried out by the contractor at no extra cost.

2.8.15. The contractor shall arrange and co-ordinate his work in such a manner as to cause no hindrance to other agencies working in the same premises.

2.8.16. All safety rules and codes applied by the client/BHEL at site shall be observed by the contractor without exception. The contractor shall be responsible for the safety of the equipment/material and works to be performed by him and shall maintain all light, fencing guards signs etc, or other protection necessary for the purpose. Contractor shall also take such additional precautions as may be indicated from time to time by the Engineer with a view prevent pilferage, accidents, fire hazards and due precautions shall be taken against fire hazards and atmospheric conditions. Suitable number of clerical staff, watch and ward, store keepers to take care of equipment, materials and construction tools and tackles shall be posted at site by the contractor till the completion of the work under this contract. The contractor shall arrange for such safety devices as are necessary for such type of work and carry out the requisite site tests of handling equipments, lifting tools, tackles, etc., as per prescribed standards and practices.

2.8.17. The contractor will be directly responsible for payment of wages to his workmen. A pay roll sheet giving all the type payments given to the workers and duly signed by the contractor's representative should be furnished to BHEL Site office on or before 15th of every succeeding month.

2.8.18. In case of any class of work for which there is no such specification as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of the Engineer.

2.8.19. No levy of payment or charge made or imposed shall be impeached by reason of any clerical error or by reason of any mistake in the amount levied or demanded or charged.

2.8.20. Also no idle labour charges will be admissible in the event of any stoppage caused in the work resulting contractor's labour being rendered idle due to any cause at any time.

2.8.21. The contractor shall take all reasonable care to protect the materials and work till such time the plant/equipment has been taken over by BHEL/their client.

2.8.22. Contractor shall not stop the work or abandon the site for whatsoever reason or dispute, excepting for force major conditions. All such problems/dispute, shall be separately discussed and settled without affecting the progress of work. Such stoppage or abandonment shall be treated as breach of contract and dealt with accordingly.

2.9. CONSEQUENCES OF CANCELLATION:

Whenever BHEL exercises its authority to terminate the contract/withdraw a portion of work under the clause 2.7 they may complete the work by any means. In the event of the cost of completion as certified by the site Engineer which is final and conclusive being less than the contract cost, the advantage shall accrue to BHEL and that if the cost of completion exceeds the moneys due to the contractor under the contract, the contractor shall either pay the excess amount ordered by BHEL or the same shall be recovered from the contractor by any other means. This will be in addition to the forfeiture of Security Deposit and recovery of liquidated damages as per the relevant clauses.

2.9.1. In case BHEL completes the work under the provision of this condition, the cost of such completion to be taken into account in determining the excess cost to be charged to the contract under this condition, shall consist of materials purchased and/or labour provided by BHEL with an addition of such percentage to cover supervision and establishment charges as may be decided by BHEL.

2.10 INSURANCE:

2.10.1. BHEL/their customer shall arrange for insuring the materials/properties of BHEL / customer covering the risks during transit, storage, erection and commissioning.

2.10.2. It is sole responsibility of the contractor to insure his workmen against accidents and injury while at work as required by relevant Rules and to pay compensation, if any, to workmen as per workmen's Compensation Act. The work will be carried out in a protected area and all the rules and regulations of the client/BHEL in the area of project which are in force from time to time will have to be followed by contractor.

2.10.3. If due to negligence and/or non-observance of safety and other precautions, any accident/injury occurs to any other persons/public, the contractor shall have to pay necessary compensation and other expenses if so decided by the appropriate authorities.

2.10.4. If due to contractor's carelessness's, negligence of non-observance of safety precautions damage to BHEL's /customer's property and personnel should occur and if BHEL is unable to recover in full cost from the insurance company, the same will be recovered from the contractor.

2.10.5. It shall be the responsibility of the contractor to provide security arrangement for the equipment/ materials belonging to BHEL and handed over to the contractor for erection/transportation till the same are taken over by BHEL after erection/returned to BHEL stores.

2.11. STRIKES & LOCKOUTS:

2.11.1. The contractor will be fully responsible for the entire dispute and other issues connected with his labour. In the event of the contract labour resorting to strike or the contract resorting to lock-out and if the strike or lock-out declared is not settled within a period of one month, BHEL, shall have the right to get the erection work executed employing its won labour or through any agencies or both and the cost so incurred by BHEL be deducted from the contractor's bills.

2.11.2. For any purpose whatsoever the employees of the contractor shall not be deemed to be in the employment of BHEL.

2.12. FORCE MAJEURE:

2.12.1 The following shall amount to FORCE MAJEURE:

Act of God or of any Government, War, Sabotage, Riots, Civil commotion, Police action revolution, Flood, Fire, Cyclones, Earth quake and epidemic and other similar causes over which the contractor has no control.

2.12.2. If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by FORCE MAJEURE as defined above, the agreed time of completion of the job covered by this contract or the obligation of contractor shall be extended by a period of time equal to the period of delay provided that on the occurrence of any such contingency the contractor immediately reports to BHEL in writing the causes of delay and the contractor shall not be eligible for any compensation.

2.13. GUARANTEE:

Even though the work will be carried out under the supervision of BHEL Engineers the contractor will be responsible for the quality of the workmanship and shall guarantee the work done for a period of twelve months from the date of completion of work as certified by the Engineer for good workmanship and shall rectify free of cost all defects due to faulty erection, detected during the guarantee period starting from the date of the completion of rectification. In the event of the contractor failing to repair the defective works within the time specified by the Engineer, BHEL may proceed to undertake the repairs of such defective works at the contractor's risk and cost, without prejudice to any other rights and recover the same from Security Deposit/other dues or by other legal means.

2.14. ARBITRATION:

Except where otherwise provided for in the contract all questions and disputes relating to the meaning of the specifications, designs, drawings and instructions herein before mentioned and

as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in anyway arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the work or failure to execute the same whether arising during the progress of the work or after the completion or abandonment thereof shall be referred to the sole arbitration of the General Manager of BHEL and if General Manager is unable or unwilling to act, to the sole arbitration of some other person appointed by the General Manager, willing to act as such arbitrator.

The cases referred to arbitration shall be other than those for which the decision of the Accepting Officer, or Engineer-in-charge as the case may be is expressed in the contract to be final and conclusive. There will be no objection if the arbitrator so appointed is an employee of BHEL and that he had to deal with the matters to which the contract relates and that in the course of his duties as such he had expressed views on all or any of the matters in dispute or difference.

The arbitrator to whom the matter is originally referred being transferred or vacating his office or being unable to act for any reason, such General Manager as aforesaid at the time of such transfer, vacation of office or inability to act shall appoint another person to act an as arbitrator in accordance with the terms of the contract. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

Subject as aforesaid the provision of the Arbitration and Conciliation Act 1996 or any statutory modification or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

It is a term of the contract that the party involving arbitration shall specify the dispute or dispute to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute.

The arbitrator shall be deemed to have entered on the reference on the date he issues notice to both the parties fixing the date of first hearing.

The arbitrator shall give a separate award in respect of each dispute or difference referred to him.

The venue of arbitration shall be such place as may be fixed by the Arbitrator in his sole discretion. The award of the Arbitrator shall be final conclusive and binding on all parties to this contracts.

In the event of disputes or differences arising between one public sector and a Government Department or between two public sector enterprises the above stipulations shall not apply, the provisions of BPE Office memorandum No.BPE/CL/001/76 MAN/2(1.10)76-BPE(GM-1)dated 1st January 1976 or its amendments for arbitration shall be applied.

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ANNEXURE –'D'

BHARAT HEAVY ELECTRICALS LIMITED
(A GOVERNMENT OF INDIA UNDERTAKING)
BOILER AUXILIARIES PLANT
INDIRA GANDHI INDUSTRIAL COMPLEX
ERECTION SERVICES DEPARTMENT
RANIPET – 632 406

CONTRACT AGREEMENT

AGREEMENT NO: BAP : ERN : BHE : **DATE:**

Name of work :

Name of the contractor with full address :

Amount of tender accepted :

Letter of Intent No. :

Time allotted for completing the work (date of completion) :

(Officer authorized to sign the agreement)

CONTRACTOR

CONTRACT AGREEMENT

AGREEMENT No: BAP: ERN : BHE : DATE:

This agreement made this day, the of between the Bharat Heavy Electricals Limited, Ranipet having its Registered Office at 'BHEL House' , Siri Fort, New Delhi 110 049 (herein after called the FIRST PARTY) of one part and Messrs. (herein after called the ("CONTRACTOR") of the SECOND PARTY.

2. WHEREAS the first party is desirous of executing the work of more particularly described in the appendices including drawings and specifications attached herewith.

3. WHEREAS IN PURSUANCE of the said Contractor's Tender having been accepted, the first party has decided to give the above said work to Contractor, and WHEREAS the contract between the parties was concluded by virtue of a letter of intent issued by the First Party under reference. Dt.

4. WHEREAS the said Contractor has agreed to do the aforesaid work of the first party subject to the conditions herein contained in the presents, instructions to bidders, general conditions and special conditions, schedules, appendices, letter of intent and specifications (hereinafter referred as the said contract schedule) at the approved rates (herein referred as the said contract rate).

5. AND WHEREAS the said contractor has furnished a Bank Guarantee for a sum of Rs. Valid up to towards initial 50% security Deposit and has further agreed for balance 50% Security Deposit being recovered at 10% of value of each running bill till the full Security Deposit is made up for the satisfactory completion and performance of the work and whereas the validity of the said Bank Guarantee has to be extended by the Contractor, if so required before for the balance period of contract period and in the event of his failure to do so, the contractor shall pay or accept recovery of this amount of Rs. (Rupees only), from the bills forthwith in one installment and it has further been agreed that the failure to extend the validity of Bank Guarantee or failure to pay the aforesaid amount the manner specified above shall constitute the breach of contract, and first party reserved the right to take easy legal action deemed fit for recovering the said sum of Rs. (Rupees only). This amount of Rs. Will be refunded (and Bank Guarantee will be returned) to the Contractor on satisfactory completion of the work as specified in the Contract documents.

6. Now THESE PRESENTS WITNESS that in consideration of the said contract schedule and said contract rate as also of agreement of good and faithful services to be rendered and performed by the contractor in the execution of the said work, subject to the stipulation hereinafter expressed.

7.That the said contractor will perform the aforesaid work subject to the conditions contained in these presents, instructions to bidder, general and special conditions of contract and the contract documents attached herewith including the said schedules, specifications, appendices, letter of intent, drawings attached and also such other drawings and instructions as may from time to time be given by the first party. And that the said contractor shall be deemed to have carefully examined the specifications and conditions of contract, appendices, schedules, letter of intent , drawings etc., as aforesaid and also to have satisfied himself as to the nature and character of work to be executed.

8. That the said contractor shall carry out and complete the execution of the said work to the entire satisfaction of the Engineer within the agreed time schedule.

9. That the first party after proper scrutiny of the bills submitted by the said contractor will pay to him during progress of the said work, at said contract rates and agreed terms of payment, a sum as determined by the first party in respect of the work executed by the contractor.

10. That the contract shall come into force with retrospective effect from the date on which the letter accepting the tender (Letter of Intent) has been issued to the said contractor.

11. That whatever under this contract or otherwise, any sum of money shall be recoverable from or payable by the Contractor, the same may be deducted in the manner as set out in the conditions of contract as aforesaid.

12. That all charges on account of Octroi, terminal and sales-tax or other duties on materials obtained for the work shall be borne by the said contractor.

13. That is agreed between the parties that the non-exercise of any of the powers conferred on the authorities of the first party will not in any manner constitute waiver of the conditions thereto contained in these presents and the liability of the said contractor either of past or further compensation shall remain unaffected.
14. That the expression BHEL wherever occurring means THE BHARAT HEAVY ELECTRICALS LIMITED, RANIPET.
15. The contract is subject to RANIPET(TamilNadu) jurisdiction.
16. The document hereto attached viz. shall also form part of this agreement.
17. General Conditions of Contract attached to the Notice inviting tender shall form part of this contract in so far as any thing is not provided specifically in this agreement.
18. In witness hereof the parties have respectively set their signatures in the presence of :

WITNESSES:

(with full address)

1.

2.

Signature of the Contractor (to be signed by a Person holding valid power of Attorney of the Company)

Date:

WITNESSES:

(with full address)

1.

2.

For and on behalf Bharat Heavy Elec.Ltd.

Date:

ANNEXURE 'E'

PROFORMA FOR SECURITY DEPOSIT

THIS DEED OF GUARANTEE made this day of _____ by Messrs. _____(hereinafter called the Bank) in favour of Messers._BHARAT HEAVY ELECTRICALS LIMITED, RANIPET having its Registered Office at New Delhi(hereinafter called the Principal)

WHEREAS Messers._____(hereinafter called the Contractor) has entered in to a Contract with Bharat Heavy Electricals Ltd., Ranipet arising out of Letter of Intent No._____ Dt._____ addressed by the Principal to the Contractor(hereinafter called the said agreement) for

AND WHEREAS the said Agreement provides that the contractor shall pay a sum of Rs._____(Rupees_____only) towards 50% of full Security Deposit to be made in the form and manner therein specified.

AND WHEREAS the Contractor have approached the Bank and at their request and in consideration of the agreement arrived at between the said contractor and the Bank, the Bank has agreed to give such guarantee as hereinafter mentioned to the Principal.

NOW, therefore, these present witness that we the Bank by the hand Mr._____its lawfully and duly constituted attorney, do hereby undertake to pay to the principal a sum of Rs._____(Rupees _____only)without demur on demand being made by the principal and to keep the principal indemnified to the extent of Rs._____by virtue of this guarantee against any loss or damage caused to or suffered by the principal by reason of any breach by the aforesaid contract of any of the terms and or conditions, stipulations or undertakings of any one of them contained in the said Agreement and the tender documents attached thereto and for the payment of any money or moneys payable by the said contractor to the principal under the terms and conditions of the said Agreements(the decisions regarding the breach, loss damage or payment due being solely in the discretion of the Principal).

We further undertake to pay without demur the aforesaid amount in a lump sum on demand or such part thereof as the Principal may demand from time to time irrespective of the fact whether the said contractor admits or denies such claim or questions its correctness in any Court Tribunal or Arbitration Proceedings or before any authority. The aforesaid guarantee will remain in force and we shall be liable under the same irrespective of any concession or time being granted by the principal, to the Contractor in or fulfilling the said agreement between contractor and the principal and the guarantee will remain in full force irrespective of any change of terms, conditions or stipulation or any variation in the terms of the said agreement irrespective of whether notice of such change or/variation is given to us or not and claim to receive such notice of any change/and or variation of the terms and or variation of the terms and or/conditions of the said agreement is hereby specifically waived by us. Further we shall not be release from this guarantee by any forbearance of the exercise or non-exercise of any of the powers or rights under the said agreement by the principal against the contractor irrespective of whether notice of such forbearance enforcement or non-enforcement of any powers or rights, modifications or change made in the said agreement or concessions shown to contractor by the principal is given to us or not.

The guarantee herein contained shall not be determined or affected by the liquidation or winding up or insolvency of or change in the constitution of the contractor but shall in all respects and for all purposes be binding and operative until all payments of all moneys due or that may hereafter become due to the principal in respect of any liability or obligations of the contractor under the said agreement.

We, the Bank further agreee that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the principal under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the principal certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges the guarantee subject to however that the principal shall have no rights under this guarantee after the expiry of six months from the date of completion of the contract (the date of completion shall be as certified by the Principal) unless this guarantee is extended by agreement.

Any claim or dispute arising under the terms of this contract shall only be enforced or settled in the Court having jurisdiction over RANIPET (VELLORE Dist, Tamil Nadu)

And lastly the Bank undertakes not to revoke this guarantee during its currency except with the previous consent of the principal in writing.

The bank hereby declares that it has power to issue this guarantee under that Bank's Memorandum and Articles of Association and the undersigned has power to do so on its behalf under the power of Attorney granted to him by the proper Authorities of the Bank.

Date: **(Name of the Bank & Place)**

Seal: ***DESIGNATION OF THE AUTHORISED***

PERSON SIGNING THE GUARANTEE

ANNEXURE –'F'

NO DEMAND CERTIFICATE

1) Name of work :

2) Agreement Date :

3) I/We certify that

a) I/We have completed the above work to the entire satisfaction of BHEL.
b) I/We have handed over all the balance materials, components, tools and tackles, machinery and other equipment of BHEL.
c) I/We have received the final payment from BHEL for the above work.
d) I/We have no further demand whatsoever from BHEL.

I/We, therefore request you to refund to me/us the security deposit of Rs. (Rupees only) and the Bank guarantee No.: dt. for Rs. After deducting all cost of expenses or other amounts that are to be paid by me/us to BHEL under this contractor other contract entered into by me/us with BHEL.

SIGNATURE OF THE CONTRACTOR WITH SEAL

Place:

Date:

Witness 1)

2)

3)

SPECIAL CONDITIONS OF CONTRACT

FOR

ELECTRICAL WORKS

BAP:ERN :ELE: SPN : ESP:01

ERECTION SERVICES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

RANIPET – 632 406

SECTION - III

SPECIAL CONDITIONS OF CONTRACT FOR ELECTRICAL WORKS IN ELECTROSTATIC PRECIPITATOR (ESP)

3.1 SCOPE OF WORK

3.1.1 The work covered under this specification is of highly sophisticated nature requiring the best quality of workmanship, engineering and construction management. The contractor should ensure timely completion of work. The contractor must have adequate quantity of tools. Measuring instruments, calibrating equipment etc. in his possession. He must also have on his rolls adequately trained. Qualified and experienced engineers supervisory staff and skilled personnel. The manpower deployment identified by contractor should match requirement of sophistication involving microprocessor-based systems.

3.1.2 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 co-operate with the personnel of other agencies. Co-ordinate his work with others and proceed in a manner that shall not delay or hinder the progress of work as whole.

3.1.3 All the work shall be carried out as per the instructions of BHEL engineer. BHEL engineer's decision regarding the correctness of the work and method of working shall be final and binding on the contractor.

3.1.4 The services, tests and support to be provided by the agency of the work mentioned in the various sections of this tender are indicative and not exhaustive, but not limited to these for the completion of the work in all respects.

3.1.5 Contractor shall erect, test and commission all the equipments, cabinets/panels, instruments and cabling etc. as per sequence prescribed by BHEL at site. The sequence of erection / commissioning methodology will be decided by the BHEL engineers depending upon the availability of materials/work fronts etc. No claims for extra payment from the contractor will be entertained on the grounds of deviation from the methods of erection / commissioning adopted in erection / commissioning of similar jobs or for any reasons whatsoever.

3.1.6 The work to be carried out under the scope of this specification covers the complete work of loading at site stores/ storage yard, handling, transporting, unloading at location of erection, pre-assembly, erection, calibration (where specified), testing, air flushing, pre-commissioning tests, assistance for commissioning of systems, trial run of various auxiliaries, achieving various activities till handing over of the unit to BHEL's customer.

3.1.7 The work shall conform to dimensions and tolerances specified in various drawings that will be provided during the erection. If any portion of the work is found to be defective in workmanship or not conforming to drawings or other specifications 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 departmentally or by engaging other agencies and recoveries will be effected from contractor's bills towards expenditure incurred including departmental charges.

3.1.8 The terminal points as decided by BHEL shall be final and binding on the contractor for deciding the scope of work and effecting payment for the work done.

3.1.9 All works such as cleaning, leveling aligning trial assembly, dismantling of certain equipments / components for checking and cleaning, fabrication of tubes and pipes as per general engineering practice and as per BHEL engineers instructions at site cutting weld depositing, grinding straightening, chamfering filling of cut outs/openings for mounting of console inserts modules/indicators/recorders, drilling of holes for gland entries, reaming, scrapping, dressing, fitting up etc. as may be applicable in such erection works are treated as incidentals to erection work and are necessary to complete the work satisfactorily shall be carried out by the contractor as part of the work.

3.1.10 House keeping in the erection and pre-assembly area is as important as the well-planned and orderly work. The access to site for inspection by BHEL and customer engineers and leading of the material shall be made available by the contractor at all times.

3.1.11 The shifting and re-shifting of erection materials tools and plants and clearance of restrictions filling of ditches undulation near ESP area is the responsibility of the contractor. Contractor should visit the site and acquaint himself with all restrictions and difficulties that he may encounter during erection/commissioning stages.

3.1.12 Detailed scope for various items of work is further elaborated in clauses herein under. The tests required to be carried out before commissioning of equipment and procedure to be adopted shall be decided in consultation with the BHEL. The decision of BHEL in this regard shall be final and binding on the contractor.

3.1.13 Electrostatic Precipitator shall have one or more flue gas passes and each pass comprises of rectifier transformer (silicon/mineral oil filled), auxiliary control panels, switch gear panels, electronic controller, LT main switch board and its bus duct, Drives for rapping/controlling/Gas damper screen, heating element for hoppers/shaft and supporting insulator housing, ash level indicator and ESP management system (software based) including computer interface and associated interlock and protection.

3.2 ERECTION OF SERVICE TRANSFORMER

3.2.1 The scope of work under this head is defined as below.

3.2.2 Transportation of transformer and accessories from BHEL site stores/ storage yard to the transformer foundations / plinth, assembly of loose supplied items, erection, testing & commissioning.

3.2.3 The transformer shall be handled in such a manner so that no jerk is transferred to the core, winding and internals of the transformer.

3.2.4 Placement of transformer on plinth, alignment with respect to the foundation and in line with lay out drawings.

3.2.5 Topping-up of Oil, Filtration of oil and testing for BDV.

3.2.6 All the accessories shall be assembled/mounted as per GA drawings and these should be thoroughly cleaned prior to installation.

3.2.7 The contractor shall arrange required testing equipments for carrying out electrical test like voltage ratio, vector group, magnetic balance, winding resistance measurements, BDV value of oil, insulation resistance etc. The contractor shall arrange oil sample testing for tests applicable at approved testing laboratory at his own cost including all incidental expense.

3.2.8 The contractor shall consult and finalise the required tests / procedure with BHEL prior to commencement of the work.

3.2.9 **TESTING BEFORE COMMISSIONING SHALL INCLUDE THE FOLLOWING**.

3.2.9.1 Measurement of Insulation resistance and winding resistance.

3.2.9.2 Conducting Ratio test, vector group test etc., as required/ instructed at site.

3.2.9.3 Filtration of transformer oil for at least one complete cycle.

3.2.9.4 Measuring BDV value of transformer oil and further filtration, if required.

3.3 INSTALLATION OF ELECTRICAL PANELS

3.3.1 ESP Switch Gear panels (SGP), Electronic Control panels (ECP), Auxiliary Control panels (ACP), Variable Frequency Drive (VFD) Control panels, Rapper Control panels (RCP if applicable), Instrument panels etc. are normally supplied in set of either one/two/three or loose shipping sections with integral or loose supplied base frame. These panels may have to be installed as stand alone or in groups consisting of number of panels in each row, depending upon the plant layout and foundation arrangement.

3.3.2 ACP / SGP are double front draw-out /non-draw type consisting of circuit breakers units, contractor/starter, switch fuse units, protection and metering relays/ instruments etc. arranged in multi tier construction.

3.3.3 VFD for Fans etc., if applicable, will consist of VFD transformer, Dynamic Brake resistance panel (DBRP), Vacuum Circuit Breaker (VCB) etc.

3.3.4 The panels shall be transported from stores to place of installation in vertical position. Care shall be taken such that the switches, lamps, instruments etc., mounted on the panel do not get damaged during transit.

3.3.5 Panels have to be shifted to their locations through floor openings temporary openings like floor grills door etc. which shall be part of work and no claim whatsoever will be entertained with regard to non-availability of opening as per shortest route etc. Panel have to be erected at different locations and elevation in Plant Control Rooms, ESP control room , Plant area etc.

3.3.6 Panels are normally supplied with base frames. Wherever the panels are to be mounted on cable trenches channel supports have to be provided across the cable trench over which the base frame of panel shall be mounted. The scope of work includes fabrication and erection of steel frames/ bracket required for supporting the panels. Supply of materials like channels, angles etc. is in the scope of BHEL

3.3.7 Separate rates shall be paid for steel fabrication and erection of supports/brackets/ base frames as per rate schedule.

3.3.8 Installation of panel shall include fixing of base frame, fabrication of base frame if required, leveling, alignment, fixing of anti-vibration pads, removal of side covers, fixing of cubicle interconnection hardware, bus bar jointing, wiring interconnection, welding and grouting of panels and base frames, mounting of panel canopy wherever supplied as part of panel, drilling of gland plates (if additionally required) and sealing of cable entries.

3.3.9 Normally the panels shall be supplied with instrument, relay, meters, electronic modules etc. mounted and pre-wired. However if these are supplied loose / separately for safety in transit contractor shall mount/wire such devices as part of the panel installation work and no separate rates shall be applicable unless otherwise specially listed in the rate schedule.

3.3.10 No separate payment shall be made for replacement of any devices like electronic modules relays conductors terminal block push buttons etc. which are found defective during pre-commissioning / post-commissioning of any equipment / item.

3.3.11 Panel and instruments once erected in position should be properly protected using necessary care to prevent ingress of dust/moisture. This will have to be periodically cleaned and surroundings have to be kept tidy.

3.3.12 For the panels erected by other agencies commissioning / calibration work and trouble shooting has to be carried out by the contractor as part of testing and commissioning work as per the quoted rates for the same in the rate schedule.

3.3.13 Minor civil works like drilling, chipping, punching holes and opening in concrete floors slabs and brick walls grouting related to Rack support installation minor civil works required for installation of control panels Junction boxes etc., shall be included in the erection cost of such items. The scope also includes supply of grouting material, if any.

3.3.14 **TEST TO BE CARRIED OUT BEFORE COMMISSIONING SHALL INCLUDE THE FOLLOWING**.

3.3.14.1 Checking of installation for correctness.

3.3.14.2 Mechanical functional checking/ adjustment of individual breaker.

3.3.14.3 Measurement of Insulation resistance of individual breaker, complete switchgear board and combined insulation resistance of individual breaker with cable connected to drives.

3.3.14.4 Testing of Protection Relay, Thermal over relay, Power transducers Energy/ Ammeters, Voltmeters, Power factor, frequency, tri-vector meters & metering etc. in static & dynamic condition of relay.

3.3.14.5 Conducting test such as Insulation Resistance measurement, Ratio, polarity, winding resistance on CT and PT.

3.3.14.6 Checking of electrical control & protection interlock of individual breaker and integration with other system.

3.3.14.7 Calibration of energy meters, tri-vector meters, voltmeters, ammeters, power current & voltage transducers etc.

3.3.14.8 Provide assistance for checking the electrical operation of individuals breakers from local stations/remote panels/ MMI package.

3.3.14.9 The contractor shall arrange all the required testing instruments/ test kits / calibration equipments etc. for testing and calibration.

3.4 ERECTION OF DISCONNECTING SWITCH

3.4.1 Disconnecting switches are to be erected on the outer roof of ESP, between the HVR Transformer and insulator housing.

3.4.2 Adequate precautions have to be taken during shifting of disconnecting switches to ESP location, lifting, and erection to avoid any damage to the insulators inside them.

3.4.3 Ensure proper alignment as per drawing and that the supplied gaskets, ropes etc. are properly placed. Connect the copper tubes as per drawing using connectors supplied by BHEL.

3.4.4 The scope of work includes fabrication and erection of steel frames required for supporting the disconnecting switches. Supply of materials like angles etc. is in the scope of BHEL. Separate rates shall be paid for steel fabrication and erection of supports as per rate schedule.

3.4.5 **TESTING BEFORE COMMISSIONING SHALL INCLUDE THE FOLLOWING.**

3.4.5.1 Cleaning of the switch internals, insulators etc. and application of lubricants.

3.4.5.2 IR value check.

3.4.5.3 Checking and ensuring copper connecting tubes are in order/tight and proper operation of the switch.

3.5 ERECTION OF INTERLOCKING SYSTEM

3.5.1 The interlocking system is provided in the ESP to ensure safety of personnel working in ESP. The system basically ensures isolation all the high voltage points before access is possible.

3.5.2 The system consists of one or more panels for holding the keys and have to be installed on the roof of ESP. The locks, which are supplied loose are to be fixed / welded to the access / inspection doors in Hoppers, Support Insulator housing, disconnecting switches, casing panel etc.

3.5.3 The scope of work includes fabrication and erection of steel frames required for supporting the disconnecting switches. Supply of materials like angles etc. is in the scope of BHEL. Separate rates shall be paid for steel fabrication and erection of supports as per rate schedule.

3.6 ERECTION OF HEATING ELEMENTS AND THERMOSTATS

3.6.1 Heating elements / heaters are tubular or panel type and are to be fixed in the appropriate areas where suitable provisions are already made by other agencies / BHEL.

3.6.2 Hopper Heaters are to be fixed in ESP hoppers, while Support insulator and Shaft insulator heaters are to be fixed in insulator housing on ESP roof area.

3.6.3 **TESTING BEFORE COMMISSIONING SHALL INCLUDE THE FOLLOWING.**

3.6.3.1 Check resistance and IR values of each heater. Provide low voltage heating if improvement of IR value is required.

3.6.3.2 Ensure the looping connections are as per drawing. Check the current in each phase.

3.6.3.3 Scope of work includes replacement of heater/s found defective, if any, at no extra cost to BHEL.

3.7 ERECTION OF JUNCTION BOXES AND PUSH BUTTON STATIONS

3.7.1 Various Junction Boxes and Push Button stations of steel construction shall be supplied with required holes in the gland plates, required cable glands and lugs.

3.7.2 The unit rate quoted for erection of JBs and Push button stations shall cover installation of JBs/SSPBs on supporting frames, painting the tag nos. of JB or fixing separate tag plate on JBs/SSPBs.

3.7.3 Separate rate shall be paid for fabrication and erection of supports as per rate schedule.

3.7.4 Required fasteners shall be supplied by BHEL free of cost.

3.8 ERECTION OF ASH LEVEL INDICATOR (ALI) AND OPACITY MONITOR (OPM)

3.8.1 The unit rate quoted shall include installation of ALI / OPM with all accessories, putting them into operation and providing assistance for commissioning and troubleshooting.

3.8.2 **ASH LEVEL INDICATOR** is a capacitance type level monitoring instrument consisting of an electronic unit, a probe and connecting co-axial cable.

3.8.3 The electronic unit is fixed to ESP support column below hoppers on supports/ brackets along with manifolds and associated fitting and clamps. The probe is fixed at specified height on the hoppers by cutting a suitable opening and welding an adapter. The connecting co-axial cable and earthing wire are run through flexible steel conduits. The flexible conduit is to be clamped suitably for support. All the materials like clamps, flexible conduits, fixing bolts etc. will be supplied by BHEL on free issue basis.

3.8.4 **OPACITY MONITOR** consists of an electronic unit, receiver unit, control unit and connecting cables.

3.8.5 The total OPM unit has to be installed in the outlet duct of ESP at specified location by a suitable opening and welding an adapter. All the materials like clamps, flexible conduits, fixing bolts etc. will be supplied by BHEL on free issue basis.

3.8.6 The Unit rate shall also cover marking tag Nos. of instruments/racks, either by paint or a separate tag plate as per BHEL Engineer directive.

3.8.7 Separate rates shall be paid for fabrication and erection of supports/brackets as per rate schedule.

3.8.8 Temporary protection by polythene sheets / steel sheets shall be provided by contractor for safe guarding the OPM against damages. The protective covers shall be provided at no extra cost by contractor

3.9 ERECTION OF INTEGRATED OPERATING SYSTEM (IOS)

3.9.1 The scope of installation of IOS includes providing power supply and electronic earthing of the IOS etc. assistance in commissioning and trouble shooting.

3.9.2 An IOS consists of two numbers of PC based controller (CPU), two CRT / LCD Monitors, one printer, one UPS, interconnecting cables and a set of furniture.

3.9.3 The scope of work includes Unit rate quoted for IOS shall cover installation & integration of all the above said equipment and providing necessary commissioning assistance. No separate unit rate applicable for installation of all loose items/ modules/ components or accessories etc, which is not explicitly mentioned in the rate schedule, but comes as

part of the system.

3.10 SCOPE OF COMMISSIONING OF EQUIPMENT ERECTED BY THE MECHANICAL CONTRACTOR / OTHER AGENCIES.

3.10.1 HT MOTORS (Not applicable)

a) Measurement of winding resistance.

b) Testing of CT where required.

c) Meggering and if insulation resistance is low, dry out of the motor.

d) Conducting polarization index test, if required.

e) Testing the healthiness of RTDs. Replacement of defective element (only for bearing).

f) Checking direction of rotation of motors and testing and commissioning from local as well as remote.

3.10.2 LT MOTORS / RAPPING DRIVES

a) Checking IR value and if insulation resistance is low, dry out of the motor.

b) Measuring winding resistance.

c) Checking direction of rotation of motors and testing and commissioning from local as well as remote.

3.10.3 ACTUATORS FOR DAMPERS/ GATES ETC.

a) Measuring of winding resistance and IR value of drive motor and if insulation resistance is low, dry out of the motor.

b) Checking direction of rotation of motors and testing and commissioning from local as well as remote.

Scope of work includes providing loop wire on actuator terminal block, setting of mechanical/ electrical or electronic position transmitters, setting of limit / torque switches, cable checking, internal wiring checks, local / remote operation from MCC&MMI package and replacing defective components like limit switches etc.

3.10.4 ELECTRICAL HOIST

a) Electrically operated hoist are provided for maintenance purpose of High Voltage Rectifier Transformer installed on the roof of electrostatic precipitator etc. Mechanical erections of hoist components such as runway beams, hoist carriage, drive unit, etc. shall be done by another agency / BHEL. The scope of work covered in this tender specification for erection and commissioning is installation of DSL system and associated accessories. The scope of work for the contract in this package is as follows.

b) DSL SYSTEM : It consists of tee iron guide for cable trolley and associated supporting structural members, trailing cable, cable guide trolley, dog chain, switch fuse unit, limit switch etc.

c) DSL system shall have to be erected at higher elevation. Contractor shall take all safety measures while carrying out the work.

d) For installation of tee iron & other structural steel member, unit rate for fabrication & erection shall be applicable and for other items unit rate shall be paid as per rate schedule. However cable dressing, fixing of leather bands, rope clamps and any incidental work such making approaches for executing the work, scaffolding etc. shall be part of work.

e) Commissioning & testing of electrical hoists shall include panel wiring check, IR measurement, functional check, over load relay testing, trail run, providing assistance during load test, replacement of component if required etc.. However preparatory work for load test and arrangement of load etc. shall be done by another agency / BHEL.

3.10.5 **HIGH VOLTAGE RECTIFIER TRANSFORMER (HVR)**

a) Installation and functional check of various devices supplied loose along with transformer like Buckholtz relay, breather etc., including replacement, if required.

b) Checking of IR value of primary and secondary windings.

c) Winding resistance measurement.

d) Filtration of Oil for atleast one full cycle.

e) Measuring BDV of oil and further filtration, if required.

f) Topping of transformer oil and thorough cleaning of the HVR.

g) Assistance during OC and SC test of the transformer.

3.11 **CABLE LAYING**

3.11.1 Laying of power and Control Cable includes transportation from BHEL's stores, laying, dressing, clamping and tagging cable marker at both ends. The cable shall be laid in Ladder / perforated type cable trays The Cables shall be tied after dressing using 3mm dia nylon ropes/ties and the nylon ropes/ties shall be supplied by the contractor. The cable shall be clamped suitably with cable trays at maximum 1.5M interval using 3mm aluminum clamps/strips as per the instruction of BHEL Engineer. **Supply of necessary strips, clamps and bolts for the above work is included in the contractor's scope**.

3.11.2 The contractor shall lay the cables on cable trays, in built-up cable trenches, vertical tray ways, overhead areas and supports, pulled through conduits, pipes, run clamped on wall / ceiling steel structure etc. A uniform rate to be quoted shall include laying, proper dressing, tying etc. Standard of Workmanship shall be to the approval of BHEL Engineers.

3.11.3 The arrangement of the Cable and all methods of laying shall be planned to provide an orderly formation to avoid bends and crossings and to facilitate easy removal of any one cable without undue disturbance to adjacent cables. The Standard of Workmanship shall be to the approval of BHEL Engineers.

3.11.4 Cable laid in (or) entering into (or) emerging from cable racks, cable trays, conduits, cable supports shall be suitably formed to avoid bearing against sharp edges.

3.11.5 When cables pass through floors, walls etc., etc it shall be passed through a pipe for mechanical protection and the pipe ends sealed suitably.

3.11.6 Care shall be taken to avoid sharp bending and kinking of conductor, damaging insulation and stressing the cable beyond the pulling force recommended by the manufactures. Cables shall be protected at all times from mechanical damage.

3.11.7 Where cabling passes through brickwork (or) concrete work suitable local protection against mechanical damage shall be provided by the contractor.

3.11.8 Jointing of cables, if necessary, shall be done by crimping type cable joints after getting the approval of BHEL Engineers.

3.11.9 Entry to the panels and JBs may be at top, sides or bottom. All cables are require to be properly supported and clamped near to the JB panel.

3.11.10 Many of the cable trays and cables have to be laid in cable trenches. For this purpose the cover of the trenches have to be opened for working in site and whenever the cables are to be laid in existing cable tray, all safety precautions have to be observed. After completing the work the trenches have to be cleaned and covers put back into position Contractor shall also carry out de-watering from the trenches if required and arrange pumps etc., at his cost.

3.11.11 Contractor shall carefully plan the cutting schedule of each cable drum in consultation with site engineer such that wastage are minimized.

3.12 TERMINATION OF CABLES

3.12.1 All the cables laid by the contractor shall be terminated by him. **Cable glands and lugs will be supplied along with the panels / equipments etc., unless specifically mentioned otherwise**. Unit rates for various sizes of cables is to be indicated in rate schedule.

3.12.2 Termination includes dressing & glanding, splicing and dressing inside panels, JBs etc., providing ferrules / printed ferrules (contractor to arrange ferrule printing machines) and crimping of lugs.

3.12.3 Supply of required PVC cable ties, PVC ferrules, PVE button and tapes, PVE sleeves, compounds, necessary tools, joining materials etc. shall be supplied by the contractor within the quoted rates for cable termination. The quality of material shall be got approved from BHEL engineer prior to their use on job. is in the contractor's scope.

3.12.4 Special tool clips, saddles, etc,. required for the connections and terminations of cables shall also be provided by the Contractor at his cost.

3.12.5 At cable termination points, where the conductor and the cable insulation will be terminated termination shall be made in a neat, workman like manner.

3.12.6 The Contractor shall include connections to termination of various equipment installed by other agencies. The contractor shall work in co-operation with other agencies in obtaining correct direction of rotation and commissioning of equipments.

3.12.7 Looping wire at terminal block of panels and electrical actuator as shown in the inter-connection diagrams or as required is to be done by contractor at no extra cost.

3.12.8 Cable lugs shall be provided by compression, adapting necessary crimping tools. Insulating sleeves shall be provided over the barriers and conductors to prevent accidental contact with ground (or) adjacent terminals. The insulating sleeves shall be fire resistant and be long enough to over pass conductor insulation and shall be properly sized.

3.12.9 Termination of all cables installed by the Contractor is included in his scope, The work of testing and reconnection, changing of connections re-arrangement of leads to required extent shall be carried out by the contractor without additional cost.

3.12.10 Cable shielding – all signal cables are supplied with bare shielded copper wire/with braided wire shield. Generally shield wire is kept isolated at instrument/field device end and continuity is maintained through JB and grounded at panel end only. While terminating the shield wire, either in panel or JB, PVC sleeves are to be used to avoid two-point earthing.

3.12.11 **TESTING BEFORE COMMISSIONING SHALL INCLUDE THE FOLLOWING.**

3.12.11.1 **HT CABLE**

a) Insulation resistance of the HT cable.

b) Conducting Hi-pot Test.

c) Ensure proper identification tags are in place.

3.12.11.2 **LT POWER / CONTROL / INSTRUMENT CABLES**

a) Insulation resistance of the cable.

b) Identify the cables with tag plates.

3.13 INSTALLATION OF CABLE TRAYS AND ACESSORIES

3.13.1 Erection of Cable Trays includes installing ladder/perforated type cable trays in cable trenches, plant area , steel columns, overhead areas etc. on the supports already provided. Approximate quantity is indicated in the rate schedule.

3.13.2 Cable trays, coupler plates and fasteners shall be supplied by BHEL.

3.13.3 Only straight trays will be supplied by BHEL. Other accessories like Bends Tees. Cross, etc… which may be required for proper laying of cable as per cable routing will be fabricated by the contractor at his cost to the extent of 10% of the number of trays supplied by BHEL. The fabricated trays shall conform to the shape and configuration of original bends etc, that would have been supplied. The fabrication of the bends from straight trays will include cutting the ladder steps, bending the side plates to the required radius and re-welding the ladder steps with the bent plates. Trays supplied will be of G.I. and hence 1.5mm citofine electrode only shall be used for welding purposes. All cuttings shall be done only with hack-saw and gas cutting should not be resorted to.

3.13.4 The cable trays shall be adequately tack welded to supporting steel work and shall be sufficiently supported to prevent sagging. The weld shall be painted using cold galvanizing paint (supply of paint is in the scope of contractor)

3.13.5 In case cable trays are required to be fabricated from structural steel and installed, unit rate applicable for fabrication and installation of structural steel shall be applicable in such instance.

3.14 INSTALLATION OF EARTHING

3.14.1 Installation of above-ground earthing for the complete system is the scope of the contractor. following. Required quantity of GI flats/wires will be supplied by BHEL.

3.14.2 Earthing of all motors, Switch gear Panels, LTMCC , PMCC , ACP, PLC, Electronic Control Panel, Push Button Stations, Junction Boxes, Transformers, Heaters, thermostats, instruments, Cable trays and accessories, cable armours and conduits used for cable installation, etc. are in the scope of work.

3.14.3 Installation of earthing conductors and terminations at the equipments and at the earth rings / buses/ earth pits and the necessary clamping of the conductors shall be carried out by the contractor. The tentative quantities required for the earthing is indicated in the rate schedule.

3.14.4 All equipments shall be earthed by two separate and distinct connections. Earthing terminals will be available in all the equipment supplied by BHEL.

3.14.5 The earthing conductor of galvanized mild steel strips, wires will be supplied by BHEL. All connections for the equipment to the main earthing conductor shall be made as indicated in schematic drawings provided during execution of work.

3.14.6 A continuous earthing conductor shall be installed in all cable trays and securely clamped to each tray section by suitable connections to form a continuous earthing system. When two (or) more trays supporting power cables run parallel, a continuous earthing conductor shall be provided on one tray only with tap offs to the control cable trays.

3.14.7 All joints in the earthing system shall be welded type. Earthing connections to all equipment including motor shall be of bolted type.

3.14.8 Earthing connections shall be free from tinning, scale, paint, enamel, grease, rust (or) dirt at the time of making joint.

3.14.9 Screens / Shields and armour of all multi core cables shall be bonded and earthed.

3.14.10 Earthing conductors ,along their run on columns, beams, walls etc. shall be supported by suitable cleats to intervals of 750mm.

3.14.11 Welded joints shall be painted with red oxide and Aluminium paint / cold galvanizing paint in turn and afterwards coated with bitumen as per IS 3043. Supply of paint etc. are in the scope of contractor.

3.14.12 Earth lead and riser connections shall be as short and direct as possible and shall be without any links and spacing.

3.14.13 All earthing works includes laying of earthing flat as per the schematic drawing and termination up to the earthing pit.

3.15 FLEXIBLE CABLE TRAYS SUPPORT SYSTEM

3.15.1 Cable tray support system shall be pre-fabricated similar or equivalent to "Unistrut make". Support system for cable trays shall essentially comprise of the two components i.e. main support channel and cantilever arms. The main support channel shall be of two types: (i) C1:-having provision of supporting cable trays on one side and (ii) C2:-having provision of supporting cable trays on both sides. The support system shall be the type described hereunder

3.15.2 Cable supporting steel work for cable racks/cables shall comprise of various channel sections, cantilever arms, various brackets, clamps, floor plates, all hardware such as lock washers, hexagon nuts, hexagon head bolt, support hooks, stud nuts, hexagon head screw, channel nut, channel nut with springs, fixing studs, etc.

3.15.3 The system shall be designed such that it allows easy assembly at site by using bolting. All cable supporting steel work, hardware fittings and accessories shall be pre-fabricated factory galvanized.

3.15.4 The main support and cantilever arms shall be fixed at site using necessary brackets, clamps, fittings, bolts, nuts and other hardware etc. to form various arrangements required to support the cable trays. Welding of the components shall not be allowed. However, welding of the bracket (to which the main support channel is bolted) to the overhead beams, structural steel, insert plated or reinforcement bars will be permitted. Any cutting or welding of the galvanized surface shall be brushed and red lead primer, oil primer & aluminum paint shall be applied.

3.15.5 All steel components, accessories, fitting and hardware shall be hot dip galvanized after completing welding, cutting, drilling and other machining operation.

3.15.6 The typical arrangement of flexible support system is shown in the enclosed drawings and described briefly below.

3.15.7 The main support channel and cantilever arms shall be fabricated out of minimum 2.5 thick rolled steel sheet conforming to IS.

3.15.8 Cantilever arms of 300 mm, 600 mm and 750 mm in length are required, and shall be as shown in the enclosed drawing. The arm portion shall be suitable for assembling the complete arm assembly on to component constructed of standard channel section. The back plate shall allow sufficient clearance for fixing bolt to be tightened with tray in position.

3.15.9 The size of structural steel members or thickness of sheet steel of main support channel and cantilever arms and other accessories and indicated above or in the enclosed drawings are indicative only. Main support channels may be supplied in any suitable lengths to minimize the wastage. Nevertheless, the support system shall be designed by the bidder to fully meet the requirements of type tests as specified. In case the system fails in the tests, the components design modification shall be done by the Bidder without any additional cost to the Employer. The bidder shall submit the detailed drawings of the system offered by him along with the bid.

3.16 STRUCTURAL STEEL FABRICATION AND ERECTION

3.16.1 Structural steel material like MS angles, channels, beams, flats, plates, pipes etc. shall be supplied in running meters and same shall be used for fabrication of panel base frame, cable tray supports, supporting frames for instruments, junction boxes, distribution boards, impulse lines etc., canopies for instruments/ panels/JB/push button stations etc.

3.16.2 This shall include cutting to size, contouring of end for connections if required, welding, grinding of excess weld deposits/ burrs, drilling of holes for mounting of device/instrument, installation at location, leveling, alignment, providing bracings, painting etc. **No gas cut holes will be permitted** contractor to follow the BHEL supplied welding schedule and welding procedures.

3.16.3 All the fabricated supports/frames shall be painted as per painting schedule. **All paints, primers etc. are in the scope of the contractor.**

3.16.4 Frame installation/cable tray accessories' installation at site may involve mounting either on concrete floor by grouting/using anchor fasteners or on steel structure by welding etc. All consumables shall be arranged by the contractor.

3.16.5 In certain packages galvanized members of junction box frames and instrument racks shall be supplied in cut to sizes and frame assemblies are required to be done as per drawing by bolting/welding. The installation rate as quoted shall include the assembling of the frames.

3.16.6 Gas cutting of tray/impulse pipe support and gas cut holes in frame shall be avoided. Only drilled hole is permitted in frame etc.

3.17 **PAINTING**

3.17.1 **Supply of Primer, Finish paint etc is included in the scope of the contractor.** Paints shall be arranged from standard reputed suppliers in consultation with BHEL.

3.17.2 **Colour Banding, Legend and Identification Marking, Direction Marking etc. shall be in scope of the contractor for all items erected/commissioned by the contractor.**

3.17.3 All the weld joints of GI cable trays and GI structural members shall be applied with a coat of cold galvanizing zinc paint. Paint etc shall be arranged by contractor at his cost.

3.17.4 **STRUCTURALS**

3.17.4.1 All the supporting steel work for the over head cable trays, risers, JBS, SSPBs, instruments etc., shall also have protective painting. The surfaces of the above shall be free from rust, foreign adhering matters, grease etc. structural components shall be cleaned as per specifications and then coated with two coats of primer and finish paint as per BHEL instructions.

3.17.5 **PANELS, JUNCTION BOXES , TRANSFORMER ETC.**

3.17.5.1 Panels and Junction Boxes shall be Touch-up painted as and where original shop paint is peeled off. Necessary surface cleaning and preparation shall be done by the contractor as per relevant painting codes followed by two coats of Primer and two coats of Finish Paint.

3.18 **INTEGRATED TESTING, PRE-COMMISSIONG, AND POST COMMISIONING**

3.18.1 The contactor shall perform various activities during pre-commissioning, integrated Testing, post commissioning stages of equipment covered under this tender specification. It is responsibility of contractor to arranged tools & plants, test equipments, experienced engineers and technicians.

3.18.2 The contractor's commissioning group shall work as per the instruction of BHEL engineer and they shall coordinate day-to-day activity with other agency and BHEL/ customer. The testing activity may have to repeated till satisfactory results are obtained and also to satisfy the requirement of BHEL.

3.18.3 The equipments erected by the contractor will be tested and commissioned as per normal testing practice like panel charging, Meggering of cables, conducting of open circuit / short circuit testing etc. as per the instruction of BHEL engineers.

3.18.4 The contractor will supply required manpower along with all required testing equipments like multimeter, megger, tong tester, test kit etc. and his quoted rates will be inclusive of all equipment / instruments like multimeter, megger, tong tester, test kit etc. and his quoted rates will be inclusive of all above aspects.

3.18.5 The contractor shall prepare all erection / commissioning log sheets and protocols / test certificates as per field quality plan, get is signed by the concerned BHEL/Customer engineer and submit the same to BHEL engineer as per his instruction.

3.18.6 While testing and commissioning, if the equipment to which the cabling is connected is observed to be not functioning, it is the responsibility of the contractor to check, establish and demonstrate, in close coordination with the commissioning agencies, that there is no defect in the cabling. The contractor shall depute his supervisor and workmen to assist the commissioning agencies to check the interconnecting cables.

3.18.7 The mobilization of these commissioning groups shall be such that planned activities are taken up in time and also completed as per schedule and work undertaken round the clock if required. It is responsibility of contractor to discuss on day to day basis the requirement of manpower, consumables, tools & tackles / testing equipments with BHEL engineers and arrange for the same.

3.18.8 During the commissioning activities and carrying out various tests, if any one of temporarily work such mounting of test equipments / cabling etc are required, the contractor shall carry out such work without on any extra cost. The same shall be removed after completion of the activity.

3.18.9 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, per- commissioning and commissioning, to demonstrate the completion of any part or whole of work performed by the contractor.

3.19 ELECTRICAL INSPECTORATE'S APPROVAL/ STATUTORY INSPECTION

3.19.1 Contractor shall have/obtain valid electrical contractors License to carry out the erection, Testing & Commissioning work on High/Low voltage electrical equipments from the appropriate statutory authority of concerned state or central electricity authority, as the case may be. All fees and expense in this regard shall be in the contractor's account.

3.19.2 Contractors shall arrange inspection of concerned statutory Authority for the installation, testing & commissioning of high / low voltage equipments covered under the scope of work and including those erected by other agencies and obtain the statutory authorities approval in appropriate format prior to charging of the equipments.

3.19.3 Contactor shall be responsible for all necessary liasioning work with statutory authority towards the certification of installation / works. BHEL will only pay statutory fees in respect of inspection of all installations as per demand note/challan issued by the statutory authority. All other expense shall be borne by the contractor. BHEL / BHEL's customer shall be providing technical assistance, drawing & document for submission to statutory authority. Contractor shall provide all logistics services in this regard.

3.20 STANDARDS

3.20.1 Complete erection shall confirm to Indian Electricity Act with latest amendments and also to latest editions of the relavant Indian Standards.

a) IS:2274- Code of practice for electrical wiring installation. (System Voltage not exceeding –650 V).

b) IS:732- Code of practice for electrical wiring installation (System Voltage not exceeding – 650 V)

c) IS:732 – Code of practice for earthing.

d) IS : 3072 – Code of practice for installation and maintenance of switch gears.

e) The latest edition of IE Act & IE Rules.

f) Other relevant standards as applicable.

3.21 MEASUREMENTS

3.21.1 For all payments purposes, measurement shall be made on the basis of actual execution in line with drawings/ documents /site requirements.

3.21.2 The measurement of cable, impulse pipes/ tubes, conduits, flexible conduits, trays etc. shall be made on the basis of length actually laid.

3.21.3 For all site-fabricated steel items such as supports, racks, frame, canopy etc., physical measurement shall be made and then converted to tonnage. For steel material supplied to contractor, all scrap shall be returned to BHEL stores with due accounting.

3.21.4 The cable take-off from drums shall be planned strategically such that jointing in the run of cables and wastage are avoided. For this purpose, the exact route length between various equipment /panels as per the cable schedule shall be measured and the route length recorded before laying of the cables. Depending upon the route length and the type of cable required for various destinations, the cable drums should be suitably selected for cable laying. Any jointing shall be approved by the BHEL Engineer. All the cut pieces/ bits of cables, which are not used/ unused shall be returned to BHEL for accounting purpose.

3.22 **TERMS OF PAYMENT FOR ELECTRICAL WORKS :**

3.22.1 ERECTION WORKS

a) 60% of the contract rate on pro-rata basis progressively as and when the erection work is completed as per BHEL drawings and instructions.

b) Further 30% of the contract rate shall be paid on completion of alignment grouting, Cable laying, Cable termination, cable dressing, Tagging and testing of entire equipment to the satisfaction of BHEL and their client.

c) Further 5% of the contract value shall be paid on commissioning of entire equipment to the satisfaction of BHEL and their client.

3.22.2 DISMANTLING WORKS : NOT APPLICABLE

~~a) 95% payment of the tonnage rate for dismantling will be released on prorata basis after the materials are dismantled, transported and handed over to BHEL'S Clients storage yard.~~

~~b) Balance 5% will be released on completion of the entire dismantling work as certified by BHEL Engineer.~~

3.22.3 SUPPLY OF ILLUMINATION SYSTEM : NOT APPLICABLE

~~a) 90% of the contract rate for each item shall be paid on receipt at site as certified by BHEL Engineer.~~

~~b) Further 5% of the contract rate value shall be paid on commissioning of entire illumination system to the satisfaction of BHEL and their Client.~~

3.22.4 The balance 5% of the contract value in 3.22.1 above shall be paid after guarantee period of 12 months. The guarantee period will commence from the date of handing over of the unit to the customer or six months after the date of successful completion of Trial run, whichever is earlier. However, this 5% amount can be released against Bank Guarantee valid for 12 months as aforesaid in the prescribed proforma of BHEL.

SECTION - IV

SPECIAL CONDITIONS OF CONTRACT FOR ELECTRICAL WORKS

4.1 SCOPE OF CONTRACT

The indent of this specification is to provide services for execution of projects according to most modern and proven techniques and codes. The omission of specific reference to any method, equipment or material necessary for the proper and efficient services towards the work allotted shall not relieve the contractor of the responsibility of providing such services/facilities to complete the project or portion of project awarded to him. The quoted rate shall deem to be inclusive of all such contingencies.

4.1.2 The contractor shall carry out the work in accordance with instructions/drawings/specification standard practices supplied by BHEL from time to time.

4.1.3 Provision of all types of labour, supervisors, Stores staff, watch and ward as required, tools and tackles as specified consumables as specified under various clauses of Tender Specification for erection, testing and commissioning and dismantling of existing structures.

4.1.4 Proper out turn as per BHEL plan and commitment.

4.1.5 Completion of work in time.

4.1.6 Good quality and accurate workmanship for proper performance of equipment.

4.1.7 Repair and rectification.

4.1.8 Re-conservation / preservation of all components.

4.1.9 Comprehensive Reporting on the progress of the Work on daily basis, attending review meetings with BHEL to monitor and speed up the work and taking steps as directed to speed up the work/ improve the Quality and Safety of the Work.

4.2 FACILITIES TO BE PROVIDED AND DEVELOPED BY THE BIDDERS AT HIS COST

4.2.1 It shall be the responsibility of the contractor to construct his own office shed, stores shed, labour tonements, with all facilities like electricity, water supply, sanitary arrangements in the area allotted to him for the purpose.

4.2.2 Distribution of water for construction purposes and as well as drinking purpose from the single point provided by BHEL to various works fronts shall be the Contractor's responsibility and at his cost.

4.2.3 Necessary meters for recording consumption of water and power for cost analysis purpose and maintenance of the same during execution period shall be Contractor's responsibility.

4.2.4 Provision for distribution of electrical power from the given single central point to the required places with proper distribution boards, approved cable laying, including supply of all materials like cables, switch boards, pipes, etc., observing the safety rules laid down by the Electricity Authority of the State/BHEL/their customer shall be the responsibility of the Bidder /contractor.

4.2.5 As there are bound to be interruptions in regular power supply, power cut/load shedding in any construct on sites due to inherent power shortage in State on this account, suitable extension of time only be given and contractor is not entitled for any compensation. Such interruptions should be intimated to BHEL by the contractor timely It shall be the responsibility of the contractor to have at least a few diesel operated welding generator sets to get urgent and important work done with out interruption.

4.2.6 Adequate lighting facilities such as flood lamps, 24V Safety lamps and area flood lighting shall be arranged by the Contractor at the site of constructions, pre-assembly area, Contractor's material storage area and at access roads etc., at his cost.

4.2.7 For the purpose of Planning, Contractor shall furnish along with tender, the estimated requirement of power (month wise) for execution of work in terms of maximum KW demand.

4.2.8 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 therefore will be recovered from the Contractor. The decision of BHEL Engineer in this regard is final.

4.2.9 The Contractor shall provide all materials required for scaffolding, formwork and centering wherever necessary for erection should arrange at his cost.

4.2.10 Depending upon the nature of work and availability of facilities locally, Contractor may have to arrange for a temporary work-shop for facilitating uninterrupted progress of work.

4.2.11 The contractor shall secure and maintain comprehensive including third party insurance for appropriate amount to protect your and our interest against all risk and claims to the men/women or for labour force. If failure in securing the insurance policies in this regard shall not absolve you from reimbursing to us for any loss / damages / injuries or death to any person.

4.2.12 The contractor shall be fully responsible for obtaining labour licence/approval if any, from State/Central/Local authorities at his own cost and risk.

4.2.13 It is the responsibility of contractor to obtain approval from statutory authorities like pollution control board, Factory Inspectorate etc., if necessary.

4.2.14 All fees connected with the contractor for Testing his Welders/Men / Works and Testing, Inspection, calibrating 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 the conducting of any work which comes under the Purview of these Authorities. Any cost arising from this shall be contractor's Account.

4.3 GASES

4.3.1 All required gases like oxygen / Acetyllene / LPG for the work shall be supplied by the Contractor at his cost. It shall be the responsibility of the Contractor to plan the activities and store sufficient quantity of these gases Non-availability of gases cannot be considered as reason for not attending the required progress.

5.3.2 In case of improper arrangement of above gases, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's bill at market value plus BHEL departmental charges as may be fixed from time to time Postponement of recoveries is not permissible. The decision of BHEL Engineer in this regard is final and binding on the Contractor.

4.3.2 BHEL reserves the right to reject the use of any gas in case the required purity is not maintained.

4.3.3 The Contractor shall submit Weekly / fortnightly / monthly statements / reports regarding consumption of above gases for cost analysis programme.

4.3.4 The Contractor shall ensure safekeeping of the inflammable cylinders at separate place away from normal habit with proper security etc.

4.4 ELECTRODES

4.4.1 All the electrodes required 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 suppliers, type of electrodes etc. On receipt of the electrodes at site, it shall be subjected to inspection and approval by BHEL. The Contractor shall inform BHEL, the details regarding type of electrode, batch number, date of expiry etc.

4.4.2 Storage of electrode shall be done in an air-conditioned / controlled humidity room as per requirement.

4.4.3 Shortage of any of the electrodes of the equipment suggested by BHEL shall not be quoted as reason for deficiency in progress or for additional rate.

4.4.4 BHEL reserves the right to reject the use of any electrodes at any stage, if found defective because of bad quality, improper storage, quality, date of expiry, unapproved type of electrodes etc. It shall be the responsibility of the Contractor to replace at his cost with out loss of time.

4.4.5 All electrodes shall be dried in the electrodes drying oven to the temperature and period specified by BHEL Engineer before they are used for erection work. Electrode drying ovens shall be provided by the contractor.

4.4.6 In case of improper arrangement for procurement of above electrodes, BHEL reserves the right to procure the same from any source and recover the cost from the Contractor's first subsequent bills at market value plus the departmental charges of BHEL communicated from time to time. Postponement of such recovery is not permitted.

4.4.7 Contractor shall submit weekly/ fortnightly / monthly statement / reports regarding consumption of electrodes of all types for cost analysis purpose.

4.5 CRANE AND OTHER TOOLS AND TACKLES

4.5.1 All the T&P including Cranes, trucks, lorries, tractors, trailors etc required for the satisfactory execution of work shall be arranged by the Contractor. BHEL will not arrange any Tools and Plants.

4.5.2 All the T&P arranged by the Contractor including electrical connection wherein required shall be reliable / proven tested with necessary test certificate.

4.5.3 All the T&P, lifting tackles including wire ropes, sling, shackles and electrically opera-red equipments arranged by Contractor shall be got approved by BHEL Engineer before they are actually put on use.

4.5.4 Civil works required for safe and efficient operation of tools and tackles shall be the Contractor's responsibility.

4.5.5 Contractor shall take into consideration the above clauses and quote the rates as called for in the rate Schedule.

4.5.6 SUPERVISORY STAFF AND WORKMEN

4.6.1 The Contractor shall supply all skilled workmen like welders, gas cutters, riggers, erectors, carpenters, fitters, electricians etc., in addition to other skilled, semi-skilled, unskilled workmen required for all the works of receipt, material handling, transportation, erection, testing and commissioning contemplated under this specification. Only fully trained and competent men with previous experience in the job shall be employed. They shall hold certificates wherever necessary. BHEL reserves the right to decide on the suitability of the workers and other personnel who will be employed by the contractor. BHEL reserves the right to insist or removal of any employee of the Contractor shall for with remove him.

4.6.2 The supervisory staff employed by the Contractor shall ensure proper out-turn of work and discipline on the part of the labour put on the job by Contractor and in general see that the works are carried out in a safe and proper manner and in co-ordination with other labour and staff employed directly by BHEL or other contractors of BHEL or BHEL'S client.

4.6.3 The contractor shall also furnish daily labour report showing by classification the number of employees engaged in various categories of work and a progress report of work as required by BHEL Engineer.

4.6.4 The work shall be executed under the usual conditions affecting major power plant constructions and in conjunction with numerous other operations at site. The Contractor and his personnel shall co-operate with other personnel and proceed in a manner that shall not delay or hinder the progress of work as a whole.

4.6.5 It is the responsibility of the contractor to arrange gate pass for all his employees, T&P etc. Necessary coordination with customer officials is the responsibility of the contractor. Contractor to follow all the procedures laid down by the customer for making gate passes. Where permitted, by customer/ BHEL, to work beyond normal working hours, the contractor shall arrange necessary work permit for working beyond normal working hours.

4.6.6 The Contractor's supervisory staff shall execute the work in the most substantial and work man like manner in the stipulated time Accuracy of work and aesthetic finish are essential part of this contract. The contract shall be responsible to ensure that assembly and workmanship confirm to the dimensions and tolerances given in the drawings/instructions given by BHEL Engineers, from time to time.

4.6.7 The Contractor shall employ the necessary number of qualified and approved full time electricians at his cost to maintain his temporary electrical installation till the completion of work.

4.6.8 It is the responsibility of the Contractor to engage his workmen in shifts or on over time basis for achieving the target set by BHEL and also during the period of commissioning and testing The Contractor's quoted rate shall include all these contingencies.

4.6.9 In case Contractor's progress is found unsatisfactory BHEL may deploy fitters, welders, operators and technicians on BHEL rates and will assist in improving the progress. All expenses incurred for will be recovered from Contractor's bill.

4.6.10 If the Contractor or his workmen or employees shall break, deface, injure or destroy any part of building, road kerb fence enclosure, water pipes, cables, drains, electric or telephone posts or

wires, trees or any other property or to any part of erected components etc., the Contractor shall make the same good at his own expense or in default, BHEL may cause the same to be made good by other workmen or by other means and deduct the expenses (of which BHEL'S decision is final) from any money due from the Contractor.

4.7 CIVIL WORKS

4.7.1 Column foundation and foundation for other plants, control room building and necessary civil works shall be provided by BHEL. The dimensions of the foundation and anchor bolt pits shall be checked by the Contractor for their correctness as per drawings. Further, top elevation of foundations shall be checked with respect to benchmark, etc. All minor adjustments of foundation level, dressing and chipping of foundation, up to 40mm surfaces, enlarging the pockets in foundations etc., as may be required for the erection of equipment/plants shall be carried out by the Contractor. All materials like cement, steel etc., shall also be arranged by the Contractor.

4.7.2 Any civil works required for safe and efficient operation of tools and tackles issued by BHEL like grouting/excavation casting of foundation for anchor points for derricks, winches etc., and any other temporary supports shall be the Contractor's responsibility.

4.7.3 The Contractor shall ensure perfect matching of packer plates with foundation by dressing the foundation and between the packer plates and the base plates of structural column/equipment to the satisfaction of BHEL Engineer.

4.7.4 Grouting of column base plates/equipments foundation box and base plates shall be carried out by the Contractor for which cement alone will be provided by BHEL on chargeable basis. All other materials to be arranged by Contractor.

4.7.5 The contractor shall satisfy himself regarding the correctness of the civil works, foundation, etc., so that the equipment erected by him shall not suffer due to any defects in the above. For this purpose, he should also visit site during the progress of civil construction works, if necessary, to ensure that the civil work is carried out as per his requirements.

4.8 SCOPE OF MATERIAL HANDLING

4.8.1 While BHEL will endeavor to store/stack/identify materials properly in their open/closed storage yard/shed, it shall be Contractor's responsibility to assist BHEL in identifying materials well in time for erection, taking delivery of the same, following the procedure indicated by BHEL and transport the materials safely to pre-assembly yard, erection site in time, according to schedule.

4.8.2 The Contractor shall identify necessary supervisor/labour for the above work in sufficient quantity as may be needed by BHEL for areas covering their scope.

4.8.3 It shall be the Contractor's responsibility to arrange for necessary crane/tractor/trailor or trucks/slings/tools and tackles /labour/including operators for loading from storage yard on to transport equipment, move it to erection site/pre-assembly yard and unload the same at pre-assembly yard/erection site and to erect the ESP and the quoted rate shall include the same. Bidders may please note that the storage yards are at an approximate distance of 5.0.km from erection site.

4.8.4 All equipments so used by Contractor shall be of proven quality and safe in operation as approved by BHEL Site Engineer's from time to time.

4.8.5 Any loss/damage to materials issued to Contractor shall be made good by him or BHEL will arrange for replacement at cost recovery basis and decision of BHEL shall be final.

4.8.6 The Contractor shall take delivery of components and equipment and special consumables from storage area after getting the approval of BHEL Engineer on standard indent forms.

4.8.7 In the event of Contractor's inability to arrange in time any of the above equipment/T&P etc., if possible BHEL shall provide the same on specific written request from the Contractor subject to the availability of equipment on the normal hire charges of BHEL, applicable from time to time and recoverable from Contractor's subsequent month's running bills.

4.8.8 All the surplus, damaged unused materials, package materials/containers, special transporting frames, gunny bags etc. supplied by BHEL shall be returned to BHEL Stores by the Contractor.

4.8.9 The Contractor shall have total responsibility for all equipment and materials in his custody, stores, loose, semi-assembled, assembled or erected by him at Site.

4.8.10 The Contractor shall make suitable security arrangements (round the clock) including employment of security personnel to ensure the protection of all materials/equipments and works from theft fire, pilferage and any other damage and loss at Site.

4.8.11 The Contractor shall ensure that all the packing materials and protection devices used for the various equipments during transit and storage are removed before these equipments are installed.

4.8.12 All equipments shall be handled very carefully to prevent any damage or loss. No bars, wire ropes, slings etc., shall be used for unloading and/or handling of the equipments with out the specific written permission of the Engineer. The equipment from the storage yard shall be moved to the actual site of erection/location at the appropriate time as per the direction of BHEL Engineer so as to avoid damage for such equipment at Site.

4.8.13 The Contractor shall take all reasonable care to protect the materials and work till such time the erected equipment has been taken-over by BHEL/their client. Whenever necessary suitable temporary fencing and lighting shall have to be provided by the Contractor as a safety measure against accident and damage of property of BHEL, suitable caution notices shall be displayed where access to any part may be deemed to be unsafe and hazardous.

4.8.14 The Contractor shall be responsible for taking all safety precautions during the constructions and leaving the site safe at the end of each working day and at all times. When the work id temporarily suspended, he shall protect all construction materials, equipments and facilities from causing damage to existing property interfering with the operation of the station when in goes into service. The contractor shall comply with all applicable provisions of the safety regulations, clean up programme and other precautionary measures, which the BHEL has in effect at the Site.

4.8.15 All lifting tackles including wire ropes, slings, shackles etc., used by the Contractor shall be got approved by BHEL Engineer at Site before they are actually put on the work.

4.8.16 The Contractor shall take delivery of equipment from storage yard/stores/sheds. He shall also make arrangements for verification of equipment, scrupulously maintain records and keep safe custody, watch and ward of equipment after it has been handed over to him till these are fully erected and tested and commissioned and taken over by BHEL's client. The stolen/lost/damaged good shall have to be made good by the contractor at his own cost.

4.9 PRESERVATION OF COMPONENTS

4.9.1 In order to maintain the surfaces of various components from rusting etc., frequent painting/re-painting of material at storage yard has to be carried out. Contractor has to arrange for supply

of paint/thinner etc., it is also shall be responsibility of Bidder/Contractor to provide sufficient number of unskilled category of labour for carrying out the preservative painting. The number of labour to be supplied will depend on the quantum of work awarded.

4.9.2 The above-referred labour will be given by the Contractor right through the contract period without fail and any failure on their part will entail in reduction of the value of their running bills.

4.9.3 It shall be the responsibility of the Contractor to apply preservative painting on equipments erected by him till such time of final painting. All paints and thinner will be supplied by CONTRACTOR and it shall be Contractor's responsibility to arrange for required labour, scaffolding materials, providing of scaffoldings, supply of cleaning materials like wire brush, emery sheets, etc., cleaning of surface and provide one coat of preservative painting from time to time as decided by BHEL Engineer. The quoted rate shall include this work also. It is to be noted that such painting may have to be done twice a year till such time the final painting is carried out.

4.9.4 The Contractor shall effectively protect the finished work from action of weather and from damage or defacement and shall cover the finished parts then and there for their protection.

4.9.5 Any failure on the part of the Contractor to carry out works according to above clauses will entail BHEL to carry out the job from any other party and recover the cost from the Contractor.

4.10 DRAWING AND DOCUMENTS

4.10.1 The detailed drawings, specifications, available with BHEL Engineers will form part of this Tender Specification These documents will be made available to the Contractor during execution of work at site.

4.10.2 One set of necessary drawings to carry out the erection work will be furnished to the Contractor by BHEL on loan, which shall be returned to BHEL Engineer at Site after completion of work. Contractor's personnel shall take care of these documents given to them.

4.10.3 Should any error ambiguity be discovered in the specification or information, the Contractor shall for with bring the same to the notice of BHEL before commencement of work BHEL's interpretation in such cases shall be final and binding on the Contractor.

4.10.4 The data furnished in various appendices and the drawings enclosed with this tender specification describes the equipment to be installed, tested and commissioned under this specification briefly. However, the changes in the design and in the quality may be expected to occur as is usual in any such large scales of work.

4.10.5 Deviation from design dimensions should not exceed permissible limit. The Contractor shall not correct or alter any dimension/details, without specific approval of BHEL.

4.11 SITE CLEANLINESS AND SAFETY REQUIREMENTS:

4.11.1 During the course of construction, alternation or repairs, scrap lumber with protruding nails, sharp edges etc., and all other debris shall be kept cleared from working areas, passageways and stairs in and around Site. Proper house keeping is the responsibility of the Contractor.

4.11.2 Combustible scrap and debris shall be removed at regular intervals during the course of construction. Safe means shall be provided by the Contractor to facilitate such removal. If this is not done regularly, BHEL will get the job done and debit the cost to Contractor.

4.11.3 Rigging equipments for material handling shall be inspected prior to use of each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service. Necessary test certificates have to be provided by the Contractor for the rigging and handling equipments brought by them. Otherwise this will be got to be done by BHEL and the cost will be debited to Contractor.

4.11.4 Rigging equipment shall not be loaded in excess of its recommended safe working load.

4.11.5 Rigging equipment when not in use shall be removed from the immediate work area so as not to present a hazard to employees.

4.11.6 The Contractor will notify the Engineer his intention to bring on to site any equipment or any container with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the conditions under which such equipment or container may be handled and used during the performance of the works and the Contractor shall strictly adhere to such instructions. The Engineers shall have the right to inspect any construction plant and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition shall be entertained.

4.11.7 Where it necessary to provide and/or store petroleum products or petroleum mixture and explosives, the Contractor shall be responsible for carrying out such provision and/or storage in accordance with the rules and regulations laid down in the relevant petroleum Act., Explosive Act and Petroleum and Carbide of Calcium Manual, published by the Chief Inspectorate of Explosives of India. All such storage shall have prior approvals of Engineer. In case any approvals are necessary from the Chief Inspector of Explosives of any other statutory Authorities, the Contractor shall be responsible for obtaining the same.

4.11.8 Valve protection caps shall be in place and secured.

4.11.9 Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dropped, struck or permitted to strike each other violently.

4.11.10 When cylinders are transported by powered vehicles, they shall be secured in vertical position.

4.11.11 All the hand lamps used by the contractors workmen shall be of 24V only. Adequate step down transformers should be installed at site to cater to the complete requirement. (230V hand lamps should not be used).

4.11.12 All workmen of the Contractor working construction areas shall wear safety helmets and/or safety belt when working at heights. Contractor shall insure his workmen against all accidents, and the policy shall be presented to BHEL will arrange the same and the expenditure towards this will be debited to the Contractor. In case the Contractor fails to provide necessary safety equipments to workmen, BHEL will provide the same to the workers and recover the cost of equipment along with BHEL overheads.

4.11.13 All the above safety conditions are not exhaustive but gives an idea for the Contractor and the Contractor shall adhere to all the safety precautions given by the BHEL Engineer at Site. Such of those workmen who do not follow safety precautions shall be turned out from Site. They will not be allowed to work until they fulfill safety regulations.

4.11.14 Contractor shall arrange at his cost suitable flood lighting arrangement at various levels for safe and proper working during night hours at the work spot as well as at the pre-assembly area.

4.11.15 The Contractor shall be responsible for provision of all the safety notices and safety equipments as enjoined on him by the application of relevant statutory regulations/provisions and/or as called upon by the BHEL Engineer from time to time.

4.11.16 The Contractor shall provide temporary fencing wherever required as a safety measure against accident and damage to properties. Suitable caution notices shall be displayed where access to any part is found to be unsafe and hazardous.

4.11.17 The Contractor shall ensure the safety of all the workmen, material and equipments either belonging to him or to others working at site.

4.11.18 It will be the responsibility of the Contractor to ensure safe lifting of the equipments, taking due precaution to avoid any accidents and damages to other equipments and personnel.

4.11.19 The Contractor shall provide necessary first aid facilities for all his employees, representatives and workmen working at Site.

4.11.20 All the Contractor's Supervisory personnel and sufficient number of workers shall be trained for fire fighting and shall be assigned specific fire protection duties. Enough number of such trained personnel must be available during the tenure of the Contract. Contractor should nominate one of his supervisors to co-ordinate and for implementation of safety measure.

4.11.21 Contractor shall provide enough fire fighting equipment of the types and numbers at his office, temporary structures, labour colony area etc. Access to such fire fighting equipment shall be easy and kept open at all times. Compliance of the above requirement under fire protection shall it no way relieve the Contractor of any of his responsibilities and liabilities to fire accident occurring.

4.11.22 The Contractor shall at his cost remove of on vicinity of work, all scrap packing materials rubbish unused and other materials and deposit them in places specified by BHEL engineer to keep the work Site clean and tidy.

4.12. **TIME SCHEDULE**

4.12.1 The entire work of erection, testing and commissioning of the under the scope of work shall be completed within the time specified in the time schedule.

4.12.2 Time is the essence of this contract. The contractor shall be able to mobilize his manpower, tools, plants and consumables round the clock for the entire period to complete the work within the stipulated time.

4.12.3 For this purpose the completion of erection work shall be deemed to be completed in all respects only when the trial runs of motors, charging of transformers, panels and instruments/equipments are completed and certified so by BHEL Engineer. The decision of BHEL in this respect shall be final and binding on the contractor.

4.12.4 The commissioning of the unit shall be deemed to be completed in all respects only when all the equipments are tested and commissioned and the Unit is ready for commercial operation.

4.13. **IDLE LABOUR**

4.13.1 No idle labour charges will be admissible in the event of any stoppage caused in the work resulting in contractor's labour being rendered idle due to any cause at any time.

4.14. **PRICE ESCALATION**:

4.14.1 The Contractor has to keep his quoted rates firm for the entire contractual period including total extended period, if any, and no claim for revision of rates is allowed under any circumstances.

4.14.2 However, the Contractor shall maintain sufficient work force and other resources required for completion of the job expeditiously for the entire contractual period including total extended period.

4.14.3 **OVER-RUN COMPENSATION** : In case due to unforeseen circumstances and due to reasons not attributable the Contractor, the work gets delayed and completion time gets extended as per Bar Chart from the date of actual start of work at Site, the Contractor shall not be entitled for any over run compensation for a period of first 3 months after the Contractual completion date. However, the contractor shall be paid over-run charges for extension in the completion period beyond 3 months as stated above and for reasons not attributable to the Contractor.

4.15 INSPECTION / QUALITY ASSURANCE / QUALITY CONTROL STATUTORY INSPECTION

4.15.1 Various inspection/ quality control/ quality assurance procedures/methods at various stages of erection and commissioning will be as per BHEL / customer quality control procedure/codes and the other statutory provisions and as per BHEL Engineers instructions.

4.15.2 Preparation of quality assurance log sheets and protocols with customer's engineers, and other quality control and quality assurance documentation as per BHEL engineer's instructions, with in the scope of work / specification.

4.15.3 The protocols between contractor and customer / BHEL shall made prior to installation for correctness of foundations, materials, procedures, at each stage of installation, generally as per the requirement of customer/BHEL. This is necessary to ensure elimination of errors or keeping them with in tolerable limits and to avoid accumulation and multiplication of errors.

4.15.4 A daily log book should be maintained by every supervisor/engineer of contractor on the job in duplicate (One for BHEL and one for contractor) for detailing and incorporating alignment/clearance/centering Levelling readings and inspection details.

4.15.5 Approval given by customer/BHEL for welding, results tests etc. shall also be recorded in the log book.

4.15.6 All the electrical/technical Measuring and Testing instruments / Gauges, Feeler gauges, Height Gauges , Dial Gauges, micrometers, Levels, Sprit Levels, surface Plates, Straight Edges, Vernier calipers and all measuring instruments shall be provided by the contractor for checking, Levelling, Alignment, testing etc of erected equipments at various stages. The instruments/ gauges/tools etc. provided should be Brand, quality and accuracy, specified by BHEL engineer and should have necessary calibration and other certificates as per the requirements of BHEL engineer.

4.15.7 Re-work necessitated an account of use of invalid instruments/measuring devices etc. shall be entirely to the contractor's account. The contractor shall be responsible for taking corrective actions, including resource augmentation if any, as specified by BHEL to make- up for the loss of time.

4.15.8 Total quality is the watch word of the work and standards, procedures laid down by BHEL. We shall follow all the instructions as per BHEL drawings and quality/standards. Contractor shall provide for the services of quality assurance engineer.

4.15.9 **STAGE INSPECTION BY FES/ QA ENGINEER:** Apart from Day-to-Day inspection by BHEL Engineers stationed at site and also by customers engineer's, stage inspection of

equipment under erection and commissioning at various stages of erection and commissioning by TEAMS of engineers, from field engineering services of BHEL's Manufacturing units and quality assurance unit/ factory quality assurance and commissioning engineers. Customer shall arrange all labour, Tools and tackles, etc. for such stage inspections free of cost.

4.15.10 Any modification suggested by FES and QA engineers team shall be carried out claims of contractor, if any shall be dealt as applicable.

4.15.11 Any minor rectifications of major repairs of defective work found out during stage inspection shall be rectified free of cost, by the contractor

4.15.12 Any major rectification or major repair/ major rework of defective work found out during stage inspection verification/checking but not attributable to contractor shall also be carried out. Claims of contractor if any, shall be dealt as applicable.

4.16. SUBMISSION OF PERIODICAL REPORTS

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

1) Consumption of welding electrodes and gases
2) Consumption of construction power
3) Manpower reports
4) Progress reports - periodically
5) Field calibration reports

BHEL at site will inform formats for these reports, which have to be printed by the contractor at their cost.

4.17 ELECTRICAL INSPECTORATE'S APPROVAL / STATUTORY COMPLIANCE

4.17.1 Contractor shall have/obtain electrical contractors License to carry out the Erection, Testing & commissioning work on High/Low voltage Electrical Equipments from the appropriate statutory authority of the concerned state or Central Electricity Authority, as the case may be. All fees and expenses in this regard shall be in the contractor's account.

4.17.2 Contractor shall arrange inspection of concerned statutory authority for the installation, testing & commissioning of High/Low voltage equipments covered under the scope of work and including those erected by other agencies and obtain the statutory authorities approval in appropriate format prior to charging of the equipments.

4.17.3 Contractor shall be responsible for all necessary liasioning work with statutory authority towards the certification of installation / works. BHEL will pay statutory fees in respect of inspection of installations as per demand note/challan issued by the statutory authority. All other expense shall be borne by the contractor. BHEL/BHEL's customer shall be providing technical assistance, drawing and document for submission to statutory authority. Contractor shall provide all logistics services in this regard.

4.17.4 In case these inspections have to be repeated due to Default/Fault of the contractor and fees have to be paid again, the contractor shall have to bear the charges. These would be deducted from their Bills.

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SPECIAL CONDITIONS OF CONTRACT

SECTION - V

5.0 EXTRA CHARGES FOR MODIFICATION AND RECTIFICATION WORKS:

5.1 BHEL may consider payment for extra works on man-hour basis for such of those works which require major modification of the supplied components which is totally unusual to normal revamping / erection / commissioning work and which are not due to contractor's faulty erection.

5.2 The decision of BHEL in this regard shall be final and binding on the contractor. The contractor may submit his work claim bills (specifically agreed by BHEL Engineer) along with the labour sheets duly certified by BHEL Engineer at site. But BHEL may opt to get those work done through other agencies if they so desire.

5.3 All the extra works, if any, carried out should be done by a separate gang which should be identified prior to start of work for certification of man-hours. Daily labour sheets should be maintained and should be signed by the contractor's representative and BHEL Engineer. Signing of labour sheets does not necessarily mean the acceptance of extra works. Only those works which are identified as not usual to normal revamping / erection and certified so by the Site-in-Charge of BHEL and accepted by designers/supplier's competent authority only will be considered for payment. The decision of BHEL in this regard shall be final and binding on the contractor.

5.4 Average single manhour rate including overtime if any, supervision, use of tools and tackles and other site expenses and incidentals, **including consumables, if any required,** for carrying out any rework / rectification that may arise during the course of revamping shall be **Rs. 60/- per man hour.**

5.5 Extra works are broadly defined as below:

i) Design changes which will be intimated to the contractor after the start of the work which call for dismantling of the erected components, rectification, modification, etc.

ii) Repair / rectification of the components damaged during transit and intimated to BHEL before drawing the materials from BHEL stores.

iii) Modification, rectification of components wrongly manufactured/fabricated at works subject to acceptance of the approving authority. Any such modification work costing less than 48 Man Hours per work of a DU shall be considered as incidental to erection and shall not be considered for payment.

iv) Jobs which require major modification, major repair, major reworks etc. which will be identified as major and warrant extra payment, certified as such by the Site-in-Charge of BHEL and accepted by the designers/competent authority of BHEL. The decision of BHEL in this regard shall be final and binding on the contractor.

v) The composite labour man hour rate towards extra works shall remain firm and not subject to any variation during execution of work. Price variation compensation (PVC), if any will not be applicable for extra works. Rate revision, Over-run charges / compensation etc. will not be applicable due to extra works.

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SPECIAL CONDITIONS OF CONTRACT

SECTION – VI

6.0 OVER-RUN COMPENSATION (ORC) :

6.1 In case due to reasons not attributable to the contractor, the work gets delayed and the completion gets extended beyond the contract completion date by more than the grace period of 3 months, the contractor shall be paid Over Run Compensation for every month of extended period so determined by BHEL beyond the contract completion date (and the grace period) indicated in this specification.

6.2 ORC will be paid only at the end of the contract period, including extension/s of period if any, after ascertaining the actual period of eligibility of delay as aforesaid. For this purpose, the contractor shall submit details of factors with time estimates which accounted for the delay in work completion.

6.3 All decisions of BHEL in this regard shall be final and binding on the contractor. The period to be considered for ORC shall not include loss of time due to Force-majeure conditions explained in this tender.

6.4 The ORC shall be paid by BHEL only after completion of all works within the scope of the works awarded to the Bidder. Hence, it is obligatory on the part of the Bidder to complete the works during extended period also.

6.5 This supplements the clause 5.12 of Special conditions of Contract for Mechanical works - V enclosed along with this tender specification.

6.6 The rate of ORC payable per month shall be Rs.35000/- only . It is mandatory on the part of the contractor to maintain a minimum of 04 workmen during the ORC period. The total Over-run compensation shall be limited to 5% of the executed contract value, as certified in the Final Bill. For this purpose executed contract value excludes Price variation compensation (PVC), ORC, Supplementary / Additional items and Extra works done on manday/hr rate basis. The total eligibility period will be determined by BHEL.

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SPECIAL CONDITIONS OF CONTRACT

SECTION – VII

7.0 GENERAL TERMS AND CONDITIONS OF REVERSE AUCTION

7.1 For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.

7.2 Those bidders who have given their acceptance for reverse auction (quoted against this tender enquiry) will have to necessarily submit online sealed bid in the reverse auction. Non-submission of online sealed bid by the bidder for any of the eligible items for which techno-commercially qualified will be considered as tampering of the tender process and will invite action by BHEL as per extent guidelines in vogue.

7.3 **In case BHEL decides to go for reverse auction, the H1 bidder (which quote is highest in online sealed bid) may not be allowed to participate in further reverse auction process.**

7.4 BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on Internet.

7.5 In case of reverse auction, BHEL will inform the bidders the details of service provider to enable them to contact and get trained.

7.6 Business rules like event date, time, start price, bid decrement, extensions, etc. also will be communicated through service provider for compliance.

7.7 Bidder have to fax the compliance form in the prescribed format (provided by service provider) before start of Reverse auction. Without this the bidder will not be eligible to participate in the event.

7.8 BHEL will provide the rate schedule (e.g. EXCEL sheet) for the vendor to enable them to fill-in the price and keep it ready for keying in during the auction. In the event of discrepancy in rate and amount against any item of work, the least of the two will be taken for bid price. In case of discrepancy between the total price indicated in price bid and the arithmetic sum arrived based on rate quoted, then also the least of the two will be taken for the bid price. The bids are compared on the total price quoted and NOT on individual ITEM of works.

7.9 Reverse auction will be conducted on scheduled date & time.

7.10 At the end of reverse auction event, the lowest bidder value will be known on the auction portal.

7.11 The lowest bidder has to fax or email the duly signed and filled-in prescribed format for price break-up including that of line items, if required, as provided on case-to-case basis to BHEL through Service provider within two working days of auction without fail.

7.12 Opening bid in reverse Auction: The opening bid (in the reverse Auction) of the bidders shall be same as that quoted in their final sealed price submitted to BHEL(along with Technical offer). The bidder shall confirm in writing to BHEL that their opening bid (in reverse auction) shall be same as that quoted in their final sealed price bids submitted to BHEL against this NIT along with Technical Bid (Patr-1).If any bidder offered a unsolicited discount or rebate, in separate cover etc. in any place other than the sealed price bid, then the opening price bid in reverse auction, by such a bidder in Reverse Auction, shall be the price offered in final sealed

price bid submitted (against this NIT) minus discount offered in any place other than the sealed price bid**.**

7.13 BHEL reserves the right to cancel Reverse Auction (RA) without assigning any reasons and resort to considering the sealed bids submitted by vendor for processing and finalizing the tender.

7.14 In case the process of reverse auction is found unsuccessful by BHEL, then BHEL at its discretion may decide to call the L1 bidder of reverse auction for further negotiation.

7.15 Any variation between the on-line bid value and signed document will be considered as sabotaging the tender process and will invite disqualification of vender to conduct business with BHEL as per prevailing procedure.

7.16 In case BHEL decides not to go for Reverse auction procedure for this tender enquiry, the Price Bids and price impacts, if any already submitted and available with BHEL shall be opened as per BHEL's standard practice.

7.17 The bidders shall be required to read the Terms & Conditions section of the auction site of service provider, using the login id and password given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the business rules of the reverse auction, which will be communicated before the reverse auction.

7.18 If the bidder or any of his representatives are found to be involved in price manipulation / cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines shall be initiated by BHEL and the result of the RA scraped / aborted.

7.19 The bidder shall not divulge either his / her bids or any other exclusive details of BHEL to any other party.

7.20 Only those vendors, who participate in the Online Initial Opening Bid, will be eligible to participate in the subsequent Online English Reverse Auction.

7.21 Price bids offered by the bidders during reverse auction process is considered as an offer to execute the work. Bids once made by a bidder cannot be cancelled/withdrawn and bidders shall be bound to execute the work at the final bid price. BHEL shall take appropriate action if the bidder fails to do so.

7.22 CANCELLATION OF RA : Even where BHEL has specified Reverse Auction (RA) as the mode of competitive bidding in the tender enquiry, BHEL reserves the right to cancel the RA and go in for competitive sealed price bidding. In that event, BHEL would intimate the technically acceptable bidders of the same in writing. The decision of BHEL to replace RA with competitive sealed bidding would be final and binding on all the technically qualified bidders. BHEL is under no obligation to assign any reason for changing the mode of bidding from RA to sealed cover competitive bidding. It shall be presumed that all bidders participating in this tender have read this condition and accepted the same, in submitting their offer. Bidders would then be given an opportunity to submit their reduction impact price bid, if any, in sealed cover, which would be considered together with the price bids submitted along with the Original / Technical bid and other impact price bids , if any , arising out of change in the technical scope. In case the bidders choose not to offer any reduction impact, then they would have to submit a statement to that effect, also in a sealed cover for opening along with price bids.For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.

STATUTORY REQUIREMENT

OF

CONTRACT

(FORMATS & PROCEDURES)

ES : F : 009

R 05- 275

ERECTION SERVICES DEPARTMENT
BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
BOILER AUXILIARIES PLANT
INDIRA GANDHI INDUSTRIAL COMPLEX
RANIPET – 632 406

BHARAT HEAVY ELECTRICALS LIMITED
BOLIER AUXILIARIES PLANT
INDIRA GANDHI INDUSTRIAL COMPLEX
RANIPET –632 406.

TENDER SPECIFICATION NO. : **BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**

CHECK LIST

Bidders are required to fill in the following details:

1. a. Name of the Bidder :
With address,
Phone No., Mobile No., Fax and e-mail.

b. Nature of Firm :

2. Whether EMD submitted as per tender Specification Terms and conditions : YES / NO

3. Validity of offer (offer shall be kept valid for acceptance for a period of minimum 6 months) : YES / NO

4. Whether Bidder visited the erection Site and acquainted with Site Conditions before quoting : YES / NO

5. Whether the following details are furnished.

a. Previous Experience – Photocopies as in QR : YES / NO

b. Present assignments : YES / NO

c. Organization chart of the Company : YES / NO

d. Financial status of the Company : YES / NO

e. In case of Company, proof of registration of the Company : YES / NO

f. Memorandum and Articles of Association of Company / copy of Partnership Deed. : YES / NO

g. Profit and Loss Account For the last three Years : YES / NO

h. Balance sheet for the last three years : YES / NO

i. Income Tax clearance Certificates : YES / NO

j. Solvency Certificate from a Nationalized Bank : YES / NO

k. Power of Attorney of the person signing the tender duly attested by a Notary Public : YES / NO

l. Names and addresses of Directors, Partners their Experience and qualification : YES / NO

m. Manpower Organization chart and Tools list with deployment plan at Site for satisfactory completion of work under this specification : YES / NO

n. EPF registration No. (with a copy of certificate) : YES / NO

o. Service Tax registration No. (with a copy of certificate) : YES / NO

p. E- payment acceptance as per appendix. : YES / NO

q. Rate schedule as per the schedule appended : YES / NO

6. Whether the Bidder is conversant with local labour laws and conditions : YES / NO

7. Whether the Bidder is aware of all safety Rules and codes. : YES / NO

8. Whether the declaration sheet (as per appendix enclosed) filled : YES / NO

9. Whether the erection schedule (as per appendix enclosed) furnished : YES / NO

10. Whether all the pages are read, understood and signed : YES / NO

SIGNATURE OF BIDDER

NOTE : The Bidders are requested to peruse the Tender Specification terms and conditions carefully and furnish the above information also in detail as required.

OFFER OF THE BIDDER
(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

To

The Dy. General Manager
Erection Services Dept,
Bharat Heavy Electricals Limited,
Boiler Auxiliaries Plant,
Indira Gandhi Industrial Complex,
RANIPET –632 406. (TAMIL NADU).

Sir,

I/We hereby offer to carry out the work detailed in the Tender Specification No. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238 issued by M/s. Bharat Heavy Electricals Limited, Boiler Auxiliaries Plant, Ranipet in accordance with the terms and conditions thereof:

I/ we have carefully pursued the following documents connected with the above work and agree to abide by the same. We herewith confirm that we have visited the site of work at RSP, Rourkela.

a. General terms and conditions of work (ES: F:010)
b. Statutory requirement of Contract (ES: F:009)
c. Special conditions of Contract for Electrical works (BAP:ERN:ELEC:SPN:01)
d. Tender Specification no. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238
e. Special Instructions to Bidder
f. General terms and conditions of Reverse Auction.
h. Other sections, appendices, schedules and drawing.

I/We have deposited / forwarded herewith the Earnest Money Deposit in the form prescribed and as stipulated in Clause No.1.4. of the General Conditions of Contract for Works towards the Earnest Money Deposit for a sum of **Rs.1,00,000/- (Rupees One Lakh only)** vide Pay Order No……Dt……... 2014 / Demand Draft No……dt……. 2014 which shall be refunded should our offer not be accepted. Should our offer be accepted, I/We further agree to deposit such additional sum, within the stipulated time as may be indicated by BHEL, which along with the sum of **Rs.1,00,000/-** mentioned above, shall make up the Security Deposit for the work as provided for in clause 1.8.2 of the General Conditions of Contract for Works.

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 indicated in the Annexure enclosed thereto.

SIGNATURE OF BIDDER:

Place: ADDRESS:
Date:

WITNESSES WITH FULL ADDRESS

	SIGNATURE	NAME	ADDRESS
1)			
2)			
3)			

TENDER SPECIFICATION No. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238

(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

CERTIFICATE OF NO DEVIATION

I / We ……of M/s ……..
hereby certify that there is no deviation from the Tender conditions either technical or commercial and I am / We are agreeing to all the terms and conditions mentioned in the Tender Specification (**No. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238**).

Date :

SIGNATURE OF THE BIDDER

TENDER SPECIFICATION No. : BAP : ERN : RSP : SINTER: ESP : ELEC :C : 238

(FORMAT - To be typed written in LETTER HEAD and submitted along with offer)

DECLARATION SHEET

I, …… hereby certify that all the information and data furnished by me with regard to this Tender Specification No. : BAP :ERN :RSP :SINTER:ESP :ELEC:C : 238 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 specifications. Further certify that I am duly authorized representative of the under mentioned Bidder and a valid power of Attorney to this effect is also enclosed.

BIDDER'S NAME AND ADDRESS:

AUTHORISED REPRESENTATIVE'S SIGNATURE
WITH NAME AND ADDRESS

FINANCIAL VIABILITY

1.	**Owner's Capital in the business (In case of Partnership please Mention percentage of shares and Amount)**	**: Rs.**
2.	**Quantum of business done during Last three financial years.** **1.** **2.** **3.**	**: Rs.**
3.	**Value of Fixed Assets of the business in last three years** **1.** **2.** **3.**	**: Rs**
4.	**Guarantee limits (if any) Enjoyed by the firm**	**: Rs.**
5.	**Overdraft limits (if any) Enjoyed by the firm**	**: Rs.**
6.	**Income Tax paid during the last three Years**	**: Rs.**
7.	**Please state whether audited profit and Loss Account and Balance Sheet for last 3 Years and Solvency Certificate are Enclosed.**	**:**

Signature of the Bidder

ORGANISATION STRUCTURE

1. **Management structure of the firm:**
   Whether public limited / Private Limited / Sole Proprietorship / Partnership.

2. **Details of the staff presently on permanent rolls of the organization.**

a) Engineering / Supervisory Staff.
Quote Experience in types of works as well as number of years in each.

Sl. No.	Name and Designation	Qualification	Experience	Proposed to be deployed at Site for this job	Remarks if any

Signature of the Bidder

b) Details of Technical staff:

Sl. No.	CATEGORY	Total Number on Rolls	Numbers Proposed to be deployed at site for this job Experience
01.	Supervisors / Foreman		
02.	Store Keepers		
03.	Electrician		
04.	Fitters		
05.	Welders		
06.	Sarang		
07.	Rigger		
08.	Painter		
09.	Light Vehicle Driver		
10.	Heavy vehicle Driver		
11.	Semi-skilled worker		
12.	Unskilled Worker		
13.	Crane Operators		
14.	Crane Maintenance Staff		
15.	Other vehicles maintenance staff		
16.	Other category of staff, if any		

Signature of the Bidder

FACILITIES FOR STAFF & WORKERS AT SITE

1. ACCOMMODATION:

a) For Engineer / Supervisor / other staff

Sl. No.	Category	Type of accommodation	Facilities provided	Remarks if any

b) No. of quarters, plinth area of each quarter and estimated cost proposed to be constructed for workmen.

1. **MEDICAL:**

2. **CONVEYANCE:**

3. **OTHER AMENITIES:**

Signature of the Bidder

SCHEDULES TO BE FURNISHED BY THE BIDDER

1. Bidder shall submit the following technical proposal documents (a detailed write–up on his erection plan) along with the offer indicating the proposal to achieve the milestone dates, giving details of erection sequence, manpower deployment plan and T&P deployment plan for the various erection activities. The bidder shall submit histograms for Equipment, Staff and Labour to be deployed on the Work.

2. Bidders are required to submit details for the above. Bids received without above are liable to be rejected.

3. The Bidder is required to submit the following schedules along with the offer.

Schedule A:
PERT / CPM Bar Chart showing Work Breakdown Structure, time schedule and Milestone dates

Schedule B:
Schedule of Plant, Equipment and Tools

Schedule C:
Schedule of Project Staff (identifying skill and work area)

Schedule D:
Schedule of Labour -Day wise deployment of skilled / semiskilled / unskilled and other categories of workers to suit the above programme.

Schedule E:
List of Documents submitted towards proof of meeting the requirements of Technical Evaluation Criteria.

SCHEDULE 'G
Construction power / electricity required for / Office / stores / workshop sheds, etc. of the Bidder in the following format.

a) Construction power required

	Average	Peak
Amp ……		
KVA ……		

b) Electricity required for Office & Storage sheds

	Average	Peak
Amp ……		
KVA ……		

4. Tender offers are liable to be rejected in the event of non-submission of above schedules along with the offer complete with all the details asked for.

Note: Contractor may also indicate their ability in completing the contract in a period shorter than that mentioned.

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ANALYSIS OF UNIT RATE QUOTED (Only Percentages to be Quoted)

Sl. No.	Description	Percentage of the unit rate quoted	Remarks if any
01.	Site facilities viz. electricity, water, workshop and other infrastructure facilities		
02.	Salary & wages for staff and workers		
03.	Consumables a) Gases b) Electrodes c) Steel materials d) Others		
04.	Depreciation and maintenance for T&P, other items		
05.	Establishment and Administration expenses of sites		
06.	Retrenchment benefit		
07.	Overheads		
08.	Extra work incidental to erection		

NOTE: All Bidders are requested to take care that the rates quoted by them are not disclosed in any way while furnishing the above details.

Signature of the Bidder

A - 1

STATUS OF TOOLS & PLANTS

List of equipments / Machinery / T&P owned by the contractor and proposed to be deployed by the contractor for this work.

NOTE: Bidders are required to furnish the details as desired below with regard to the equipments machinery, tools & plants, consumables and workshop facilities owned by them along with documentary proof for the same.

Sl. No.	Name of the equipment	Total Qty. Available	Quantity Proposed to be Deployed	Type Capacity Specifi-cation	Year of make	Date of Purchase	Registration Number	Present Location	Utility Factor of the Machine
1	2	3	4	5	6	7	8	9	10
01	**Details of Tools & Tackles / Measuring instruments / equipment given in Apendix - I**								
02	18T / 14T /12T / 10 T Capacity Mobile crane								
03	5T or 8T Capacity fork-lift or Hydromack								
04	Tractor Trailors								
05	Trucks								
06	Wooden sleeper								
07.	DC Welding Generator / Welding transformer with cables								

Signature of the Bidder

1	2	3	4	5	6	7	8	9	10

08. Electrical winches
09. Hand winches

10. Hydraulic Torque wrenches

11. Electrode drying oven

12. Portable electrode drying oven

13. Spur gear chain pulley block

14. Gas cutting set with hoses

15. Hydraulic jacks

16. Low voltage 24V transformer
    with Hand lamps
17. Single sheave snatch pulley blocks

18. 3T Capacity D shackle

19. 5T Capacity D shackle

20. Portable grinders

21. Peumatic drill ½" & 1"

22. Torque wrenches

23. Steel wire ropes for guy ropes

Signature of the Bidder

B-I

ANALYSIS OF SIMILAR JOBS EXECUTED / IN PROGRESS IN THE LAST SEVEN YEARS

Sl. No.	Details of Jobs executed / In progress With location of projects	Financial value of the contracts	Number of Strikes / work stoppages with duration and mandays Lost during Execution of job	Number of accidents (fatal / Minor)	Details of insurance provided for the workers for accidents / deaths	Details of safety equipments provided to workers
1	2	3	4	5	6	7

Signature of the Bidder

B – II

(FOR ESP PROJECTS ONLY)

Sl. No.	Name of the Project with unit capacity	Date of letter of Intent	Date of start of erection	Date of collecting electrode Loading	Trial run of rapping motors	Date of air tightness test	Date of GD test	Testing & commissioning
1	2	3	4	5	6	7	8	

Signature of the Bidder

APPENDIX – II

(To be filled by Bidder and submitted along with Tender document)

S.No.	PARTICULARS	YES	NO
01	**SERVICE TAX**		
a.	Service Tax Registration No. of Bidder (copy to be enclosed)		
b.	Issue of Service Tax Invoice as per Rule 9 of Cenvat Credit rules2004		
c.	Whether Bidder is taking Service Tax Credit for their Inputs		
d.	Under which Service Head is Service provided		
e.	If Service Tax is Exempted , furnish reasons		
f.	BHEL Service Tax Registration No. (To indicate in your Invoice) **:AACB/4146/PST/008**		
02	**INCOME TAX**		
a.	PAN No. of Bidder		
b.	If Exempted , furnish exemption Certificate		
c.	PAN No. of BHEL **: AAACB/4146/P**		
03	**WC ST**		
a.	CST Registration No.		
b.	VAT Registration No.		
c.	Whether Bidder is availing VAT Credit		
d.	If Exempted , furnish Reasons		
	NOTE :		
	1. **Erection & Commissioning Part** : Rates Quoted for shall be clearly indicated that they are INCLUSIVE of all Taxes & Duties except service tax. The Contractor has to issue invoice accordingly. Also refer clause 16.0 of Tender specification. 2. **Supply Part :** If applicable, VAT / CST shall be quoted separated as indicated in Price bid.		
	3. Payment will be made **only through e-payment** to your account. Payment through Cheque / DD payment will not be made by BHEL.		

Bidder has to submit Banker's Certificate as per format specified in APPENDIX- IV.

Agreed to the Above Conditions

Signature of the Bidder :

APPENDIX – III

ACCEPTANCE FOR ELECTRONIC FUND TRANSFER / RTGS TRANSFER

01	**NAME & ADDRESS OF THE SUPPLIER / VENDOR**	
02	**VENDOR CODE** (as in Work Order)	
03	**Details of Bank Account:**	
A)	**NAME & ADDRESS OF THE BANK** (WITH PIN CODE)	
B)	**BANK TELEPHONE NUMBER** (WITH STD CODE)	
C)	**BANK BRANCH CODE**	
D)	**MICR CODE**	
E)	**ACCOUNT NUMBER**	
F)	**TYPE OF ACCOUNT**	CURRENT A/C / OD / CASH CREDIT
G)	**VENDOR NAME AS PER BANK RECORDS**	
H)	**BANK BRANCH RTGS IFSC CODE**	
I)	**BANK BRANCH NEFT IFSC CODE**	
J)	**VENDOR'S EMAIL ID** (give two ids)	
K)	**NAME OF AUTHORISED SIGNATORY**	

CERTIFICATE

I / We hereby agree to receive the payments due from BHARAT HEAVY ELECTRICALS LIMITED, RANIPET by the National Electronic Funds Transfer and/or RTGS Transfer mode by credit to my / our above mentioned Bank Account. I / We also agree that payments made to the above mentioned Account is a valid discharge of the liability of Bharat Heavy Electricals Limited, Ranipet. I / We also agree to bear the applicable Bank Charges for the above mode of transfer.

AUTHORISED SIGNATORY OF VENDOR WITH SEAL

Banker's Certification

We confirm that we are enabled for receiving RTGS and NEFT credits and we further confirm that the account number of_____(name of account holder), the signature of the authorized signatory and the MICR and IFSC codes of our Branch mentioned above are correct.

PLACE:

DATE:

_____
(Manager / Officer's)
signature Under Bank stamp
Authorisation No. _____

Note: This EFT form is to be submitted duly filled in manually in all fields and dully signed by Authorized Signatory and certified by Banker

APPENDIX – IV

Certified by Chartered Accountant on letter head

This is certify that M/s ……, (hereinafter referred to as 'company') having its registered office at …… is registered under MSMED Act 2006, (Entrepreneur Memorandum No (part–II) …… dtd :…… Category:……(Micro/Small)).(Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as on date …… as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722(E) dated 5, 2006 :
   Rs……... Lakhs
2. **For Services Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
   Rs…….. Lakhs

The above investment of Rs…….. Lakhs is within permissible limit of Rs…… Lakhs for ……. Micro/Small **(Strike off which is not applicable)** Category under MSMED Act 2006.

Date:

(Signature)

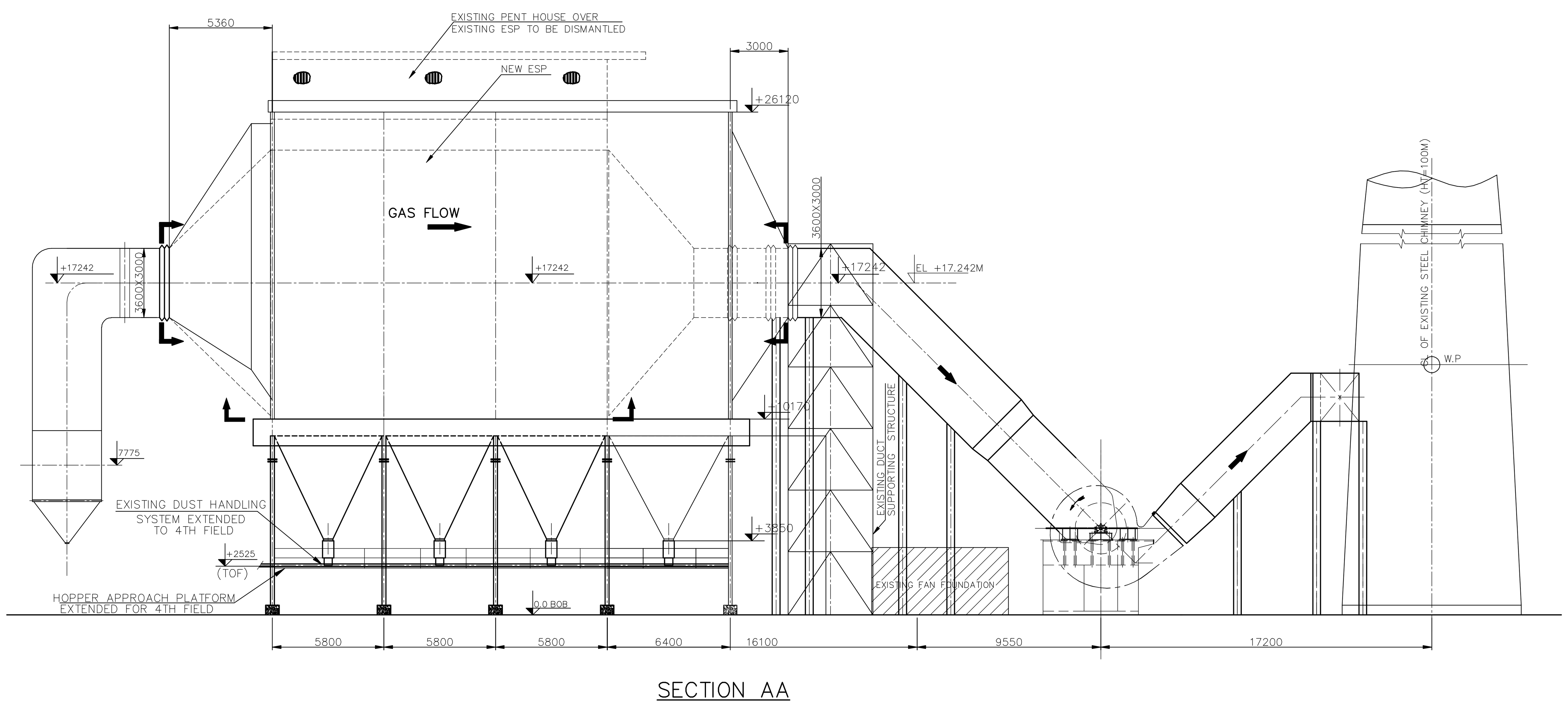
Name –

Membership Number –

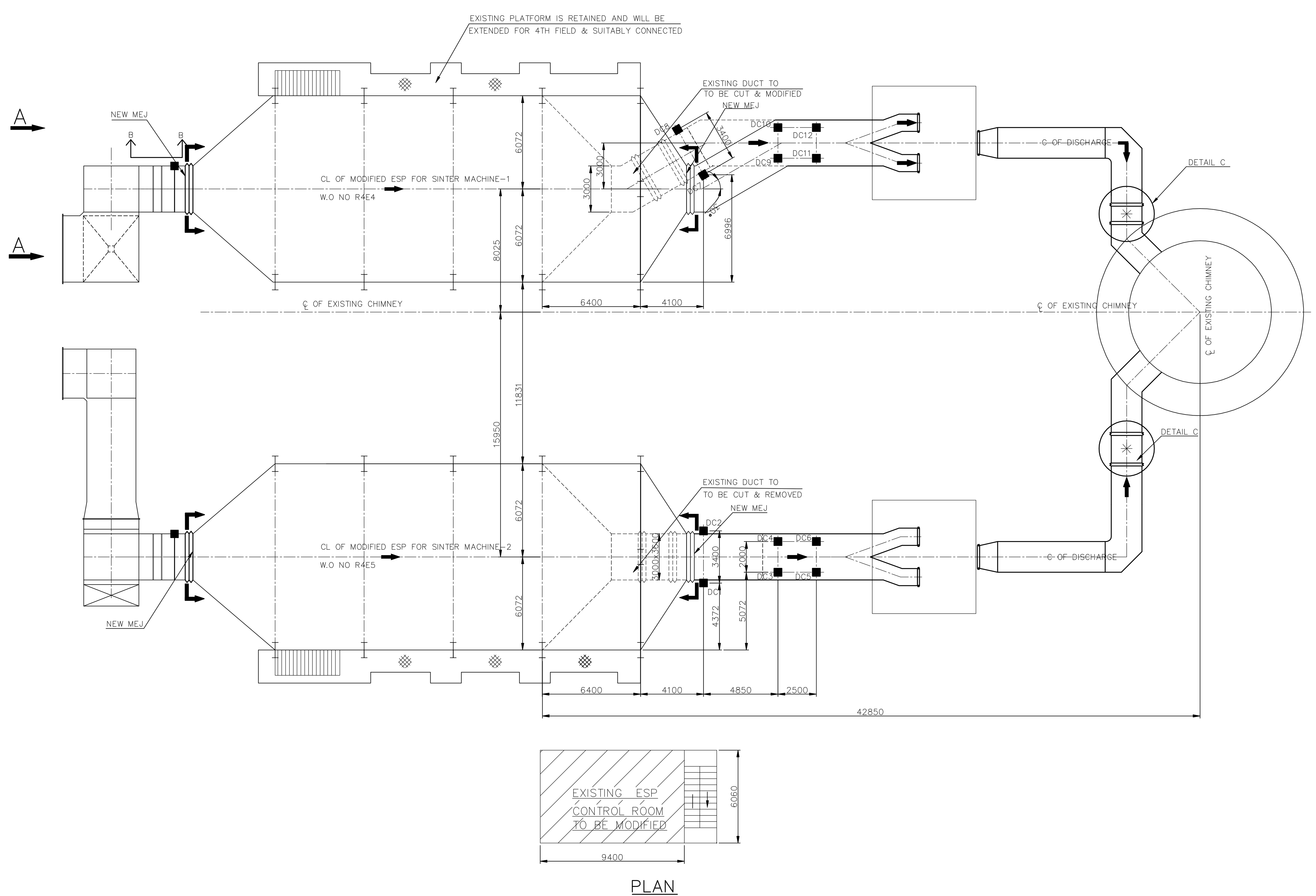
Seal of Chartered Accountant

DRAWING NO. 1-00-111-28827/01

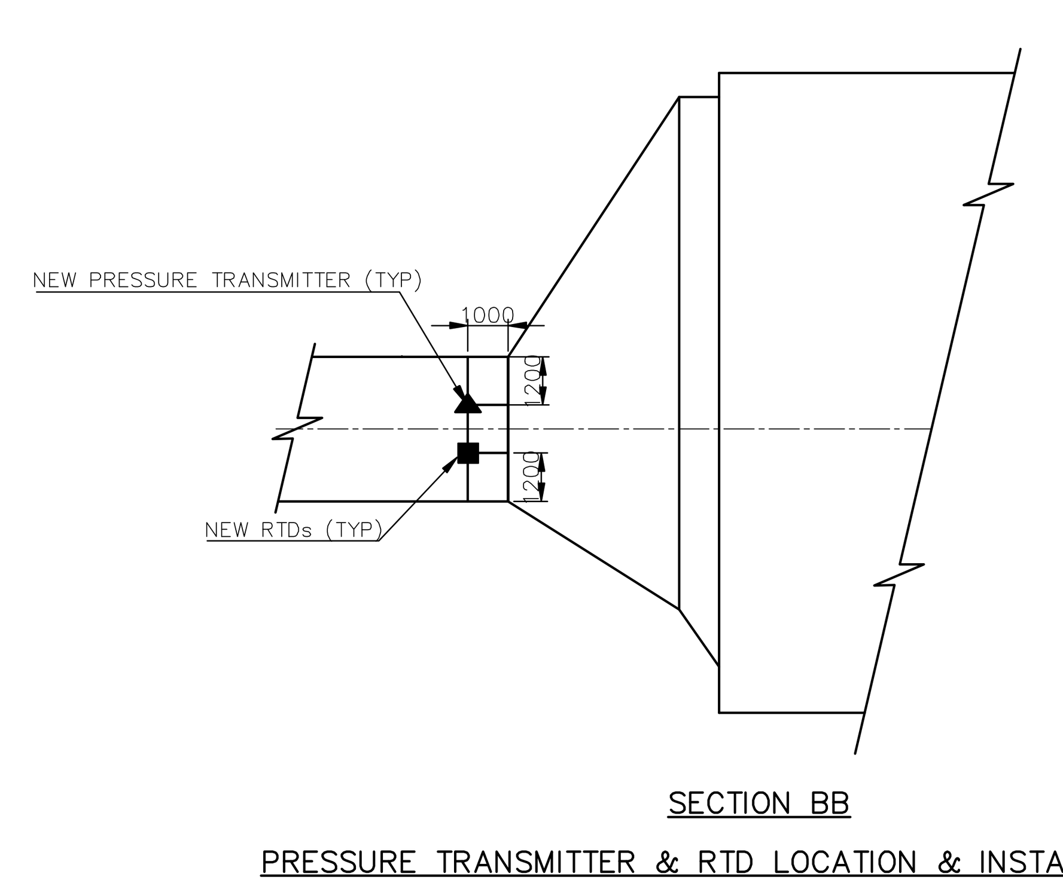
ALL DIMENSIONS ARE IN MILLIMETRES



SECTION AA

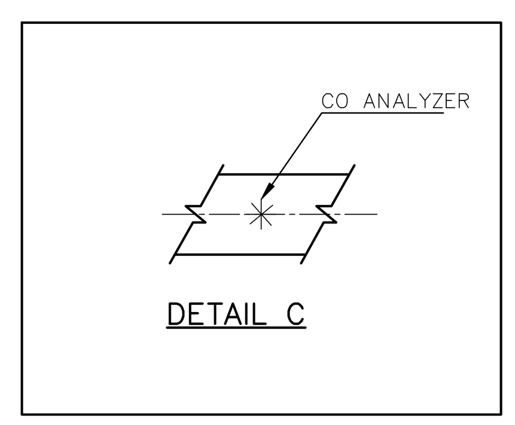


PLAN



SECTION BB

PRESSURE TRANSMITTER & RTD LOCATION & INSTALLATION DETAIL (NTS)



DETAIL C

NOTES

01. ALL DIMENSIONS ARE IN MM.
02. [ ] SCOPE OF SUPPLY FROM BHEL, RANIPET.
03. → INDICATES THE DIRECTION OF GAS FLOW.
04. DUCT DIMENSIONS INDICATED IS INSIDE.
05. ALL EXPANSION JOINTS ARE OF METTALIC TYPE.
06. THIS DRAWING IS TO BE READ ALONG WITH DRAWING NO:1-00-111-28826&1-00-111-28849 GA OF MODIFIED ESP.
07. THIS DRAWING IS COMMON FOR BOTH W.O NOS:R4E4 & R4E5.
08. THE EXISTING ESP ELECTRICAL PANELS AT EXISTING ESP CONTROL ROOM GROUND FLOOR AND FIRST FLOOR WILL BE DISMANTLED.
09. NEW ESP ELECTRICAL PANELS AND COMPONENTS WILL BE LOCATED AT EXISTING ESP CONTROL ROOM.
10. THE EXISTING ESP CONTROL ROOM WILL BE SUITABLY MODIFIED TO ERECT/ACCOMODATE NEW ELECTRICAL COMPONENTS/PANELS. THE MODIFIED ESP CONTROL ROOM IS COMMON FOR TWO ESPS.
11. THE NEW ESP COLUMNS WILL BE IN LEVEL WITH EXISTING COLUMNS OF ESP ALL ELEVATION LEVELS ARE SHOWN ACCORDINGLY.
12. EXISTING ELECTRICAL CABLES WILL BE DISMANTLED EXISTING CABLE GALLERY, CABLE SUPPORTS AND CABLE TRAYS WILL BE RETAINED AND REUSED AS PER SITE REQUIREMENT.
13. EXISTING PG TEST ADAPTORS AND THEIR APPROACH LIKE LADDERS, GALLERY AND PLATFORMS AT ESP INLET AND OUTLET DUCTS WILL BE RETAINED AND REUSED.
14. THE EXISTING UNDER GROUND CABLE TRENCH FROM ESP CONTROL ROOM TO LAST COLUMN OF ESP WILL BE DISCARDED.
15. (01) ONE NO OF NEW OPACITY MONITOR WILL BE ERECTED AT CHIMNEY. THE EXISTING APPROACH TO OPACITY MONITOR LIKE LADDERS, PLATFORMS AND GALLERY WILL BE RETAINED AND REUSED.
16. THE ESP OUTLET DUCT WILL BE MODIFIED AS SHOWN FOR SINTER MACHINE-I. THE ESP OUTLET DUCT WILL BE CUT AND REMOVED FOR SINTER MACHINE-II.
17. THE ESP OUTLET FUNNEL WILL BE SUITABLY CONNECTED WITH OUTLET DUCT AS SHOWN.
18. THE EXISTING PENT HOUSE OVER EXISTING ESP WILL BE DISMANTLED.

LEGEND

- ■ EXISTING SUPPORTING COLUMNS FOR DUCTS
- MEJ – METTALIC EXPANSION JOINT
- DC – DUCT SUPPORTING COLUMN
- I EXISTING SUPPORTING COLUMNS FOR ESP
- I NEW SUPPORTING COLUMNS FOR ESP
- PROPOSED LOCATIONS OF NEW INSTRUMENTS
- ■ NEW RTDs AT ESP INLET AND OUTLET
- ▲ NEW PRESSURE TRANSMITTERS AT ESP INLET AND OUTLET.
- (01) ✳ NEW CO ANALYZER AT ESP OUTLET DUCT OF EACH ESP.

SUBMITTED FOR	APPROVAL		INFORMATION		REFERENCE		RECORD		CONSTRUCTION	

ALL DIMENSIONS ARE IN MM

CUSTOMER NOS: R4E4 & R4E5

EMPLOYER	SAIL-RSP — SAIL, ROURKELA STEEL PLANT, ROURKELA, ODISHA
CONSULTANT	SAIL — SAIL, CENTRE FOR ENGINEERING AND TECHNOLOGY
PROJECT	REPLACEMENT OF 2NOS PROCESS ESPs AT SP-I, SAIL, RSP.
CONTRACTOR	BHARAT HEAVY ELECTRICALS LIMITED — DEPT CODE M

ZONE	REV	DATE	ALTD:	CHD:	APPD:
	01	15.07.13	R.HEMAMALINI	G.SUNDAR	G.GUNASEKAR
D13,F13	NOTES REVISED BASED ON SAIL COMMENT.				

JOB NO. STATUS CONTRACT DISTRIBUTION

ACTIVITY	NAME&SIGN	DATE
DRAWN BY	R.HEMAMALINI -sd-	17.05.13
DESIGNED BY	G.SUNDAR -sd-	17.05.13
CHEKED BY	G.SUNDAR -sd-	17.05.13
APPROVED BY	G.GUNASEKAR	17.05.13

SAIL RSP DRG NO:PD/R/

DEPT: SINTER PLANT-1

TITLE LAYOUT OF ID SYSTEM WITH MODIFIED ESP

SCALE : N.T.S

PROJECT DRG NO:RSP/SP1-ESP/M/BE/003

BHEL DRAWING NO. 1-00-111-28827

SHEET OF

REV 01

Size A1

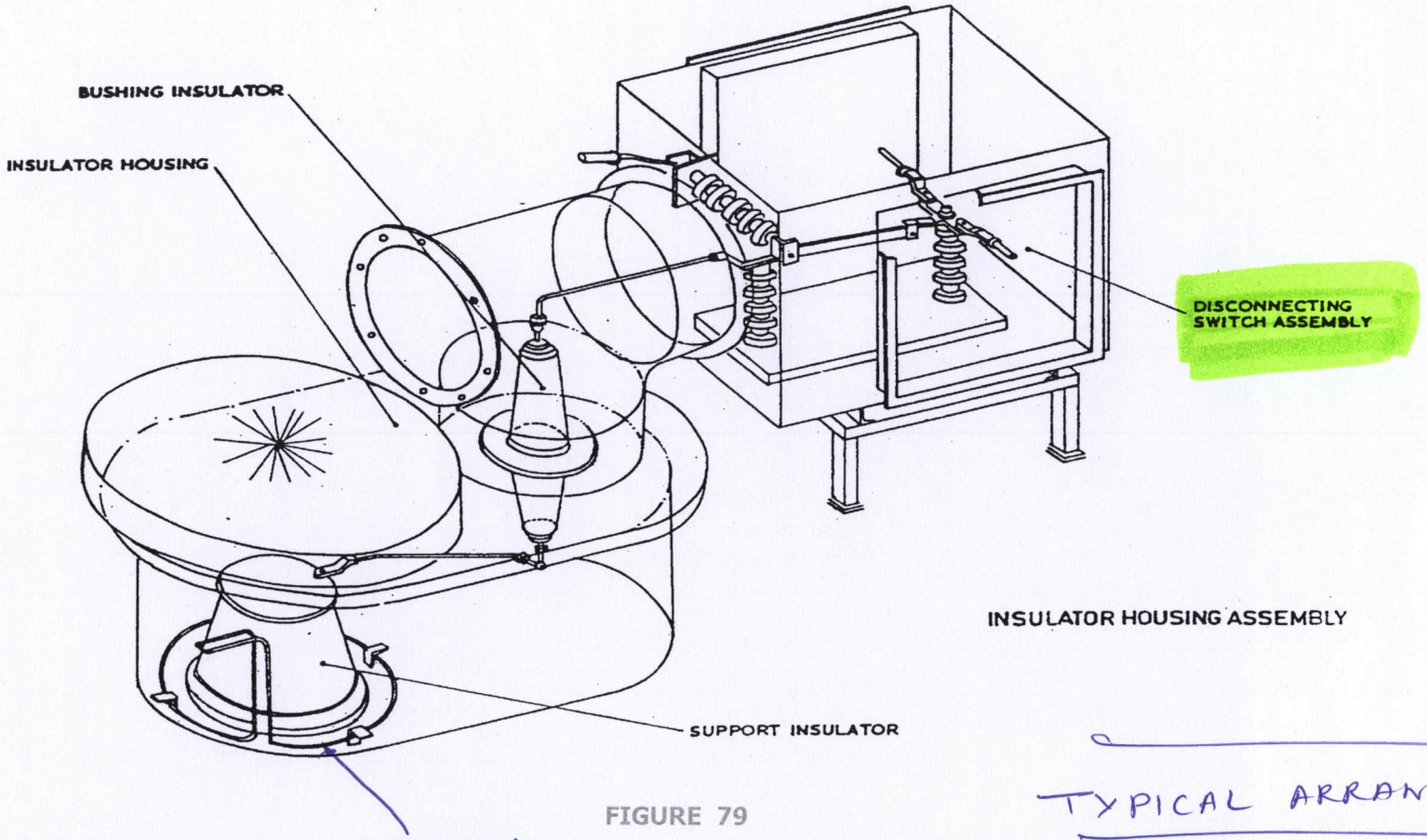
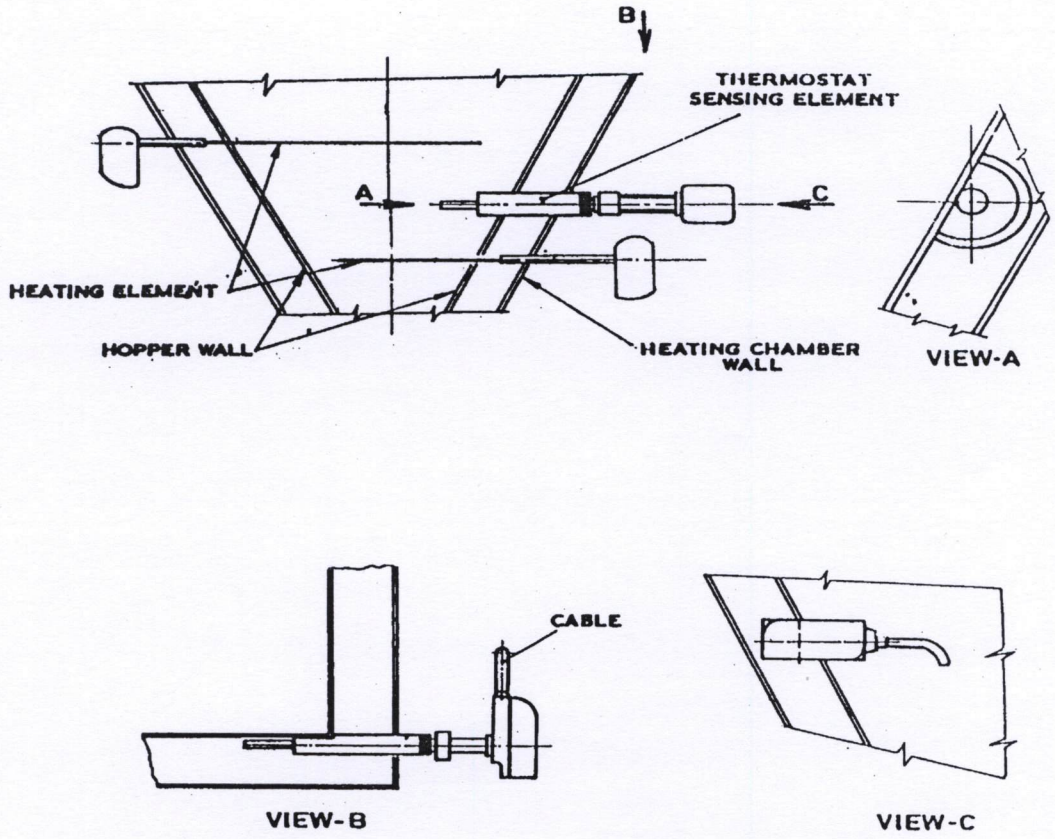


FIGURE 79

TYPICAL ARRANGEMENT.

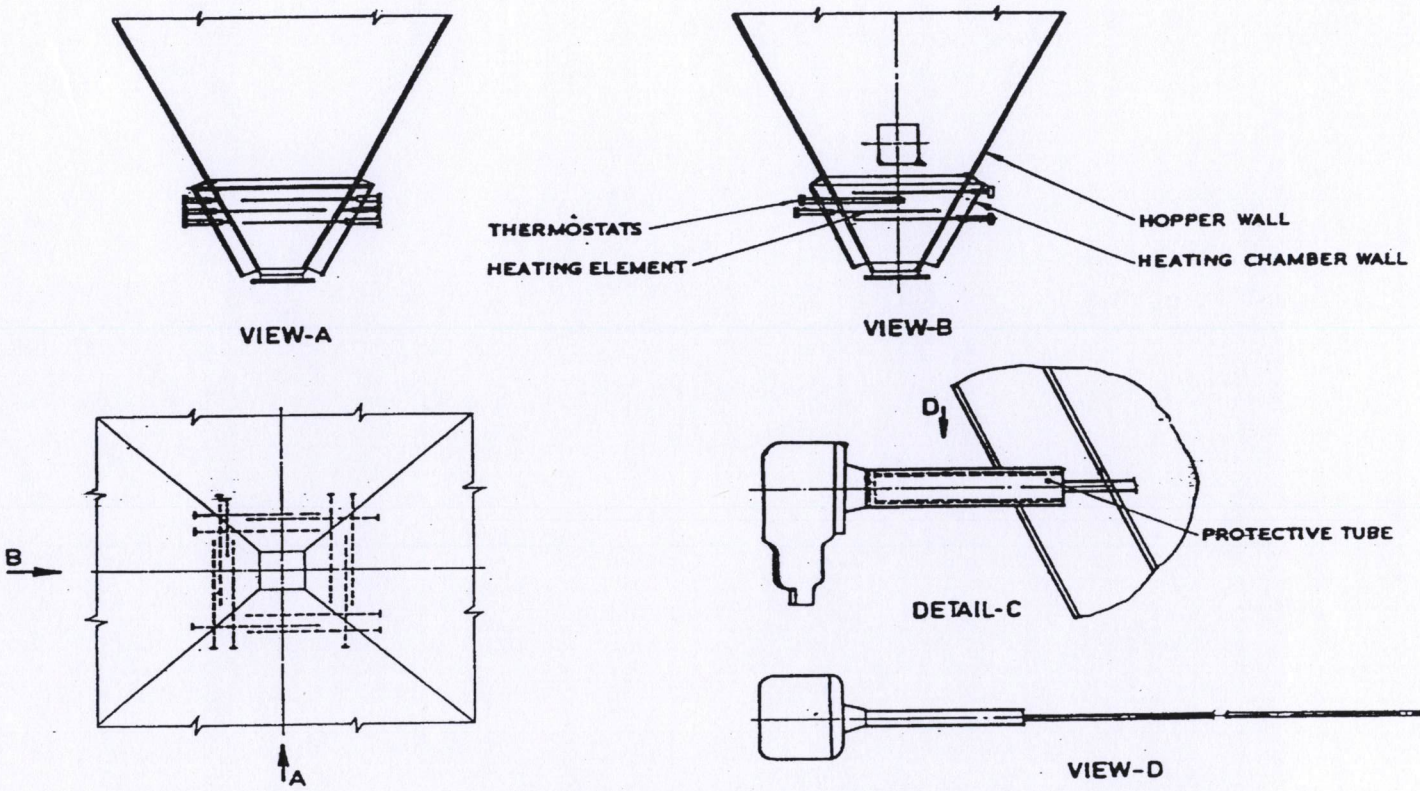
ONLY FOR REFERENCE PURPOSES.



TYPICAL FIXING DETAIL OF THERMOSTAT FOR HOPPERS.

ONLY FOR REFERENCE PURPOSES.

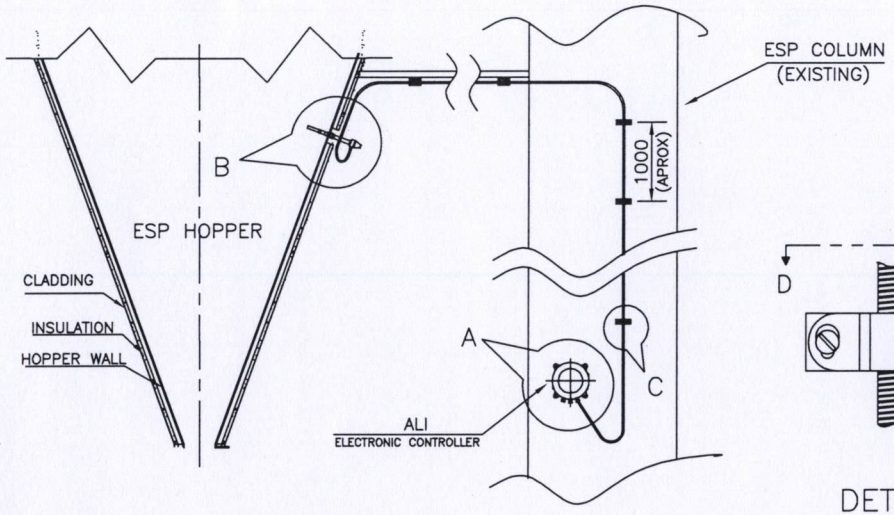
FIGURE 81

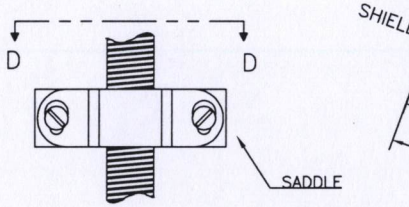


TYPICAL FIXING DETAIL OF HEATING ELEMENTS FOR HOPPER

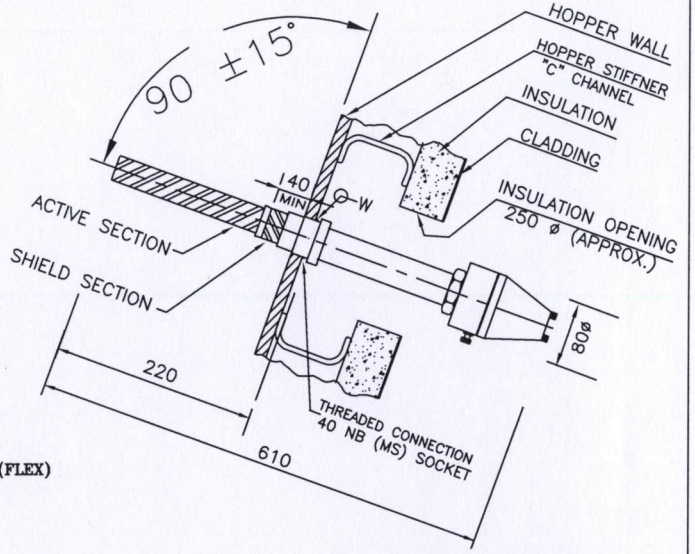
FIGURE 82

ONLY FOR REFERENCE PURPOSES.



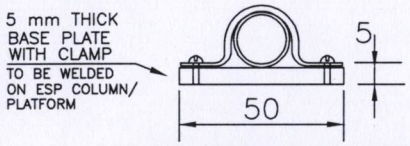


DETAIL – "C"



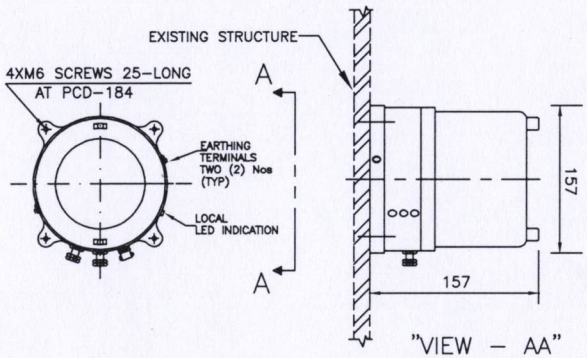
SENSING PROBE

DETAIL "B"



CLAMP WITH BASE PLATE & SCREW (SADDLE)

"VIEW – DD"



"VIEW – AA"

ELECTRONIC CONTROLLER

DETAIL "A"

FOR REFERENCE PURPOSE ONLY

NOTES:–

1. ALL DIMENSIONS ARE IN MM ± 5%
2. DEGREE OF PROTECTION FOR PROBE HEAD & ELECTRONIC CONTROLLER ENCLOSURE AS PER IP–66.
3. SENSING PROBE TO BE MOUNTED PERPENDICULAR (90 ± 15°) TO THE HOPPER WALL AND AT EQUAL DISTANCE FROM BOTH THE SIDE WALLS. ATLEAST 250 mm AWAY FROM OTHER INTERNAL GROUNDED PARTS
4. SHIELD SECTION OF THE SENSING PROBE MUST PROJECT INSIDE THE HOPPER MORE THAN 40 MM
5. CABLE DISTANCE FROM SENSING PROBE TO ELECTRONIC CONTROLLER 20 Mtr. MAX.
6. UNSCREW THE "SOCKET" FROM THE PROBE. CUT A HOLE ON THE HOPPER PLATE AT THE DESIRED LOCATION OF THE SENSING PROBE. CUT–OUT SIZE–64 mm ø INSERT THE SOCKET MORE THAN THE THICKNESS OF THE HOPPER PLATE, ENSURE THE AXIS 90 ±15° TO THE HOPPER PLATE AND WELD ALL AROUND. INSERT PROBE AND THREAD.

IF ANY DOUBT ASK EIP ENVIRO

EIP ENVIRO LEVEL CONTROLS PVT LTD

NOIDA – INDIA

BHEL P.O.NO. : 4222884 DTD 08.01.2013

PROJECT : NSPCL ROURKELA

CUSTOMER B H E L – RANIPET

TITLE–

TYPICAL INSTALLATION

RF LEVEL SWITCH

WITH SENSING PROBE (RIGID)

MODEL: 550 (HIGH LEVEL)

APPROVALS:	DRN	CHD	APD	DRG. NO.	REV.
	SCALE – NTS		DATE	BH–RSP–02 SH 1 OF 1	00

SAFETY CODE

FOR

CONTRACTORS

SAFETY ENGINEERING DEPARTMENT

ROURKELA STEEL PLANT

SAFETY CODE FOR CONTRACTORS
(REVISED FROM JANUARY,2005)

INDEX

GENERAL SAFETY INSTRUCTIONS

Safety is the responsibility of every employee individually & collectively as well as the Contractor who shall ensure the following safety precautions.

Safety Precautions.

1.1 The Contractor shall take all safety precautions and provide adequate supervision of Competent persons in order to do the job safely and without damage to equipments or any other property or person. The contractor shall ensure compliance of guidelines as contained in ED(W) procedure order on safety.

1.2 a} The Contractor is not permitted to start the job without reporting to Safety Engg. Deptt. and obtaining written Safety Induction.

b} If the Competent Authority or Head of the Safety Engg. Deptt. is of the opinion that the Contractor is not confirming to Safety regulations, he may direct to stop the whole work & require the Contractor to remedy the defects or supply the omissions as the case may be. The Contractor shall not proceed with work until he has complied with such directions to the satisfaction of the Authority or Head of Safety Engg. Deptt and the same can resume only with the clearance of head of safety.

c} The Contractor shall be fully responsible for accidents caused due to his workmen or operator's negligence or carelessness in regard to observance of Safety requirements and shall be liable to pay compensation for injuries.

d} In case of negligence or carelessness of Contractor/Contract Labour in observing Safety Instruction or using Safety Appliances, which results in accident leading to death or serious injury, proceeding shall start banning of business dealings with RSP.

1.3 In case of extension of any particular job contract, the Contractor shall revalidate the relevant Safety Induction documents before its expiry..

1.4(A) The Contractor shall ensure filling up of "Permit to Work" Form, Protocols, Site Clearance (Gas, Electrical, Excavation, Moving Equipment etc.) and other necessary shutdowns, before sending the Labours to site.

(B) No job shall be carried out without obtaining work clearance on daily basis in writing (Annexure-I).

1.5 The Contractor shall abide by the provisions of Factories Act, Orissa Factories Rules, Workmen's Compensation Act, Payment of Wages Act, ESI Act, Contract Labour (Regulation) Act etc. and keep the Principal Employer indemnified of provisions of the above Acts & Rules. The Contractor shall also maintain all Statutory records as per rules.

1.6 Whenever work at height (more than 2 Mtrs.) is involved, Contractor must obtain "Height Pass" from Safety Engg. Deptt. for those persons required to do work at height, after submitting the medical fitness Certificates.

CATEGORISATION OF HEIGHT WORK:(Five Categories of Height jobs).

1] Painting job.	80% of total manpower
2] Replacement of Roof Sheets/shuttering/rod placing.	-do-
3] Replacement of Gutter & Down Comer Pipes.	-do-
4] Pipe Lines & Gas Pipe Lines.	-do-

5] Miscellaneous jobs carried out at more than 2 mtrs. height. 60% -do-

For jobs not mentioned above maximum 50% height

1.7 To ensure effective enforcement of the rules & regulations relating to Safety Procedure, the arrangements made by the Contractor shall be open to inspection by Safety Officer, the Labour Officer, Engineer-in-Charge of the department or their representatives.

1.8 Contractor should ensure that Contract Labourers do not come to work while still under the influence of intoxicants. Any labour found on duty under the influence of liquor or other intoxicating drugs, he is liable to severe disciplinary action.

1.9 All Contract Labourers are warned that dangerous gas may be found almost anywhere in the Steel Plant. In case of symptoms like headache, dizziness or suffocation he should move into fresh air & report to Supervisor.

1.10 Contractor should ensure that they or their labourers do not meddle with any equipment and see that they keep away from such equipments. They should restrict themselves in the area of work only.

1.11[a]The Contractor shall supply Safety Appliances like shoes, ladies chappals, helmets, gloves, safety belts etc. to his labourers depending upon working conditions as advised by Safety Engineering Deptt. and shall ensure proper use of the appliances by the labourers.

[b] It is the responsibility of the Contractor to borrow specific safety appliances like Acid Proof Clothing, Rubber Gloves, Face Shields, Goggles for Acid Lines, Gas Mask & Respirators, Safety Belts, Fall Arrestors, Fire Retardant Jackets etc. from the concerned department awarding contract and return the same in good condition, failing which cost recovery will be made from his bill.

1.12 Contractor shall ensure that no one should take rest/shelter near hazardous substances, or any stacked materials or under excavated pit.

SAFETY TRAINING

1.13 Contractor shall ensure that experienced/skilled labourers who have been imparted Job Specific Safety Training are engaged at site (Both at site by Departmental Supervisor and Specific Trade Safety Training at Safety Engg. Deptt.).

1.14 For any work involving repair & maintenance of Gas Lines and Gas Handling Equipments, the Contractor shall follow the Gas Safety procedures issued by the management. The Contractor shall exercise supervision of such jobs by Competent Person within the meaning of Factories Act Rules. All persons engaged on such jobs must have proper training instructions before hand as required under Factories Act & Rules.

1.15 If an employee, in the course of his work encounters conditions of unusual hazard with which he is not familiar, he should contact the supervisor for advice before proceeding further. He should also inform the contractor as well as Engineer-in-Charge.

1.16 Smoking or keeping of naked lights or holding mobile phones is strictly prohibited near gas lines, valves & any other equipment connected with gas distribution system and where inflammable liquids are handled/stored.

1.17 Adequate Fire Extinguishers, shall be kept by the contractor at the site of work where there is risk of fire hazard, especially near the site store, oil/grease areas, Conveyer Belts etc.

1.18 Lifting tools & tackles, Winches, Pressure Vessels, Mobile Cranes etc. used by the contractor must be thoroughly examined by competent persons beforehand & maintain records as per statute.

1.19 The Contractor shall in connection with work provide adequate guards, illumination, fencing and supervision wherever necessary at the construction site & work area for the safety & convenience of Public or others.

1.20 Work surroundings should be kept clean, free from oil & grease and other obstructions or fallen objects like nuts, bolts etc. After job is completed, all leftover junk & scraps should be cleared from the area immediately.

1.21 Drums or other makeshift arrangements must not be used in place of ladders or as workbenches or supports for any kind.

1.22 Horseplay of any kind is strictly prohibited inside the plant. No one should distract attention of others on work.

1.23 Wearing of jewellery like finger rings, chains or loose clothing such as Dhoties, Lungies, dangling sleeves, gloves, ties, loose shirts/sweaters etc. is prohibited when working near or around moving machinery.

1.24 REPORTING OF ACCIDENTS

a] In case of injury to contract labour, the contractor shall take the injured person to nearest plant medical unit or Health Centre in case of injury out side the plant. For further treatment, he can take the injured person to ESI hospital or any other hospital of his choice. The Contractor should inform the same accident immediately to the department Supervisor and Safety Officer for investigation.

b] The Contractor will keep Safety Engg. Deptt. informed about the nature of the injury & the period for which the injured person is off duty on account of injury.

c] In case of FATAL Accident, the Contractor should immediately inform the HOD, Site Supervisor, Safety Officer & Police. Also report shall be made in the form as per Annexure-IV.

d] In case of serious accidents/dangerous occurrences, the Contractor should co-operate with the Statutory Authorities for investigation.

1.25 Notwithstanding the above, the contractor is not exempted from the operation of any other act or rule in force in Republic of India for safety of man and materials.

1.26 In case of violation of safety provisions/ requirements or violation of any provisions made in this code the contractor, besides stoppage of work, shall be liable for actions as stipulated in the following Annexure depending upon the area and nature of violations.

i) ED(W) procedure order SL NO IX (K)

ii) GM(PROJECTS) procedure order REF NO GM(P)/6.6 /173 DT:4TH APRIL1994

iii) GM(MARKETING) procedure order REF NO GM(MKTG)/ A&D / IA/03-04DT 04/06/2003

The details are given in the Annexures.

2. <u>SAFETY INSTRUCTIONS FOR CIVIL JOBS</u>

2.0 EXCAVATION:

2.0.1 Side walls of all excavations must be slopped to a safe angle, not steeper than the angle of repose of the particular soil. Where there is a danger of fall or dislodgment of earth or any material, shall be securely supported by timber or any other type of shoring and it should be approved by Engineer-in-Charge.

2.0.2 No excavation of earth work below the foundation level of an adjoining building shall be taken up unless adequate steps are taken to prevent damage to the existing structure. This should be done under specific advice from Engineer-in-Charge and under strict supervision.

2.0.3 Every accessible part of an excavation, pit or opening in the ground into which there is a danger of persons falling shall be suitably fenced with a barrier up to a height of three feet as close to the edge of the excavation as practicable.

2.0.4 No material or load shall be placed or stacked near the edge of the excavation or opening in the ground. The excavated material shall not be placed within 5 feet of the trench or half of the depth of the trench whichever is more.

2.0.5 Cutting shall be done from top to bottom. No under-cutting of side walls of excavation shall be allowed.

2.0.6 All narrow trenches four feet or more deep, shall at all times be supplied with at least one ladder for each 100 feet in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least three feet above the surface of the ground.

2.0.7 The sides of the trenches which are five feet or more in depth shall be stepped back to give suitable slope, or securely held by planking, strutting and bracing so as to avoid the danger of side collapse.

2.0.8 Before starting excavations of any description in the Plant area, permission in writing must be obtained from the Electrical, Civil Engineering, Water Supply & Town Engineering Department so as to avoid any possible damage to underground electric cables or pipe lines. In case of manual excavation where there are burried electrical cables passing through the area those should be suitably marked and workers should be warned about driving pick axes crow bars etc. through the envelops of power line.

2.0.9 A separate clearance in writing must be obtained from Safety Engineering Department before starting any excavation job.

2.0.10 Any excavation or ditch more than five feet deep must be properly shored before any worker is permitted to work in it. All timbering and planks used therein shall be inspected by a competent person of the Civil Engineering

2.0.11 Excavation inside the plant or the department must be properly fenced and marked with suitable warning sign boards or lights at all times. This is also applied to any trench or drain which has a cover removed temporarily.

2.0.12 No loose material or load shall be placed or stacked or removed near the edge of any excavation so as to endanger the lives of persons working below.

2.0.13 When it is necessary to block off any road in any areas inside the plant, proper road-barrier and red light at night must always be used. The Supervisor in-charge of the excavation work is responsible for carrying out this regulation.

2.0.14 If work is to be continued at night adequate lighting should be provided around the barricade.

2.0.15 Any surcharge like sloping, ground, track line, building or machine structural, if found within 45 ft. from the bottom edge of the pit to be excavated, care should be taken to retain the surcharge load by adequate shoring or shuttering.

2.0.16 While excavating on the slope whose height is over 10 Ft. men should use safety belts.

2.0.17 In case soil is soft, loose, the bonding is loose, the water seepage is observed, sub-soil hydrostatic pressure is high or in case of super imposed load of structure, shock load, shoring of adequate strength has to be provided during excavation.

2.0.18 If the sides of the trenches are more than 4 feet deep shoring with timber should be done unless they are sloped to the angle of repose or the trench is in solid rock.

2.0.19 Sub-soil water accumulation shall be pumped out from the excavated area.

2.0.20 Under-cutting of the soil is prohibited. If necessary, then shoring with proper propping should be done.

2.0.21 If excavation is done below or close to railway track, cribbing of support to be done as specified/instructed by appropriate authority,.

2.1 BLASTING

2.1.1 Explosives shall not be used by the Contractor without the permission in writing from Executing Authority.

Where explosives are used , the same shall be stored in a special magazine to be provided by and at the cost of the contractor, who shall be liable for all damages loss or injury to any person or property shall be responsible for complying with all the statutory obligations in these respects.

2.1.2 Provisions in the Indian Explosives Act, 1844 (4 of 1844) and Explosives Rules 1940 and other Local and Central Government Laws, Regulation etc. as amended from time to time shall be strictly followed for all blasting operations.

2.1.3 Detonators and other explosives for blasting shall be taken to the blasting area in the original container or in any separate non-metal container. These should not be carried loose or mixed with other materials.

2.1.4 Detonators and explosives must be kept separately.

.2.1.5 No shot for blasting shall be fixed except by persons licensed to do so.

2.1.6 Contractors doing blasting works must possess Licence and an approved magazine to store explosives, otherwise they will be issued only one-day's requirement of explosives, which must be consumed on the same day and the balance returned.

2.1.7 The intensity of the charge to be used must be well calculated and safe enough to prevent any damage to neighbouring structures, equipments or housing colonies due to shocks and vibrations resulting from the explosion. If necessary, residents in the neighbourhood should be evacuated.

2.1.8 After a hole is drilled, it should be cooled down to normal temperature before packing the charge In it. If necessary, flood the holes with water.

2.1.9 Drilling of holes shall not be resumed after a blast has been fired unless a thorough examination has been made to ensure that no unexploded charge is left.

2.1.10 After filling the holes, the charge should be covered with blasting mats, conveyer belts and sand bags to prevent splinters from flying off in all directions. Where the intensity of the charge is high, heavy steel slabs should be used for covering.

2.1.11 When blasting in confined space (e.g. salamander in Blast Furnaces, Hot Metal Mixers etc.) the area around (e.g. furnace shell in BF) should be covered up properly with wooden sleepers to prevent, damage due to impact of any flying splinters.

2.1.12 Blasting area shall be cordoned off and red-flags during day time and red lamps during night time shall be displayed prominently to mark off the cordoned area.

2.1.13 Before firing a shot, sufficient warnings by means of a siren or other approved method shall be given to get people off the danger area. Also, after the siren, sufficient time (15 mtrs.) should be given for people to walk out from their respective work spots.

2.1.14 All persons must be removed to a safe distance of not less than 200 yards, from the blasting area as a rule. Entry to this area during blasting is to be prohibited strictly.

2.1.15 Blasting operations will be carried out only during fixed hours of the day, which shall be notified in writing and widely publicised. Caution boards indicating the timings also shall be displayed prominently in local language, Hindi and English.

2.1.16 Only well-experienced person must be engaged for blasting operations. The blaster must possess a valid Licence.

2.1.17 For executing jobs involving blasting, a separate clearance must be obtained from Safety Engineering Department.

2.1.18 Before each blasting, written clearance must be obtained from the concerned department. The department will give clearance only after ensuring that all necessary safety precautions for blasting have been taken.

2.3 DUMPING, PILING & STACKING:

2.3.1 Material shall not be dumped against walls or partitions to a height that may endanger the stability of the walls. A gap of minimum 18" should be left between the wall and the stack so as to check the construction & stability of stack.

2.3.2 While withdrawing piled materials like loose earth, crushed stone, sand etc. from the stock piles, no overhanging shall be allowed.

23.3 No material of any of the sites of work shall be so stacked or placed as to cause danger of inconvenience to any person or public or any other agency at work.

2.3.4 Dumping, piling or stacking of material below overhead electric lines should be avoided.

2.3.5 No person should stand inside closed wagons (e.g. box wagon, K.C. wagon) being loaded/unloaded by crane. However, before going inside for releasing/fixing the sling, crane operator must be first informed and the crane boom and load brought to a dead stop.

2.3.6 No material should be piled, dumped or stacked at random, but only in areas specified for the same.

2.3.7 Roads, passage ways should not be blocked by dumping, piling or stacking of materials.

2.3.8 All materials should be stacked properly. The stack height should not exceed 4 ft. above ground level.

2.3.9 Safe approach to be provided and maintained from individual stack to place of work.

2.3.10 No material should be stacked within 5 ft. of the railway track.

2.4 DEMOLITION/DISMANTLING:

2.4.1 Before demolishing a building or structure either protect or disconnect the utility services (Gas, Steam, Electricity, water etc.).

2.4.2 All fragile and hanging materials from inside the building should be removed.

2.4.3 The area around should be cordoned off and barricaded with caution boards and red flags. The distance of cordoning will depend on the height at which demolition is taking place.

2.4.4 All the roads and open areas adjacent to the work site shall either be barricaded or suitably protected and caution/danger signs in local language, Hindi and English shall be displayed at prominent places.

2.4.5 No electric cable or apparatus which is liable to be a source of danger shall remain electrically charged.

2.4.6 All practicable steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof, or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

2.4.7 Debris should be removed at the earliest.

2.4.8 Chutes or container cages should be used to lower down debris.

2.5 SCAFFOLDINGS, GANGWAYS AND LADDERS:

2.5.1 Scaffolding should be made of steel pipes.

2.5.2 There should not be more than one joint per bally.

2.5.3 Diagonal bracing should be provided at the level of each joint.

2.5.4 Protruding nails, wires and other accessories should be removed or made safe.

2.5.5 Sufficient diagonal bracing should be provided to prevent buck lying of the scaffoldings due to wind pressure or side thrust.

2.5.6 Scaffolding should be erected over firm ground to prevent settlement or slippage of the same.

2.5.7 Precautions should be taken to prevent erosion of the soil by running water.

2.5.8 Rain water should not be allowed to accumulate and from pools, puddles or standing water near scaffoldings.

2.5.9 Sufficient number of working platform of required widths depending on the nature of work and recommended in the Indian Standard Code of Practice for scaffolds (IS:1014-1967 Part-I & II) should be provided in the scaffolds.

2.5.10 No part of working platform should be supported by loose brick, drain-pipe, chimney pots or other loose materials.

2.5.11 Scaffolds boards should be of adequate thickness depending on the span but not less than 1" thickness and 6" width.

2.5.12 Scaffold with metal members should not be erected in dangerous proximity of any over head electrical transmission lines etc.

2.5.13 Mobile scaffolds should be adequately braced to prevent distortion while in use.

2.5.14 Mobile scaffolds should rest on firm ground and height should not exceed 4 (four) times the least base dimension.

2.5.15 When mobile scaffolds is in use the castors or wheels should be suitably blocked.

2.5.16 For all work that cannot be done from the ground level or from part of any permanent structure or from other available means of support, soundly constructed scaffoldings of adequate strength shall be used as a safe means of access to places of work.

2.5.17 All scaffoldings shall be securely supported or suspended and wherever necessary be properly braced to ensure stability.

2.5.18 Defective or "Makeshift" scaffoldings must never be provided. All scaffoldings must be inspected by Executing Authority (a competent person not below the level of an Assistant Manager/Junior Manager) before commencement of work.

2.5.19 Before using any type of swinging scaffold, stages or boatswain's chair, it must be tested while close to the ground.

2.5.20 Chains ropes or other lifting materials used for the suspension of scaffoldings must be of adequate strength and of suitable quality, and shall be of tested quality.

2.5.21 All such chains and ropes used for the suspension of scaffoldings shall be properly fastened to safe anchorage points, and not to hand-railings or bracing.

2.5.22 The platform of suspended scaffolding shall be sufficiently wide. Suspended scaffolding shall have handrails on 3 sides of about 42 inches height with one middle rib.

2.5.23 All working platforms and stages from which workers are liable to fall shall be of adequate width depending on the type of work done and closely boarded and planked.

2.5.24 Vertical poles of scaffoldings should not be more than 6 feet apart.

2.5.25 All sides of the platform from which a person is liable to fall shall be provided with guard rails to a height of at least 42 inches with toe boards at least 4 inches high so placed as to prevent the fall of materials and tools from the platform.

2.5.26 If the height of the stairway, platforms, gangway and runways is more than 12 feet above ground level or floor level and from any part of which there is a danger of persons falling, these shall be planked closely and be at least 24 inches wide and if the gangway is used for carrying of materials it shall be at least 30 inches wide.

2.5.27 All gangway, runways, and stairs shall be provided with suitable guard rails to a height of 42 inches and toe boards at least 4 inches high.

2.5.28 All platforms, gang ways, runways and stairs shall be kept free from unnecessary obstructions, materials or junk.

2.5.29 Working platforms, gang ways, stairways etc. shall be so constructed that they shall not sag unduly or unequally.

2.5.30 Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 42 inches.

2.5.31 Every ladder shall be securely fixed at top and bottom. A ladder more than 15 feet long shall have a prop.

2.5.32 All ladders used shall be of good construction, sound materials and adequate strength. Ladders with defective or missing rungs shall not be brought into use. Ladders should never be stored near steam pipes or other places where they may be subjected to heat or dampness.

2.5.33 All ladders or rungs used for vertical height of more than 30 feet shall have an intermediate landing. All such intermediate landings shall be provided with guard rails to a height of at least 42 inches.

2.5.34 Every ladder shall be securely placed so that it cannot move either at the top or at the bottom and it shall be projected to a height of at least three feet above the place of landing.

2.5.35 No portable single ladder shall be over 20 feet in length.

2.5.36 Spacing between the side rails of the ladder shall not be less than 18 inches and uniform step spacing shall not exceed 12 inches.

2.5.37 Metal ladders must not be used for electrical work or near electrical circuit or equipment.

25.38 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use.

2.5.39 Scaffolds with hand railing and ladders must be in good condition while working on gas lines or equipments at heights. Safety belts must be worn on such jobs.

2.5.40 Whenever it is necessary to work at elevated places, not adequately protected by railing, safety belts must be worn with life lines securely tied to some firm structure or other support which is independent of the equipment on which the persons are working.

2.5.41 Safety equipments, particularly safety belts and life lines have to be checked by the contractors' supervisor as well as the departmental supervising agency as a matter of routine and no misuse should be allowed.

2.5.42 Nobody should be allowed to work at elevated places without wearing safety belts.

2.5.43 Dropping or throwing materials from crane runways, roof structures or other elevated position is prohibited.

2.5.44 Cordon the area below where the work is going overhead. If it is not possible to cordon the area, place caution sign "CAUTION MEN WORKING ABOVE" or depute responsible person to warn passers-by.

2.5.45 All scaffolds must be checked from time to time and no scaffolds to be over loaded. Scaffolds should be designed to take at least 50% overload for safety.

2.6 PAINTING:

2.6.1 Any machinery/equipment should be cleaned only after getting the necessary clearance from the concerned department in writing.

2.6.2 Colour-code of machinery/pipe-lines etc. should never be changed without proper permission of the concerned department.

2.6.3 A painter must always be provided with a helper/assistant while painting at heights.

2.6.4 A Supervisor must always be present at site whenever painting at heights is being done.

2.6.5 While painting at heights in addition to having safety belt painter should engage one hand in holding the paint brush and the other hand to catch support for himself. Paint-box should never be carried in the hand while painting at heights.

2.6.6 While painting overheads, plain-goggles should be worn to prevent paint from falling in the eyes.

2.6.7 Before commencing painting of structural etc. near crane walkways, the Crane Operators in that area should be informed if the painting job to be undertaken and red-flags should be displayed on both ends of the rail-track.

2.6.8 Safety belts must always be worn when painting at heights. It is desirable to have safety nets tied below the area of work as additional protection in case of a fall.

2.6.9 While painting at heights, if any E.O.T. crane comes just under the spot, stop painting and just sit or stand there till the crane moves away.

2.6.10 Great care should be taken to see that the crane bus bars are not contacted either by the scaffoldings, slings or other handling materials. Any job in the bus-bars area is to be done only after getting power shut-down.

2.6.11 The contractor shall not employ men below the age of 18 and women on the work of painting with products containing lead in any form when-ever men are employed on the work of lead painting, the following precautions shall be taken.

i] No paint containing lead or lead products shall be used except in the form of paste or ready-made paint.

ii] Suitable face mask should be supplied for use by them when paint is applied in the form of spray on a surface having lead paint dry rubbed and scrapped.

iii] Overall shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash after cessation of work.

2.7 CLEANING:

2.7.1 Any machinery/equipment should be cleaned only after getting the necessary clearance from the concerned department in writing.

2.7.2 While cleaning roofs, bags filled with the dust (lime-dust, iron-dust, sinter-dust etc.) should not be thrown down. These should be lowered down by help of ropes. Whenever down comers are provided, these should be used to bring down the refuse.

2.7.3 Persons engaged in cleaning of scrap metal sheets, turnings, mill-scales must use shoes, helmets and LCC Gloves.

2.7.4 While cleaning in fire hazard areas like oil cellars, by-products installations etc. smoking is strictly prohibited.

2.7.5 Before going down inside pits for cleaning/removing scraps etc., department must be informed and prior permission be taken at the beginning of each shift.

2.7.6 Electrical junction-boxes, switch-gears, fuse-boxes etc. must never be tempered with or cleaned without getting written clearance from the electrical section.

2.7.7 While cleaning rail tracks, red-flags should be displayed at both ends of the track to warn the loco crew of the work in progress.

2.7.8 All workers engaged in cleaning jobs must be specially warned to be alert to the movement of over-head cranes, transfer-cars, locos and other mobile equipments which may be operating in their respective areas.

2.7.9 Before cleaning crane-walkways, written clearance should be taken from the concerned department.

2.7.10 Experienced persons should be engaged, specially for cleaning of the crane-walkways.

2.8 ROOFING:

2.8.1 All workers engaged in roofing jobs must wear safety belts.

2.8.2 One Supervisor/responsible person must always be present at site whenever any roofing job is in progress.

2.8.3 Great care is to be taken before climbing top of any fabricated roof for replacement of the worn-out roof-sheets (corrugated asbestos cement or G.I. Sheets etc.). It should be ensured that the roof structure is strong enough to sustain the load of the persons engaged.

2.8.4 No person should stand directly on roofs of corrugated asbestos sheets. Two nos. cat-ladders (provided with hooks at top-end for getting support at the ridge end of the roof) should be placed over the roof first and the persons engaged in the cleaning/repairing/replacement jobs should take position on one of these ladders. The other cat-ladder can then be used for shifting position along the length of the roof as per requirement.

2.8.5 Dismantled roof sheets should not be thrown down on the ground and left loose on the roof. Ropes should be used for lifting or lowering of the sheets.

2.8.6 On roofs where railings are not provided at the ends, great care is to be taken while doing clearing/repairing/replacement jobs safety belts must be used and holding nets should always be provided.

2.9 PROCEDURE FOR CHANGING SHEETS IN ROOF & OTHER WORKS ON ROOF:

2.9.1 Safe means of access should be provided for going to the roof. For this purpose, ladders which must project about one meter above the roof should be used.

2.9.2 Only Person having `Work at Height' pass should be allowed to work at height i.e from ground level more than two meters height and on rooftop.

2.9.3 While standing on the gutter, the safety belt should be worn and the lifeline should be tied to the purlin of the adjacent bay.

2.9.4 One 12 feet square strong steel pipe frame, should be taken to the top and it should be anchored to the purlins and other fixed structures to which safety belt/rope should be tied. This should be moved from place to place according to the progress of work.

2.9.5 After completing two sheets each in longitudinal way, same procedure should be repeated for other sheets. No sheets should be kept loose on the roof on any account.

2.9.6 While shifting the bamboo, care should be taken so that nobody is required to step over asbestos sheet. The pipe frames should then be anchored again firmly to some fixed structure. The safety belts of the employees can then be tied to the frame.

2.9.7 For taking out bolts from old sheets, one ladder about 600 mm. wide and 5 mtrs. long can be placed on the sheets. The ladder should be tied/hooked to some fixed structure and the person using the ladder must tie safety belt with the ladder.

2.9.8 No loose material should be kept at edge of an opening. All nuts and bolts, J hooks etc. should be kept in a box. No piling of the asbestos sheets are allowed.

2.9.9 The area down below, should be condoned off where work is going on at the top.

2.9.10 Drilling at the roof top with electrical drilling machine should be avoided.

2.9.11 If any single phase electrical line is required at the roof top, then the following precautions should be taken :

a] Very good quality 3 core TRS flexible cable should be used.

b] The connection should be given only by a competent electrical person with proper earthing.

c] All the plugs, sockets etc. should be of good quality and earthing should remain continuous.

d] The switch board should confirm to the provision of Indian Electricity Rules.

e] Care should be taken to see that the cables are not cut by the sharp edges of the sheets.

f] It should be laid in such a way that nobody stumbles or gets entangled with the wire.

2.9.12 Sign boards (in 3 languages) warning about the fragile roof and not to walk on the roof without proper safety precautions should be placed at conspicuous places.

2.9.13 The supervisor must check the roof, where sheets are to be changed first.

2.9.14 If any damaged or cracked sheet is found, the same should be reported to the officer-in-charge and the sheet should be changed under his supervision.

2.9.15 Movement of persons as far as possible, should be on the stitched portion of the sheets thereby the maximum load will be on the structural members and not on the sheets directly.

2.9.16 No material should be thrown from top.

2.9.17 At the end of the shift, the area should be checked by an experienced supervisor. No loose sheet should be left on the top.

2.9.18 In any factory no person shall be allowed to stand, walk or do any work or go for any purpose whatsoever, on a roof of ceiling covered with or constructed of sheets plain, corrugated or otherwise made of cement, cement mixed with asbestos or with any other materials or any similar materials in respect of which there may be danger of the sheet breaking due to the weight of the man and no person shall be allowed to work or go for any purpose whatsoever, on a slopping roof unless :

a] Suitable and sufficient safety devices like ladders, dust ladders, access boards and crawling boards securely supported and fixed are provided and used.

b] Suitable and sufficient parapet wall or railing or any other equally effective device to prevent the person from falling from slopping roof is provided.

3. SAFETY INSTRUCTIONS FOR HEIGHT WORK

3.0 OVERHEAD CRANES:

3.1 One should not go on overhead crane runway for any purpose without permission from the Crane incharge and without notifying the Crane Operator.

3.2 One should not stand inside wagons when they are being loaded or unloaded by Cranes.

3.3 No one should stand, or walk under loads suspended from a crane. Likewise Crane Operators must not carry loads over the heads of persons.

3.4 No work whatsoever in nature, shall be carried out near the crane walkways, girders or Crane Bus Bar, unless Permit to Work is obtained from the departmental Crane in-charge or his representative. Crane Operator must also be informed.

3.5 It is necessary to take power shut down while working near the power rails.

3.6 If job to be carried out in crane gantry, agreed procedure to be worked out in consultation with Electrical, Operation and Safety Department. Stop blocks to be provided on the gantry on either side at a distance about 20 ft. from working area. In addition, red flag (or at night red light) to be provided to caution the crane driver about men working on the crane gantry. All men regarding hazards due to clearance of the building etc. Caution boards wherever required to be provided at appropriate places.

3.7 Crane bridges should not be used as a means of access for crossing from one bay to the other. Proper passages provided for the purpose should be used.

3.1.0 PROCEDURE FOR WORKING ON CHIMNEY:

3.1.1 A team of experienced Riggers with safety belts tied with them should climb up the chimney by the ladder provided along the chimney. They should take with them one bundle of 1/4" dia. manila rope measuring about 185/00 RM in length. As soon as they reach on the top-most platform they should tie the other end of the safety belt with a permanent support then they should release the rope from the top most platform after fixing securely one end of rope. They should also not peep inside the chimneys.

3.1.2 By means of this 1/4" dia they should then take 3/4" dia. manila rope on top. By means of this 3/4" dia. manila rope pulley blocks, 25 mm. manila rope of total height of chimney, slings, U-clamps etc. required at top should be lifted up. They should then fix these pulley blocks with wire slings to the permanent fixture in position. After this is done 25 mm. dia manila rope should then be lifted and brought to top by means of 20 mm. dia. rope. This 25 mm manila rope should be taken around the pulley block and the other end also should be released to the bottom of the chimney. This will ensure both the ends or the rope remaining at the bottom level. One end of the rope should be tied with a strong permanent support so that at no stage the rope comes out of pulley block.

3.1.3 The other end of this rope should be tightened with the specially fabricated drum. At the bottom of drum two nos. of 1/2" manila rope in each should be tied up. This will ensure ring-controlled movement of drum from the bottom level. Exclusively two alert workers should be placed to control these guide ropes. The second piece of 1" manila rope should be released

to the bottom level after properly released lower end of this rope should be tightened to the top ring of the drum. This will enable controlled movement of the drum from both top and bottom levels.

3.1.4 With the help of this drum all the men and materials should be carried up and down in most safe manner by providing suitable and signalling arrangement.

3.1.5 For every drop of five feet the painters should give the signal to the men at bottom and on this signal; the top man then should release the knot of the top rope and extend the length by another 5 ft. This should be repeated for every 5ft drop. After releasing and re-tightening the top guide rope the man at bottom level should be signalled to lower down the drum. As soon as the signal is received the bottom man shall gradually lower the bottom guide rope and the main rope so that drum is lowered slowly to a further 5ft drop. This will ensure the safe lowering of the painter between the two platform level. The safety belt rope of painters is also released and re-tightened by the top people.

3.1.6 This process will be repeated when the work between top platform to next platform is completed by lowering the arrangement from top platform and fixing it to the next platform.

3.2.0 STRUCTURAL ERECTION:

3.2.1 All persons shall stand clear when a crane is sorting or shifting steel girders or other structural materials.

3.2.2 No person shall stand, walk or work beneath any suspended load.

3.2.3 Guide rope must be used for guiding while lifting loads.

3.2.4 When guiding a beam or fabricated structure for erection it shall be so held that the employee's hands do not get jammed against other objects.

3.2.5 Safety belts equipped with suitable lifelines must be used by persons working at heights and standing on structural members. Lifeline must be tied to an independent support. Standard safety belts (ISI marked) shall only be used.

4. SAFETY INSTRUCTIONS FOR VARIOUS MECHANICAL JOBS

4.0 RIVETING:

4.1 Bolts covered with wet or slippery compounds shall not be used in fabrication or structural work.

4.2 The rivet heater must keep the rivet heating equipment as near as possible to the place of work.

4.3 A bucket of water shall always be kept ready for quenching the fire when stopping riveting work.

4.4 Hot rivets shall not be thrown across aisles and shaft ways.

4.5 Metal buckets for catching hot rivets must have false wooden bottoms or be filled partially with sand to prevent rivets from rebounding.

4.1.0 RIGGING:

4.1.1 All lifting tools tackles, slings and ropes must be thoroughly checked before putting them to use.

4.1.2 Defective or worn-out tools, tackles, ropes or slings should never be raised even if the load appears small.

4.1.3 While hooking, slinging or un-hooking any load, hands should be kept out of the pinch point.

4.1.4 Before lifting the load, it must be ensured that the crane hook is properly centered and the load balanced so as to avoid undue tilting or swerving of the load while lifting.

4.1.5 Slings should never be overloaded. For this it is most important to have a correct assessment of the load being lifted. If in doubt, site-in-charge/supervisor should always be contacted.

4.1.6 While using double-legged slings, the angle made by the legs with the horizontal should always be kept above 45 so as to prevent any overloading of the sling. This is best achieved by using sufficiently long slings with the legs moderately spaced.

4.1.7 Only one person should signal the crane operator and only standard signals should be used.

4.1.8 Travelling loads shall be raised high enough to clear all obstacles coming in the way.

4.1.9 No person should walk or stand below any swinging load.

4.1.10 Slings should be released only after ensuring that they are completely free from load.

4.1.11 While using jacks, care should be taken to provide wooden block both at the top and at the base of jack. Also the jack should be tied by means of rope to prevent slippage of jack.

4.1.12 If Hydraulic jack is used, the load lifting should rest on wooden block or temporary support to prevent mishap due to failure of jack.

4.2.0 MECHANICAL ERECTION:

4.2.1 Load to be properly ascertained and position of center of gravity and load transfer at slinging point to be thought of before handling any equipment.

4.2.2 A special check is required regarding fitness of all lifting and haulage tackles, ropes, slings etc.

4.2.3 Selection of Tommy bars, rollers, skids etc. should be made depending on the type of equipment to be handled.

4.2.4 The common tendency of checking gear meshing, lubrication, coupling matching, hole matching etc. by feeling with a finger is strictly prohibited.

4.2.5 Gas cutting of any member should be avoided.

4.2.6 In case of all installation to be tested and tried, the supplier's instruments Should be properly studied and followed during installation and testing.

4.2.7 A general check on integral or other service system lubrication system and check on free and easy movement of all moving parts and their safe clearance to be taken care before such test.

4.2.8 All safety features to be checked.

4.2.9 Regulations e.g. Indian Boiler Regulation, Regulation for Explosives, Electricity Acts/Rule etc. and any other set Procedure e.g. working near gas line, electric line etc. should be followed.

4.2.10 Attention should be paid to all mechanical safety guards, toe-boards, hand railings, hatchway covers, ladders etc.

4.2.11 Grinding wheel should be handled with care. These should be visually inspected/checked by ringing test for possible damage before mounting. Before mounting matching of the wheel maximum operating speed (marked on the tag) against machine speed should be ensured. Mounting flanges should be equal and diameter at least 1/3 dia. of the wheel. Wheels should be covered by guard at least one-half of the grinding wheel and operator should use safety goggles. Wheels should not be tampered for mounting and no materials should be ground for which the wheels are not designed for. Normal clearance between pedestal grinding wheel & tool rest should be kept at 03.00 mm.

4.2.12 Working on rooftop has the danger of person falling down. If work is to be carried out over fragile roof, all men required to work on the rooftop should be trained for safe work on the roof too. Crawling boards should be made use of during any work on fragile rooftop. Also caution boards should be fixed up at the ladders leading to the roof top "Danger, do not go on the roof top without permission". Use of Fabricated roof Ladders to work on fragile roofs is recommended.

4.2.13 Eyebolts fixed at correct slinging points for heavy machinery parts, motors, generators, and turbines etc. should be utilized for handling.

4.2.14 Torque wrenches should be provided for taking the correct strain during tightening of nuts on bolts.

4.2.15 Supplier's instruction should be strictly followed for special installation e.g. fixing of friction grip bolts etc.

4.2.16 Safety valves for steam, compressed air and gas requirement and expansion joints should be checked.

4.2.17 No slings should be overloaded, safe working load for fiber rope and wire rope slings as given should strictly adhered to.

4.2.18 Proper quality of pulley block should be used. In no case pulley block suitable for fiber rope should be used for steel wire rope.

4.3.0 WELDING AND GAS CUTTING:

4.3.1 Oxygen Cylinders must not be stored near other cylinders containing gas or oil, grease or other combustible materials.

4.3.2 While the cylinder is in use, the cylinder valve, key or wrench must be placed on the valve spindle.

4.3.3 Before a cylinder is moved, the cylinder valve must be closed.

4.3.4 Gas cutting torches must be lighted by means of friction flames or similar other methods and not with matches.

4.3.5 When torches are being changed or welding stopped for short time, all cylinder's valves must be closed.

4.3.6 The coloured lenses used for welding or gas cutting must be of proper shade for the work being done.

4.3.7 Before any heavy structural member is gas cut, it should be ensured that it is cleared and supported by ropes, cables, chains or any other means to prevent its dropping or swinging.

4.3.8 Substantial and incombustible screen must be used below or near the welding operations, if there is a possibility of spark falling on other workmen engaged in work close-by.

4.3.9 All air/gas pipe lines and air/gas hoses must be frequently inspected. Air/gas hoses shall not be used for dusting or for cooling purposes.

4.3.10 Gas Cylinders should not be stored near furnaces, cupolas, stove or any other source of heat. The cylinders lying in the open should be protected from direct rays of the sun.

4.3.11 All dissolved Acetylene Cylinders should be kept in upright position whenever in use or while storing. Oxygen cylinders should, however, be kept flat on the ground only when in use.

4.3.12 Gas Cylinders should be placed in locations where sparks or flames from welding or cutting work cannot contact them.

4.3.13 The unloading and loading of gas cylinder must be carried out with utmost care :

a] Cylinders should not be allowed to drop or come into violent contact with one another. Adequate arrangement should be made to prevent cylinders falling from the vehicles. They should not be loaded loosely to avoid coming in violent contact when the vehicle moves.

b] Rolling of gas cylinders should be avoided and they should be transported by proper trolleys.

4.3.14 Oxygen and acetylene cylinders should not be stored together.

4.3.15 Application of oil, grease or any other lubricating materials to regulators, valves or fittings of gas cylinders is STRICTLY PROHIBITED. Cylinders and fitting should be kept free from oil or grease to avoid ignition and explosion.

4.3.16 In case of leakage from regulators, valves or other fittings of the gas cylinders, the cylinders should be immediately removed and sent for necessary repair.

4.3.17 Proper protective clothing and appliances such as goggles, face shield leather gloves, leather apron etc. should be worn for protection against radiating heat and spark.

4.3.18 One should not watch an arc-welding operation with naked eyes.

4.3.19 When arc-welding operations are performed in an area, not enclosed or isolated, workers or other persons connected with the arc-welding job should wear coloured goggles.

4.3.20 It is preferable to provide portable shields in the area where Arc Welding is carried out.

4.3.21 Suitable fire extinguishers in working condition should be kept close to all welding and gas-cutting operations.

4.3.22 When welding or gas-cutting is performed in a confined space, the cylinders should be left outside.

4.3.23 In confined spaces, where the means of exit is a manhole or other small opening, means should be provided, such as life belt and life-line for quickly removing the workers in case of an emergency. An attendant should be stationed outside the exit at all times while the work is in progress.

4.3.24 While cutting or welding on gas-lines, clearance should be obtained from proper authorities and gas safety procedure laid down by the management must be followed.

5. SAFETY INSTRUCTIONS FOR ELECTRICAL JOBS

5.0 ELECTRICAL:

5.1 All Electrical installations shall be as per Indian Electricity Rules.

5.2 Only competent persons should make electrical connection and installation and attend electrical defects. It is essential to ensure that they are not only capable of executing/supervising the job but also have the necessary competency certificate as per statutory requirement.

5.3 The issue and return of permit to work should be operated by a person authorized to do so. Before energizing any individual units, proper phasing out and voltage tests, performance of protective and control system, checking connection, making and tagging to be carried out. Safety appliances e.g. rubber gloves, rubber mat, grounding rod, neon tester, insulated screw driver, pliers etc. should be used. Installation should only be energized after taking necessary clearance from appropriate authority.

5.4 Only authorized persons shall handle or otherwise interfere with electrical equipment. Any person detecting an electrical apparatus being handled by an un-authorized person, or an equipment in unsafe condition, must report the matter to executing authority in charge of electrical.

5.5 No person shall work on any live electrical conductor or apparatus, and no person shall assist such person on such work, unless he is authorized.

5.6.1 After isolating any equipment from the source of supply and before starting the work a sign `DON'T SWITCH ON' must be hung on or near the switch to avoid its being accidentally or inadvertently switched on when persons are working.

5.6.2 Fuses should be taken out and kept in safe custody.

5.6.3 The switch may be locked if locking arrangement exist.

5.6.4 The equipment, should be earthed properly before starting the job for discharging it and it and terminals should be shorted as a precautionary measure against -accidental switching "ON".

5.6.5 After the work is finished. the earthing and shorting link should be removed.

5.6.6 All tools and materials should be removed from the site and the switch unlocked and the fuses should be replaced.

5.6.7 The switch shall be made `ON' by the person who switched it `OFF' or by the person authorized by him in writing to do so.

5. 7 All temporary electric lines should be drawn at least above man's height. No live wire should be laid on the ground or wet surface. All the electrical joints should be properly insulated.

5.8 When working on a live equipment, only one hand should be used, preferably right hand, whenever possible. It is advisable to keep the other hand behind the back. Shocks from hand to hand are most dangerous.

5.9 All persons handling electrical gear in an elevated position must use safety-belts. Even a slight shock may cause loss of balance and fall.

5.10 No one shall attempt to extinguish a fire on or near a live electrical apparatus with water as water is a conductor of electricity. Correct type (VOa; CTS or Dry Chemical) of

extinguisher should be used wherever provided. Otherwise, sand and blankets may be used if available.

5.11 No person shall use any part of an electrical equipment, wires, cables etc. for storing or hanging clothes, umbrellas or other articles. Serious accidents can result from this bad practice.

5.12 For attending the work on overhead lines or equipment, wooden ladders should be used. Metallic ladders shall not be used.

5.13 Insulated tools must be used and it must be ensured that the insulation is in proper `Condition by having periodical inspections' at least once in three months. Rubber gloves should be used when working on HIGH TENSION lines.

5.14 Verbal instructions shall be avoided in case of pre-arranged shut-downs of electrical equipments.

5.15 When workers are employed for electrical installations, which are already energized, insulating mats, safety appliances such as gloves, sleeves and boots as may be necessary, shall be provided. The workers shall not wear any finger rings, watches or carry keys and other materials which are good conductors to electricity.

5.16 The use of temporary wiring shall be avoided. frayed, loose or dangling wires are dangerous. These should be reported to the Electrical section for immediate repairs.

5.17 Hand lamps if used, must preferably be of a low voltage type (24-Volt or 110 Volt) and the earthing must also be done properly.

5.18 Defective extension cords should not be used for cables or portable hand tools. Place cords, cables and equipments in such a way that they do not endanger anyone.

5.19 One should always keep clear of power rails and high tension lines.

5.20 Permission must be obtained from the Executing Authority before any person is allowed on an elevated place or near power rails.

5.21 Abandoned electric poles should be removed if they are of temporary nature.

6. SAFETY INSTRUCTIONS FOR WORKING IN CONFINED SPACE

6.0 WORKING IN CONFINED PLACE:

6.1 In every working place where persons are required to work in a confined place, adequate ventilation by the circulation of fresh air shall be provided and no person shall be allowed to enter any place where there is reason to apprehend that the atmosphere is poisonous or asphyxiating unless the person wears a suitable breathing apparatus and is equipped with life line held by a person stationed for the purpose in a safe place.

6.2 There shall also be provided in a suitable position and readily available sufficient and appropriate rescue apparatus including :

6.2.1 Suitable reviving apparatus.

6.2.2 Suitable reviving apparatus and reel of ropes of adequate length and strength

6.3 All such equipment and apparatus shall be in charge of a competent person conversant with their use and he shall be available at all times while any person is in the place. All such equipment shall be available at all times while any person is in the place. All such

equipment shall be properly maintained, tested and examined at intervals of not more than one month.

7. SAFETY INSTRUCTIONS FOR WORKING IN GAS LINES

7.0 PROCEDURE FOR WORKING ON GAS LINES:

7.1 No Contractor is allowed to work on any gas line without specific written permission from the contracting department and it is the responsibility of the contractor to ensure that the following precautions have been taken.

7.2 It must be ensured before starting work that valves have been closed. Caution tags have been attached, connection have been blanked off and pipe lines and attached equipment have been purged with steam or inert gas.

7.3 Pipes and equipments must be properly ventilated.

7.4 Before starting work, gas test must be done and a written certificate should be obtained about the concentration of gas in the area and a clearance about the safety of employees to work in the area.

7.5 It must be ensured that sparks do not ignite material in the vicinity or lower levels and all adjacent equipment are safe.

7.6 Presence of Fire Brigade must be ensured.

7.7 All scaffoldings must be in good order and all men must be provided with ISI marked safety belts. Where necessary, railings must be provided and at least two outlets for escape in emergencies must be provided.

7.8 Gas masks, Oxygen Cylinders and if possible artificial respiration units must be kept ready on hand.

7.9 Before welding or drilling, the equipment must be earthed properly.

7.10 Before welding or Gas Cutting, all necessary precautions will be taken so as not to cause any fire or explosion.

7.11 Well trained supervisor must be present throughout the job on any gas lines.

8. SAFETY INSTRUCTIONS FOR MOBILE LIFTING APPLIANCES

8.0 MOBILE LIFTING APPLIANCES:

8.1 No mobile lifting appliances shall be used on a slopping surface unless adequate precautions are taken to ensure stability.

8.2 Adequate precautions shall be taken to see that the job of the mobile crane does not come in contact with overhead electric transmission lines.

8.3 Only one person shall give signals to the operator of mobile lifting appliances, and standard signals shall be used.

8.4 No load shall be raised, lowered or suspended from a chain or rope having a knot in any of its part.

8.5 No chain which is joined to another chain by means of bolt and nut shall be used for raising, lowering or suspending any load.

8.6 All chains, ropes and lifting gears in use shall have a certificate of a competent person authorized by State Government.

8.7 No person shall walk under a load which is swinging by lifting equipment. Guide rope must be attached to the load to prevent its swinging.

8.8 Use of Hoisting Machines and Tackles including their attachments, anchorage and supports shall conform to the following standards of conditions:

8.8.1 These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good working order.

8.8.2 Every rope used in hoisting or lowering materials, or as a means of suspension, shall be of durable quality and adequate strength and free from patent defect.

8.8.3 In case of every hoisting machine and every chain, ring, hook, shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means and every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of hoisting machines having a variable safe working load each safe working load for the conditions under which it is applicable, shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond the SWL except for the purpose of testing. Mobile cranes shall have the working load and radius of jib for the load marked on it.

8.8.4 The top pulley hoisting a load shall be opened monthly and the spindle inspected to see if any under wear has taken place and for greasing.

8.8.5 In case of departmental machine the safe working load shall be notified by the executing authority of In charge of electrical. As regards contractor's machines the contractor shall notify the safe working load of the machine to the Engineer in-charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.

8.09 Motors, gearing, transmission, Electric Wiring and other dangerous parts of hoisting appliances shall be provided with efficient safe-guards. Hoisting appliances shall be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions shall be taken to reduce to the minimum, risk of any part of a suspended load becoming accidentally displaced.

8.1.0 **FORKLIFT, PAY LOADER & EIMCO ETC.**

8.1.1 Only authorized persons will drive the above equipment and it should be ensured that the brake, horn and lights are in good condition.

8.2.2 Before starting the equipment, it should be ensured that the brake, horn and lights are in good condition.

8.2.3 If any defect is found in the equipment, it must be reported at once to the supervisor concerned.

8.2.4 Before starting the equipment, one should look around and make sure that every body is clear.

8.2.5 While travelling the bucket, fork etc. as the case may be, it should be lowered sufficiently to ensure maximum visibility.

8.2.6 It should be ensured that the engine has been stopped, the fork or the bucket has been lowered and the hand brake has been applied before dismounting the Pay loader or the Forklift.

8.2.7 Unauthorized riding on the equipment is prohibited.

8.2.8 While reversing the equipment, special care should be taken to see that the passage is absolutely clear. Likewise the same procedure should be observed while travelling forward, particularly with loads.

8.2.9 One should not drive too close to the edge of an excavation or where caving-in earth possible.

9. SAFETY INSTRUCTIONS FOR ROAD &RAIL SAFETY

9.0 ROAD SAFETY

9.0.1 The pedestrians, Cyclists, Drivers of vehicles and all concerned must follow the standard road safety rules framed for the purpose. Two wheeler users must have helmet while driving.

9.0.2 Nobody should try to cross the level crossing when drop gates are closed or signal is given for blocking the road. "STOP, LOOK AND PROCEED" should be followed.

9.0.3 None should try to cross under the standing train or down the track where wagons are parked.

9.0.4 None should try to cross through the gap between buffers of wagons.

9.0.5 Undue haste should be avoided.

9.0.6 All warnings, cautions, instructions, "DOs and DONT's" of safety should be observed strictly by everyone.

9.0.7 All should be attentive while crossing roads & level crossings. It should be remembered that Rail-Traffic has the right of the way on railway level crossings.

9.0.8 While crossing the railway level crossing, do not stop on the rail track. Always cross over it.

9.0.9 The speed limits displayed along the road should be strictly followed.

9.0.10 Short-cuts and cutting across the corners should be avoided.

9.1.1 VEHICLES & RAILWAYS:

9.1.1 No person shall board any vehicle or equipment when it is in motion.

9.1.2 Suitable blocks shall be placed against the wheels of a vehicle when it is used for tipping materials into excavation or a pit over edge of any embankment or earth work to avoid the danger of its running over the edge.

9.1.3 All workers shall stand clear of the vehicle while it is dumping. If the material being dumped is very heavy or sickly, dump hooks shall be used or Dumper shall be clamped to prevent any danger of its tripping.

9.1.4 Materials shall not be allowed to be loaded in a vehicle so as to project horizontally beyond the sides of the body of the vehicle.

i][a] No persons should sit on loads or cabin in moving trucks.

ii] Proper scotch blocks to be given while transporting any material which is likely to roll.

iii] Loose material like muck ash, chips, bricks etc. should not be loaded in excess of the height of the side boards.

iv] Nobody should stand in a moving truck.

v] Heavy & bulky packages should be properly tied to body of truck to avoid shifting and falling of loads.

vi] Before reversing one should make sure that it is safe to do so; if necessary the help of another person should be taken.

9.1.5 One should not take rest on rail-tracks or sit underneath stationary wagons.

9.1.6 One should not get on to a locomotive or wagon unless he is an authorized person to travel or he has to go there in the performance of his duties. In any case the traffic crew must know his presence in the loco/wagons.

9.1.7 Contractors should ensure that no material belonging to them is stacked close or high along the track. This reduces movement space for traffic crew and also obstructs their vision ahead.

9.1.8 If men have to work on or close to rail tracks, or materials are temporarily kept over the tracks, red flags on both sides should always be exhibited and advise to concerned traffic zone in advance should be given.

9.1.9 While crossing rail tracks in Marshalling Yard, one should not step over points, since points are remote controlled electrically.

9.1.10 Before crossing any un-manned level-crossing, one should stop, look listen and make sure no loco or train is approaching from either directions.

9.1.11 Blocking or using of running rail track inside the works is prohibited. If at all, it is necessary to interfere with the Rail track, prior permission must be obtained from the Traffic Department.

9.1.12 If men have to work on or close to tracks, red banner/flags/red lights must be exhibited on both sides and traffic department must be informed in advance.

10. SAFETY INSTRUCTIONS FOR MACHENERY & EQUPMENTS

10.0 MACHINERY AND EQUIPMENT:

10.1 Employees should not turn on electricity, steam air, gas, acid or water, or set in motion any machinery or equipment, without first making sure that no one is in a position where he could be injured. Proper signals should be given and precautions taken, to ensure that all such persons are warned before turning on electricity, steam, air gas, acid or water or setting in motion any machinery or equipment.

10.2 Employees should not attempt to operate, repair or test any machinery or equipment, unless it is a part of their assigned duty to do so, and should not meddle or experiment with any machinery or equipment with which they are not familiar.

10.3 In all cases where intermittent operation is possible, the machinery or equipment should be stopped before attempting to lubricate or clean it. No attempt should be made to lubricate or clean a machinery or equipment which an employee does not understand.

10.4 Guards and other safety devices provided on the machinery or equipment for the protection of employees should be removed only for maintenance and repairs of the machinery or equipment, and that, too, by authorized persons. They should be replaced, as soon as the work is over and always before restarting the machinery or equipment.

11. SAFETY INSTRUCTIONS FOR LIFTING TOOLS ,TACKLES & HAND TOOLS

11.0 TOOLS & TACKLES AND HAND TOOLS:

11.1 Lifting tools & tackles means tools & tackles as mentioned in Indian Factories Act, 1948 as per Statutory Provision in Section-28 & 29. It covers :

a] Hoist - (Mechanical or Electrical)
b] Lifts - (Passenger/Material Lifting)
c] Lifting Machines - Crane (EOT, hand operated cranes, mobile crane, monorail hoists), Grabs, winch (Electrical or hand operated). Toggle, chain pulley block, Gin Wheel, Transporter or Run Away, Hug Jug, Ratchet.
d] Lifting Tackles - Chain slings, rope slings, Hook, shackles, shovel, coupling, socket, clamp, tray etc.

11.2 Hoists and lifts shall be of good mechanical construction and sound Material and adequate strength.

11.3 It should be properly maintained & shall be thoroughly examined by a competent person as certified by Chief Inspector of Factories & Boilers at least once in a 6 (six) months & register shall be maintained containing the prescribed particulars of every such examination.

11.4 The contractor should see that sufficient nos. of good quality tools required for the work are made available to his workers.

11.5 The tools and lifting tackles should be inspected periodically and records of inspection maintained by a responsible person.

11.6 All hand tools such as chisels, hammers, files, punches, spanners, wrenches etc. should be kept in good condition at all times.

11.7 Defective tools or tackles having mushroomed heads or tools having cracked or broken handles or improper fitting etc. should never be used. They should be replaced at once. Wrenches & spanners should be kept in such a condition that they will not slip.

11.8 Tools should be used for purposes for other than they were designed.

11.9 Tools and materials shall not be left in elevated positions if there is possibility of their falling or being knocked off.

11.10 Tools or equipment should not be dropped or thrown from one level to another at any time.

11.11 All portable power tools such as drills, grinders, saw etc. which are operated electrically should be thoroughly inspected before using them.

11.12 The earthing wire provided to the electric tools should be checked regularly.

11.13 Insulation of the cables and the cords must be intact. There should not be any joint and exposed live parts on the cables, cords or on the tools.

11.14 Sharp tools like chisel knives etc. should be provided with casing.

12.0 **SAFETY APPLIANCES**:

12.1 Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.

12.2 Those engaged in white washing and moving or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles and dust respirators.

12.3 Those engaged in welding works shall be provided with welders' protective eye-shields.

12.4 Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

12.5 When workers are employed in sewers and manholes which are in use, the contractor shall ensure that the manhole covers are opened and chamber are ventilated at least for two hours before the workers are allowed to go down into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.

12.6 Safety belt with a sufficiently long life line should be worn before going down any man-hole. Strict vigilance must be maintained whenever Work inside sewers/man-holes is in progress and at least one supervisor/responsible person must ALWAYS be present at the opened manhole.

12.7 The workers going into inspection chamber shall have gas masks, gum boots and rubber gloves while working inside. After coming out they shall have some disinfectant from the first aid box for proper washing.

12.8 All necessary personal safety equipment such as safety helmets, safety boots, safety belts, leather gloves for welders, clear glass safety goggles, gum boots, dust respirators etc. as considered adequate by the Executing Authority have to be kept available for the use of persons employed at the site of work and maintained for immediate use and contractor shall take steps to ensure proper use of these equipments by the workers.

12.9 Safety guards, safety devices and other equipments must not be tampered with and should always be used. Utmost care should be taken to keep the safety equipments and appliances in good condition. They should be inspected every time before use. If any defect is found either it should be rectified or reported to the supervisor concerned.

12.10 Adequate foot wear or safety boots must be used by all employees working inside the Steel Plant.

12.11 Safety goggles must be worn while grinding, whether by means of a portable electrical grinder or working on a table grinding machine.

12.12 Gloves must never be worn while working on moving machinery particularly on grinding wheels.

12.13 Safety belts must always be worn when working at heights. The minimum diameter of life line should be 3/4" for manila-rope and 1/2" for nylon rope.

13.0 **WORK CLEARANCE CONTRACTORS**:

13.1 It has been observed that quite often contractors place their worker for work in certain departments/sections without giving any prior intimation of taking clearance from the departments/ section concerned. This lack of communications is not desirable in the interest of safety.

It is therefore necessary that before putting their note for any work in any department/section, the contractor shall get the clearance from the particular department/section where they are to carry out the job.

The enclosed "Work Clearance Form for Contractors" (Annexure-`C') should be used. The form shall be filled in triplicate by the Contractor for record of :

i] Department engaging the contractor
ii] Department/section granting clearance and
iii] Contractor

All department/section engaging contractors must ensure compliance of these instructions by the Contractors.

All additional clause on the need of "Work clearance" shall also be incorporated in all contracts, which is given below:

a] "Before actual commencement of the contract or any part there-of in any department/section, the contractor shall apply for and obtain work clearance certificate in the form prescribed by the company which may be obtained from Executing Authority.

b] The contractor should designate a person responsible for work who will maintain regular liaison with plant safety department. Contractors engaging more than 250 workers will designate a responsible person exclusively for safety supervision.

14.0 **FIRST-AID:**

14.1 All contractors must maintain a First-Aid kit with them for use in emergencies. The First Aid Kit must contain following items :

Few pads of gauge
Lint cloth
Cotton Wool
Adhesive Plaster
Sterile dressing pads
Medical dressings (Band Aid)
Bandage
Splints
A pair of scissors
Safety pins

Following medicines :

[a] Dettol, [b] Tincture Benzoin, [c] Lotion gention violet [d] Liquid paraffin e] Lotion acriffavin [f] Burnol or furacin [g] Eye drops

A small note book and pencil.

14.2 In case of any minor injury like small cuts, abrasions etc. the contractor should give First Aid Treatment on the spot and should immediately sent the injured person to the plant medical unit/ESI hospital for further treatment.

14.3 In case an employee is seriously injured, ambulance should be called immediately and the injured person be sent to RSP hospital without any loss of time.

*

14.4 In case of fatal accident, the Engineer-in-charge of the department, supervisor, Safety must be informed immediately.

14.5 In case of fracture or dislocation, no attempt should be made to interfere with the injury and the injured person should be taken to RSP hospital/ESI hospital in as comfortable as possible manner.

14.6 In case of acid alkali burns, the affected part of the body should be washed with profuse water immediately and the injured person sent for medical treatment.

14.7 If the clothing of any person catches fire, he should not allowed to run. The flame should be smoothened with a thick clothing or blanket and the person should roll on the ground at once if these are not available.

14.8 The clothing sticking to the burnt part should never be pulled. Blisters should not be pricked. If possible the burnt parts may be cooled by putting wet towels or in slow running cold water.

14.9 In case of shocks, cloths should be loosened, patient should be made to lie down comfortable on one side. He should be pressured. He should not be given any drink, only lips should be wetted with cotton soaked in water. If feeling cold he should be covered and sent for medical aid immediately.

14.10 In case of gas poisoning the injured person should be immediately removed to an open-air area and given oxygen and should be sent for medical aid immediately.

14.11 In case of electrical shocks or other types of shocks where breathing is stopped artificial respiration should be given by a trained first-aider immediately.

14.12 All contractors should get some of the supervisors trained in Fist-Aid Methods.

15.0 PENAL PROVISION FOR SAFETY VIOLATIONS:

The contractor shall be lible for penalty for violation of safety provisions/ requirement as follows:

1. In case of minor violation 9first violation) – deduction / recovery of Rs. 3000/- (Three thousand) from his dues.
2. In case of major violation (subsequent violation0 with or without injury / disability – deduction or recovery or Rs. 10000/- (Ten thousand) from his dues.
3. In case of violation resulting in permanent disability / death of any person – banning of business dealing with RSP or deduction of Rs. 1,00,000.00 (One lakh0 from his dues or both.
4. The decision of the HOD, Safety Engg. Deptt. / Execution Deptt. As to deductions / recover shall be final
5. The above amount shall be recovered from contractor bill / security deposit.

16.0 PROCEDURE TO BE FOLLOWED FOR DISMANTILING OF IDLE ASSETS

REF:- CIRCULAR MM (Mktg) A & D / IA/03-04/DT:04/06

Sl. No.	PROCEDURE	ACTION BY
1.	Necessary safety clauses as agreed in terms and conditions of tender should be incorporated in the sale order.	Marketing Deptt.
2.	After receiving the gate passes the employers will be given safety training by the Safety Engineering Department.	Marketing Deptt.
3.	The comprehensive safety protocol to be prepared involving all concerned agencies and approval from GM concerned to be obtained. It should be strictly followed.	Concerned Deptt.
4.	No employee should be engaged in the job without undergoing safety training by Safety Engg.Deptt.	
	Safety training application to be forwarded to the safety department as per procedure.	Mkt.Dept.

5.	A separately designated safety supervisor should be employed by the purchaser to co-ordinate concerned agencies during dismantling job. He should be responsible for continuous safety supervision.	Mktg.Dept.
6.	Daily site clearance to be given by deptt. Technical officers of the owner department before starting of the job in writing.	Concerned Dept./ Safety
7.	Regular site inspection will be done for identifying unsafe condition/unsafe act or any other safety violation.	Safety Dept.
8.	Safety violations will be communicated on regular basis to marketing dept. for necessary action.	

17. ANNEXURES

ANNEXURE-I :ON SITE JOB SAFETY TRAINING

DEPARTMENT:

NAME OF THE CONTRACTOR:

WORK ORDER NO AND DATE:
NATURE OF JOB:

SL NO.	NAME OF WORKER	TRADE	GATE PASS NO.	SIGNATURE

I have trained the above mentioned contract labours at site and explained the likely hazards and safety measures to be taken therein.

SIGNATURE OF DEPARTMENTAL OFFICER

ANNEXURE 2: WORK CLEARENCE FORM FOR CONTRACTORS

NAME OF THE PLANT UNIT:----------

1	NAME OF THE CONTRACTOR FIRM WITH ADDRESS	
2	ENGAGED BY WHICH DEPARTMENT:	
3	NAME OF THE REPRESENTATIVE / SUPERVISOR OF THE CONTRACTOR SUPERVISING THE JOB	
4	PRECISE NATURE OF WORK TO BE CARRIED OUT WORK ORDER REF	
5	PRACISE LOCATION OF WORK	
6	PROPOSED DATE AND TIME OF COMMENCEMENT OF WORK	
7	EXPECTED NUMBER OF DAYS REQUIRED FOR THE WORK	
8	WHETHER CONTRACTORS WORKERS ARE TO BE ENGAGED IN G/A/B/C SHIFTS AND NO OF PEOPLE ENGAGED	

A.I ACCEPT THE RESPONSIBILITY FOR ENSURING THAT LABOURS, SUPERVISORS AND STAFF UNDER MY CONTROL SHALL OBSERVE THE STATUTORY SAFETY REQUIREMENTS AND FOLLOW THE SAFETY INSTRUCTIONS OF THE PLANT.

SIGNED_____

DATE:_____ CONTRACTOR

B. (CERTIFICATE TO BE GIVEN BY THE ENGAGING DEPARTMENT)

CERTIFIED THAT THE CONTRACTOR HAS BEEN ENGAGED BY US FOR THE WORK DESCRIBED ABOVE,

SIGNED_____
DEPTT OFFICER_____
DATE_____ DEPARTMENT_____

C CERTIFICATE TO BE GIVEN BY THE DEPARTMENT/SECTION WHERE WORK IS TO BE CARRIED OUT

YOU ARE AUTHORISED TO CARRY OUT THE WORK DESCRIBED BELOW

SIGNATURE_____
NAME AND DESIGN._____
DEPARTMENT_____

DATE_____

NOTE:

1. THIS FORM SHALL BE FILLED IN TRIPLICATE BY THE CONTRACTOR FOR RECORD
2. THIS CERTIFICATES ARE NOT A SUBSTITUTE FOR THE ELECTRICAL PERMITS AND DONOT GIVE PERMISSION TO USE NAKED LIGHTS ARE WORKS IN GAS HAZARDOUS AREAS OR ENTER CLOSED VESSELS WHICH SHALL BE TAKEN SEPERATELY WHERE REQUIRED.

ANNEXURE 3: IOW(CONTRACTORS EMPLOYEE)

ROURKELA STEEL PLANT
ROURKELA

REPORTED: "INJURED ON WORK"
(CONTRACTORS EMPLOYEE)

REF NO:

1. NAME OF THE WORK WHERE EMPLOYEED_____
2. NAME OF THE INJURED PERSON_____
3. NAME OF THE CONTRACTOR_____
4. TRADE_____ GATE PASS NO_____
5. DATE & TIME OF ACCIDENT_____ SHIFT_____
6. DEPARTMENT / ZONE / DIVISION_____
7. EXACT PLACE OF OCCURRENCE_____
8. EYE WITNESS (1) _____(2)_____
9. PERSONS APPRISED (1)_____(2)_____
10. BRIEF ACCOUNT OF ACCIDENT

SIGNATURE OF THE
SUPERVISOR / INJURED PERSON

DATE_____

_____

PARTICULARS TO BE FILLED UP BY THE MEDICAL OFFICER

NATURE OF INJURY_____

1. IS THE INJURED PERSON FIT TO RETURN TO DUTY_____
2. IS THE INJURED PERSON UNFIT FOR WORK_____
3. IF UNFIT, THE PROBABLE LENGTH OF TIME MAY BE OFF DUTY_____

THIS EMPLOYEE HAS BEEN NOTIFIED THAT_____

SIGNATURE OF THE MEDICAL OFFICER
*DATE*_____*TIME*_____

NOTE

1. WHEN AN INJURY OCCURS TO CONTRACTOR EMPLOYEE INSIDE PLANT THE I/P SHOULD BE SENT TO TH FIRST AID STATION IMMEDIATELY WITH THIS FORM IN TRIPLICATE.
2. THE FIRST AID MEDICAL OFFICER WILL SEND ONE COPY OF THE FORM TO THE HOSPITAL.ONE COPY TO THE DGM(SAFETY) AND THE OTHER TO THE CONTRACTOR

ANNEXURE 4: FORM FOR FATAL ACCIDENT

ROURKELA STEEL PLANT
REPORTED:"FATAL ACCIDENT"
(CONTRACTOR'S EMPLOYEE)

1. NAME OF THE CONTRACTOR:_____
2. NAME OF THE DECEASED PERSON_____
3. TRADE_____GATE PASS NO_____
4. DATE AND TIME OF ACCIDENT_____
5. SHIFT_____DEPARTMENT_____
6. LOCATION_____
7. EYE WITNESS : 1._____2._____
8. PERSONS APPRISED OF 1._____2._____
9. BRIEF ACCOUNT OF ACCIDENT

SIGNETURE OF THE SUPERVISOR
DATE_____

ANNEXURE 5: PENAL PROVISION FOR SAFETY VIOLATION

The contractor shall also be liable for penalty for violation of safety provisions/ requirement.

1. In case of minor violation - deduction /recovery of Rs. 3000/- (Three thousand) from his dues.

2. In case of major violation with or without injury/disability - deduction or recovery or Rs. 10000/- (Ten thousand) from his dues.

3. In case of major violation resulting in permanent disability/ death of any person - banning of business dealing with RSP or deduction of Rs.1,00,000 (One lakh) from his dues or both.

a) The decision of the authority as to nature of violation shall be final.

b) The above amount shall be recovered from his bill/security deposit/earnest money deposit.

ANNEXURE 6: REMEDIAL PROVISIONS UNDER GM (MARKETING)

REF: CIRCULAR MM(Mktg)A & D / IA/03-04/DT:04/06/2003

PROCEDURE TO BE FOLLOWED FOR DISMANTLING OF IDLE ASSETS

Sl. No.	PROCEDURES	ACTION BY
1.	Necessary safety clauses as agreed in terms and conditions of tender should be incorporated in the sale order.	Marketing Deptt.
2.	After receiving the gate passes the employees will be given safety training by the Safety Engineering Department.	Safety Engg Deptt.
3	The comprehensive safety protocol to be prepared involving all concerned agencies and approval from GM concerned to be obtained. It should be strictly followed.	Concerned Deptt.
4.	No employee should be engaged in the job without undergoing safety training by Safety Engg. Dept.	
	Safety training application to be forwarded to the safety department as per procedure	Mktg. Dept.
	Safety training to be imparted to the employees	Safety Dept.
5	A separately designated safety supervisor should be employed by the purchaser to co-ordinate concerned agencies during dismantling job. He should be responsible for continuous safety supervision.	Mktg. Dept.
6.	Daily site clearance to be given by dept. technical officer of the owner department before starting of the job in writing.	Concerned Dept.
7.	Regular site inspection will be done for identifying unsafe conditions/unsafe act or any other safety violation.	Concerned Dept./ Safety
8.	Safety violations will be communicated on regular basis to marketing dept. for necessary action.	Safety Dept.

ANNEXURE 8 : SPECIMEN OF HEIGHT PASS

ROURKELA STEEL PLANT

SAFETY ENGINEERING DEPARTMENT

Photo of issuing authority with seal

NO DATED

This is to certify that the under mentioned person is permitted to work at height.

NAME:

FATHERS NAME:

AGE:

VALIDITY UPTO:

SIGNATURE /LEFT THUMB IMPRESSION OF WORKER	SIGNATURE OF AUTHORIZED EXECUTIVE OF SED

NAME & SEAL

STEEL AUTHORITY OF INDIA LIMITED
ROURKELA STEEL PLANT
ROURKELA

Ref. No. PL/CLC(P)/347 Date: 09/02/2004

C I R C U L A R

1.0 Further to the Notification No. 55/2002. to 137/2002 dated 29.12.2001 with regard to fixing of minimum wages for unskilled, semi-skilled, skilled and high-skilled categories, a fresh notification No.25M(6)A-26/2003/20123, dated 27.11.2003 has been issued by Labour Commissioner, Orissa. As notified, a special allowance called Variable Dearness Allowance shall be payable @ Rs.2.50 per day. This is in addition to the minimum rate of wages notified vide Labour & Employment Department on 29.12.2001.

2.0 In accordance with the above, the present rate of minimum wages is revised to Rs.52.50 for unskilled, Rs.62.50 for semi-skilled, Rs.72.50 for skilled and Rs.82.50 for high-skilled worker per day w.e.f. 01.01.2004.

3.0 Accordingly, the contract labour engaged by the Contractors in construction, repair and maintenance of roads and buildings outside the plant premises shall get wages as per the minimum wages prescribed at 2.0 above.

4.0 The Contractors engaged in construction, repair and maintenance of roads and buildings outside the plant premises may be directed to pay accordingly to their workers as per the revised rates w.e.f. 01.01.2004.

5.0 However, the present rates at which the contract labour engaged inside the Plant are being paid (which is higher than the present prescribed minimum wages) shall remain unaltered.

Sd\-
dated:09.02.2004

(S. K. HOTA)
Chief Personnel Manager(CLC)

STEEL AUTHORITY OF INDIA LIMITED
ROURKELA STEEL PLANT
ROURKELA

Ref.No.PL/CLC(P)/23 Dated:07.01.1999

CIRCULAR

1.0 Pursuant to item No.2.0 of the Tripartite settlement dated 06.01.96 signed between the contractors engaged in Rourkela Steel Plant, Rourkela and their workmen represented by Rourkela Shramik Sangh, Rourkela the revised dearness allowance in respect of contract Labour w.e.f 01.01.99 work out as detailed here-under.

1.1 The average All India Consumer Price Index for the half-yearly period ending on 30.04.98 was 1863 (Base: 1960 = 100). The average AICIP for industrial workers for the half-yearly period May'98 to oct'90 stands at 2026. As provided in the settlement the increase in variable Dearness allowance w.e.f. 01.01.99 will be (2026-1863) x Rs. 1.50 = Rs. 244.50 (Rupees Tow hundred forty-four and paise fifty only).

1.2 Accordingly, with effect from 01.01.99, the workers employed by the contractors of RSP and Fertilizer Plant (excluding those engaged in Construction, repair and maintenance of roads and buildings outside the Plant Premises) shall get minim um wages as under:

Sl. No	Contract Labour engaged in	Wages (in Rupees)				Per day inclusive of DA (In Rupees	Wages inclusive of DA per day (in Rs.) for employment less than a week
		Basic pay	Fixed DA	Variable DA	Total		
A	Jobs covered in Cl.` 1.1.1 of the settlement (Contract labour employed by the contractors in RSP including F.P. excluding those covered under Cl.1.2.1 and 6.3)	1700/-	368/-	733.50	2801.50	93.38	108.94
B.	Jobs covered in Cl.1.2.1of the settlement (Contract labour engaged by contractors in construction & maintenance of roads and buildings within Plant premises)	1670/-	368/-	733.50	2771.50	92.38	107.78

1.3 The House Rent Allowance at the rate of 5% of wages earned i.e. Basic Pay + DA will be paid to the contractors' workers covered under clause A and B above.

1.4 The Basic Pay, Dearness Allowance and House Rent Allowance mentioned in Para 1.2 and 1.3 above will also be applicable w.e.f. 01.01.99 to the Piece Rated Workers engaged by the Contractors.

1.5 The increase in variable Dearness Allowance of Rs.244.50 (Rupees Two hundred forty four and Paise fifty only) and the corresponding increase in House Rent Allowance at the rate of 5% will also be applicable to the contractors' workers as at 'A' and 'B' of Para 1.2 above, who are getting wages at different rates higher than the minimum wages.

2.0 Since the above is emerging out of the settlement of the contractors of Rourkela Steel Plant the contractors are required to pay accordingly to their workers as per the revised rates w.e.f. 01.01.99 and should not make any deviation.

3.0 Heads of Departments are requested to ensure that the provisions of this Circular are adhered to in future at the time of invitation of tenders making contractors liability clear in this regard.

4.0 This is for favour of information of all concerned.

Sd/-
(S.K. NAYAK)
SR. MANAGER
(PL) CLC&P

STEEL AUTHORITY OF INDIA

ROURKELA STEEL PLANT

ROURKELA

INTER OFFICE MEMO

REF. NO. PL/CLC(P)/835 DATE: 01/06/2011

It has been decided that Contractors' workmen will be entiteled to get @ RS. 25/- per day as special allowance w.e.f 01/06/2011.

Accordingly,the contractors may be adviced to pay in the form of Special Alllowance @ Rs. 25/- per day on actual attendance w.r.f 01/06/2011.This allowance will be set off against any future rationalization/ revision of wages.

ESI contribution is payable on the special allowance.

(S.K.PANDA)

AGM (PERSONNEL-CLC)