TENDER DOCUMENT

TENDER SPECIFICATION No : **BAP : ERN : RSP : SINTER : ESP : MECH :C : 237**
DATED : 17.10.2013

NAME OF WORK:

ERECTION AND COMMISSIONING WORKS (MECHANICAL) FOR REPLACEMENT OF PROCESS ELECTROSTATIC PRECIPITATOR (ESP), INVOLVING HANDLING AT SITE STORES / STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING COMPONENTS, ERECTION, TESTING AND COMMISSIONING OF MECHANICAL 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 : MECH : C : 237**

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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 (Heavy Lift Mobile cranes/ Tower Cranes/ other cranes, etc.), Trucks / Trailers / Tractors, Hoists, Derricks with winches, cutting and welding machines, 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.
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. **Special tools that are envisaged to be provided by BHEL are given in Annexure-VI**.

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 mobilise 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 : MECH : C : 237**
   DATED : 17.10.2013
2. **NAME OF THE WORK** :

   ERECTION AND COMMISSIONING WORKS (MECHANICAL) FOR REPLACEMENT OF PROCESS ELECTROSTATIC PRECIPITATOR (ESP), INVOLVING HANDLING AT SITE STORES / STORAGE YARD, TRANSPORTATION TO SITE OF WORK, DISMANTLING OF EXISTING COMPONENTS, ERECTION, TESTING AND COMMISSIONING OF MECHANICAL 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. 2,00,000/-** (Rupees Two 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.	SALE OF TENDER DOCUMENTS	**18.10.2013 To 09.11.2013**
b.	DATE & TIME OF PRE- BID MEETING	**30.10.13 at 10.00 Hrs.**
c.	START DATE & TIME FOR BID SUBMISSION	**31.10.2013 at 10.00 Hrs.**
d.	DUE DATE & TIME FOR BID SUMBISSION	**09.11.2013 at 14.30 Hrs**.
e.	DATE & TIME OF OPENING OF TECHNICAL BID	**09.11.2013 at 15.00 Hrs.**

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

5. **PRE BID MEETING :** Pre-bid meeting will be held on the mentioned date at the office of THE DY. GENERAL MANAGER, ERECTION SERVICES, BHEL Ranipet.

NOTICE INVITING TENDER

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.

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" 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 of mechanical components and Commissioning of atleast one ESP for any of the BHEL units in the last seven years as on 30.09.2013.

(OR)

Bidder must have successfully executed Erection of mechanical components and Commissioning of ESP in at least one unit of 15 MW or higher rated thermal power plant in the last seven years as on 30.09.2013.

(OR)

Bidder must have successfully executed Erection of mechanical components and Commissioning work in industries like steel plants, Refineries, Cement plants, Thermal Power plants, Captive power plants etc., which includes erection of atleast one ESP, in the last seven years as on 30.09.2013 as follows.

(i) One work of atleast Rs.238.00 lakhs in a single work order.
(ii) Two works of atleast Rs.149.00 Lakhs each..
(iii) Three works of atleast Rs.119.00 Lakhs each.

(AND)

NOTICE INVITING TENDER

b. The contractor must have achieved minimum average annual financial turn over of **Rs.89.00 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 of ESP mentioned in 12.0 above shall also include Retrofitting / revamping works mentioned above (12.a) shall mean works involving replacement of entire internals of fields in an ESP, encompassing all the Collecting Electrodes (C.E), C.E supporting frames, Emitting Electrodes (E.E), E.E frames, Rapping systems etc. by opening out the complete inner and outer roofs. Normal O & M works/ Services, replacement of limited quantities of spares in the fields and minor rectification works shall not be considered as Erection /Retrofitting / Revamping of ESP.

14. **Supporting documents for QR:**
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 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 seven 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.

NOTICE INVITING TENDER

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.

26. **REVERSE AUCTION (RA)**: BHEL intents to finalise this tender enquiry through the process of Reverse Auction (English Reverse (No Ties) – ON LINE BIDDING on INTERNET) among the bidders who are found to be qualified on the basis of technical bid. However, BHEL may at their discretion decide to finalise the tender through conventional sealed envelope bid opening process. In such a case, the sealed envelope price bids of the techno-commercially accepted bidders shall be opened along with impact price bid, if any, and successful bidder decided. 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 Grand 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 Specification & scope of work
    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 heavy erection jobs with welding gets 10 marks. Anything less gets marks proportionate to no. of years of experience	List of works & Completion certificate	10	
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** More than 3 similar ESP retrofits gets 15 marks anything less gets proportionate marks	Completion letter/certificate	15	
4	**Past Safety Records & Safety Plan Proposed** Reasonable and complete Plan gets 10 marks. Else proportionate	Plan/Availability of safety officer	5	
5	**Dismantling and Erection Methodology** If 5 sections covering (a) correct choice of type of crane, (b) correct positioning of crane, (c)reasonable productivities & schedule, (d) feasible methodologies to be followed, (e) sketches-- are all there 20 marks; else proportionate marks	Verifiable sections in the bid	20	
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 mobilised** If cranes, derricks, welding machines, trailers, winches are covered with appropriate capacity and numbers including source for procurement 15 marks; else proportionate marks	Equipment list	15	
8	**Company Organisation and Appropriate Project Staff Organisaion** If appropriate no. of staff with 10 years similar erection experience are committed 10 marks; else proportionate	Staff list	5	
9	**Appropriate Skilled Labour committed to be mobilized** If appropriate no. of skilled labour with similar erection experience including welders are committed 5 marks; else proportionate	Letters/ Certificate	3	
10	**Status reporting and Quality Control** Appropriate Quality control procedures for different works and appropriate project reporting system	Quality document	2	
11	**Bid Appreciation / Site visit** If site problems are brought out and site visit has been made full marks; else proportionate	Proof of visit	5	
12	**Completeness of bid submission** If all stipulated documents are submitted full 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' / 'UNQUOTED' against each item. **The Taxes applicable 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:MECH:C:237

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 Dusty Steel 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:MECH:C:237

1.0 SCOPE OF WORK : The scope of work involved in replacement of 02 nos. Process Electrostatic Precipitators (ESP) includes Dismantling (including electrical components) of existing ESP to the extent required, Handling at BHEL/Customer storage yard and shifting of new components / materials of ESP to site of erection, Erection, testing and commissioning of **ESP in Sinter Plant – 1, Rourkela Steel plant (RSP), Rourkela** using contractor's own tools and plants, cranes, material handling equipment, consumables, manpower etc.

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

a. Dismantling of existing ESP to the extent required, including all electrical components.
b. Erection & commissioning of new mechanical components of ESP (BHEL supplied).
c. Erection of new Dust Conveying system for additional fields and integration to existing 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.

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

2.1 **Hiring of SUITABLE HEAVY LIFT MOBILE / TOWER CRANES is included in the contractors scope of work. The bidder has to visit site and ensure suitability of crane.**

2.2 **The number of the cranes proposed to be deployed and their details shall be submitted along with the offer.**

2.3 Replacement of the **complete insulation** of the existing ESP, including the cladding sheet etc. is in the scope of work.

2.4 In order to install the extended additional fields the following works have also to be carried out. These shall form part of the work.

a. Rerouting of a set of cables going to ID Fan (in Unit-2 only – in the area of extended field).

2.5 Dismantling of existing High Voltage Rectifier (HVR) Transformers and Erection & alignment of new HVRs shall be in the scope the contractor. However, testing and commissioning shall be carried out by other agencies.

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

2.7 Any dismantling and re-erection of existing material/s that is required to complete the specified work shall form part of the work and shall be carried out at no extra cost to BHEL.

2.8 Removal and refitting / relaying of existing over-ground Air & Water lines, if any, which are required to enable dismantling & erection activities shall be in the scope of contractor.

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

2.10 Area illumination for enabling the replacement work shall be in the scope of contractor.

2.11 All the ESP materials & components 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.

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

2.13 Adequate quantity of winches, steel ropes, pulleys, scaffoldings etc shall be arranged by the contractor for safe dismantling and erection.

2.14 The scope of work also includes shifting and proper storage of dismantled materials at storage yard. The dismantled materials should be segregated and unusable materials should be devoluted to M/s RSP scrap yard (at around 5.0 km distance).

2.15 Being a replacement / 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.

2.16 After completion of the 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.

2.17 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.

2.18 The contractor shall supply manpower and consumables to carry out the required tests on the equipment such as **Air-in leakage Test** (using air blower provided by BHEL), Gas tightness test by smoke test method or kerosene method and other tests such as **Gas Distribution test, Performance Guarantee test etc**., to be specified by the Resident Engineer, BHEL at free of cost. Contractor's quoted rate shall include blanking of hopper, funnel and ducts to conduct air-in leakage test, smoke test etc. and all other contingencies such as checking of coupling alignments, various clearances between stator and rotor components, bearing clearing, trial runs etc.

2.19 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.

3.0 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.

4.0 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.

5.0 SITE LOCATION : Please see project information sheet.

6.0 TOOLS & TACKLES : It may be noted that **BHEL will not provide** any cranes , trailors / trucks / tractors, tools and plants for execution of the work. All required resources including derricks, winches, wire ropes and tackles, etc are to be arranged by the contractor only. Higher capacity crane/s required for completion revamping work within the stipulated period shall be arranged by the contractor at no extra cost to BHEL. The quoted the rate shall consider all the eventualities that may arise during such works.

7.0 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.

8.0 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.

9.0 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.

9.1 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..

9.2 **ELECTRICAL CONTRACTORS LICENSE** : Not applicable.

10.0 APPROVAL FROM CIEG : Not Applicable

11.0 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.

12.0 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.

13.0 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.

14.0 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

15.0 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".

16.0 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).

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

18.0 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.

18.1 DETAILS OF PAYMENT TERMS FOR ERECTION & COMMISSIONG: The payment terms shall be as per clause 3.1.27 & 3.2.3. of Special Conditions of Contract for Electrical works (SCC - Section-III).

18.2 DETAILS OF PAYMENT TERMS FOR SUPPLY PART : Not applicable.

19.0 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.

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

19.2 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.

20.0 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. Also, refer Annexure-V & VI.

21.0 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.

22.0 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.

23.0 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.

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

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

26.0 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. List of Major Tools & tackles to be deployed - (Annexure- V)
f. List of Special Tools to be supplied by BHEL - (Annexure- VI)
g. General terms and conditions of work (ES:F:010)
h. Special Conditions of Contract for ESP works (BAP:ERN:SPN:MECH:ESP:01–SECTION-III & IV)
i. Special Conditions of Contract – (Section –V and VI)
j. General Terms and Conditions for REVERSE AUCTION (SECTION-VII)
k. Statutory requirement of contract (ES:F:009)
l. Appendix-IA & IB, II, III and IV.
m. Safety Code for Contractors at Rourkela Steel Plant(RSP)
n. Circular of M/s RSP on payment of Special Allowances.
o. Drawings for Tender purpose
    i. Layout Drawing of ESPs.
    ii. GA Drawings for two ESPs.
    iii. Scheme of Dust conveyor System modification

ANNEXURE – II

TENDER SPECIFICATION No. : BAP:ERN:RSP:SINTER:ESP:MECH:C:237

TENTATIVE SCHEDULE OF ACTIVITIES FOR REPLACEMENT OF PROCESS ESPs

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	November 2013	December 2013	January 2014	February 2014	March 2014	April 2014
01.	Preassembly of ESP components for Unit-2 ESP.	20 Days						
02.	E & C for replacement of ESP in Unit-2 during Shutdown (including Testing and commissioning).	40 Days						
03.	Preassembly of ESP components for Unit-1 ESP.	30 Days						
04.	E & C for replacement of ESP in Unit-1 during Shutdown (including Testing and commissioning).	40 Days						
05.	Preliminary & Final Acceptance Test	20 Days						

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 **Section-I : 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).

Contd…

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. 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:MECH:C:237

TECHNICAL SPECIFICATION & SCOPE OF WORK

SECTION -1

1. INTRODUCTION

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 REPLACEMENT / 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 and Rapper control panels in the First floor. The ESP control room will be suitably modified to accommodate new ESP Switch gear panels and First floor will be modified to accommodate the new EC panels and Rapper Control panel.

2.4 The existing ESP internals, casing wall, upper column structure, funnels and roof will be completely dismantled. However the existing supporting structures, hoppers and casing are retained.

3.0 PRE-SHUT DOWN WORKS

3.1 The scope of Pre-shutdown activities shall include, but not limited to, the following.

3.2 All the works required to be carried out for successful completion of replacement of ESP in a shutdown of 45 days is in the scope of contractor. Hence, pre-assembly of ESP components to the maximum possible extent is to be carried out.

3.3 Establish all site facilities like shed, electrical power etc. required for the entire work.

3.4 Mobilise all tools & tackles required.

3.5 Pre-assembly of Upper columns and bracings (frames), Inlet & Outlet Funnels, Casing walls, emitting frames etc.

3.6 Providing scaffolding for dismantling of entire insulation of ESP.

3.7 Fabricate temporary working platforms, supports etc., that are required to be used during shutdown work.

3.8 Rerouting of a set of cables going to ID Fan (in Unit-2 only – for a short length of extended field only).

4.0 SCOPE OF DISMANTLING WORK

4.1 All the dismantling, including all electrical components, required to complete the replacement of ESP and successful commissioning is in the scope of contractor. On Shutdown of unit and clearance from BHEL, the contractor shall arrange to clean the ESP internals and have hoppers emptied.

4.2 The scope of dismantling of existing ESPs shall include, but not limited to, the following.

4.3 Slide supports / bearings (07 nos. per ESP) above the support columns.

4.4 Insulation of the entire ESP, including the existing Hoppers.

4.5 Electrical Cables, Cable trays, Supports, Junction Boxes, Start Stop PBS, Earth flats etc.

4.6 Switch Gear Panels, Electronic Control Panels, Rapper panels, cables etc. in Control Room.

4.7 Illumination system on platforms and outer roof area of ESP.

4.8 Entire Casing wall above the slide bearings.

4.9 Inlet and Outlet funnels.

4.10 Inlet & Outlet Gas distribution system.

4.11 Part of inlet & outlet ducts including expansion joints.

4.12 Upper support columns and bracing structures, roof beams, girders above the collecting rapping platform.

4.13 All materials on the Outer roof of ESP including HVR Transformers, Penthouse, Hoists etc.

4.14 Inner roof and insulation.

4.15 All internals of ESP like collecting electrodes, emitting electrodes, shock bars, rapping systems, deflection plates etc.

4.16 Outlet duct support structure - to the extent required.

5.0 **SCOPE OF ERECTION**

5.1 The scope of erection for replacement of ESPs shall include, but not limited to, the following materials supplied by BHEL. The erection of ESP and Dust Conveyor System shall be carried out as per the drawings & specifications of BHEL and instructions of BHEL Engineer at site. Log sheets as per Field Quality Assurance Plans (FQP) shall be maintained.

5.2 Scope of Erection of ESP

5.2.1 New supporting structures for one additional extended field.

5.2.2 Slide supports / bearings for both existing and new fields (10 Nos. per ESP).

5.2.3 Fabrication and erection of temporary arrangement to support existing hoppers for replacement of existing slide supports / bearing.

5.2.4 Strengthening of existing lower columns by welding additional plates / structural members.

5.2.5 Replacement / rectification of existing bracings of lower columns.

5.2.6 Upper column structure and connected bracings.

5.2.7 Casings wall consisting of prefabricated wall panels fabricated with plates of adequate thickness reinforced with stiffeners to withstand the negative pressure.

5.2.8 Access / inspection doors in casing wall and new Hoppers.

5.2.9 Collecting electrode system consisting of supporting arrangement, collecting electrodes fabricated from roll-formed sheets of steel, rapping mechanism including shock bar, rapping shafts, angularly displaced tumbling hammers, drive arrangement and geared motor.

5.2.10 High voltage emitting system consisting of frame work supported from support insulators, emitting electrodes and rapping mechanism including rapping shafts, shaft insulators, angularly displaced tumbling hammers, drive arrangements and geared motor.

5.2.11 Set of insulator housings complete with HT ducting for connecting HVR transformer. The insulator compartments are of double walled construction with thermal insulation and are provided with access doors for inspection / service of support insulators.

5.2.12 Sets of Insulators - each set consisting of four support insulators per field, one shaft insulator for each emitting rapping mechanism and one bushing insulator for direct connecting to the transformer/rectifier.

5.2.13 Set of ESP outer roof fabricated from chequered plates of adequate thickness forming a inspection floor on top of ESP casing.

5.2.14 Set of High Voltage Rectifier (HVR)Transformers on the outer roof of ESP (01 No. per Field).

5.2.15 HVR Transformer handling structure consisting of columns, monorail etc.

5.2.16 Set of Electrically operated Hoist for lifting and handling (01 no. per ESP of capacity 3MT) for the HVR Transformers rectifier sets mounted on the precipitator roof.

5.2.17 Two new Hoppers per ESP for extended fields, including outlet flanges, poke holes, access doors and walkways beneath the hopper. The walk ways beneath the new hoppers is to be suitably connected to existing walkways below the existing hoppers.

5.2.18 Erection of Patch plates, if required, for rectification of existing hoppers.

5.2.19 Set of inlet and outlet funnels complete with splitters, guide vanes etc.

5.2.20 Modification of ESP inlet and outlet ducting with expansion joints and their supports to suit the new ESP inlet and outlet funnels.

5.2.21 Set of Gas distribution (GD) system consisting of perforated plate screen arrangement at the inlet, a plain screen arrangement at the outlet and rapping mechanism at inlet.

5.2.22 Deflection / cover plates for hopper, emitting system, GD system etc.

5.2.23 Outlet Duct Support structure. Work includes modification of the existing structures.

5.2.24 Stairs and walkways for the ESP.

5.2.25 Thermal insulation for the precipitator walls, inner roof panels, all hoppers (both old & new), funnels etc. with 75 mm thick mineral wool and cladding material (0.71 mm thick Aluminium sheet). Work includes fixing of materials like studs, retainers, etc.

5.2.26 Set of test connections / pockets in ducts for the measurement of dust concentration.

5.2.27 Access & approach platform for PG test adapters, Opacity meters etc.

5.2.28 Cutting of Hopper plates to provide provision for fluidizing pads.

5.3 **Scope of Erection Dust Conveyor System :**

5.3.1 New drag chain conveyors for extended fields.

5.3.2 Fabrication and erection of supports for chain conveyor system.

5.3.3 DCDA valves.

5.3.4 Expansion bellows.

5.3.5 Inlet chute with matching flanges.

5.3.6 Adapter, spool pieces etc. to accommodate the expansion joints and DCDA valves.

5.3.7 Drive arrangement consisting of Motor, Gear Box, Coupling, Transmission chain and sprocket, Chain guard and drive base frame and other accessories for conveyor.

5.3.8 Dismantling of the existing Chain Conveyor components to the extent required to integrate the old and new systems.

5.3.9 Replacement / realignment of existing drives as per site requirement.

5.3.10 Rectification works that may be required in existing dust conveying system under the ESP.

5.3.11 All works required to integrate the new chain conveyors to the existing system and ensure the entire system functions satisfactorily.

5.4 **TESTING**

5.4.1 The scope of Testing of ESPs shall include, but not limited to, the following.

5.4.2 Blanking the ESP openings and conducting Air-in Leakage Test. Test equipment will be arranged by BHEL.

5.4.3 Manpower supply and assistance for conducting Gas Distribution test and Performance guarantee test at site. Test equipment will be arranged by BHEL.

6.0 **SCOPE OF REUSE OF EXISTING MATERIALS / AREA**

6.1 Some of the existing ESP components / materials are proposed to be reused. Hence the contractor has to ensure proper segregation / tagging and safe custody of the materials identified for reuse.

6.2 The scope of reuse of existing ESP materials shall include, but not limited to, the following.

6.3 Stairs, galleries & platforms.

7.0 **MAXIMUM WEIGHT OF A SINGLE COMPONENT TO BE HANDLED**

7.1 Max. Weight of one Transverse Roof Beam is 2.50 MT.

7.2 Max. weight of a new single Casing Wall Panel of new ESP is 4.00 MT.

7.3 Max. weight of one assembled Inlet Funnel is 18.50 MT (includes splitters of 3.50 MT) and one assembled Outlet Funnel is 12.50 MT.

7.4 Max. Weight of upper column Outlet Frame Assembly consisting of two columns & connected bracings, gable etc is 14.00 MT and Inlet Frame Assembly consisting of two columns & connected bracings, gable etc is 12.00 MT.

8.0 **GENERAL ARRANGEMENT & LAYOUT**

8.1 The Layout and general arrangement of ESPs are as per drawings attached with this Tender. These are for Tender reference purposes only and are subject to changes during execution / construction.

8.2 The scheme for dust conveying system of additional fields and a typical drag chain conveyor system is given for reference only.

9.0 **EXCLUSIONS**

9.1 Arranging equipment for Air-in Leakage test, GD Test and Performance guarantee test.

9.2 Electrical works of ESP – erection and commissioning of electrical components like Switch Gear Panels, EC Panels, Cables, earthing, cable trays, supports etc.

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SECTION -2

2.0 Bidders Scope of Work

2.1 General

2.1.1 This specification covers the dismantling and erection of structural steelwork and equipment including receiving and taking delivery of fabricated structural steel materials, equipment and other materials arriving at site, and/or from Owner's site stores or stores yard, installing in position, painting etc,, complete as per drawings, this specification and other provision of the contract. All the works shall in the scope of work shall be carried at bidders own cost.

2.1.2 **Work to be provided by the contractor**

1. The bidder shall provide all construction and transport equipment, tools, tackle, consumables, materials, labour and supervision required for unloading / loading, storing, dismantling and erection of structural steelwork and equipment. If necessary suitable temporary approach roads, culverts or slabs over trenches shall be built for transportation and positioning of cranes.

2. Adequate scaffolding materials have to be arranged to complete the insulation work within the ESP shutdown period.

3. Checking centre lines, levels of all foundation blocks including checking line, level, position and plumb of all bolts and pockets. Any defect observed in the foundation shall be brought to the notice of the Engineer. The Contractor shall fully satisfy himself regarding the correctness of the foundations before installing the fabricated steel structures on the foundation blocks.

4. Aligning, plumbing, leveling, bolting, welding and securely fixing the fabricated steel structures and equipment in accordance with the drawings or as directed by the Engineer.

5. Painting as per specification / instructions of exposed surfaces of ESP structure.

6. All minor modifications of the fabricated steel structures as directed by the Engineer including, but not limited, to the following:

   a. Removal of bends, kinks, twists etc. for parts damaged during transport and handling.

   b. Cutting, chipping, filling, grinding etc. if required for preparation and finishing of site connections.

   c. Reaming of holes for use of higher size bolt if required.

   d. Welding of connections in place of bolting for which holes are either not drilled at all or wrongly drilled during fabrication. Welding in place bolting will be permitted only at the discretion of the Engineer.

   e. Carry out tests in accordance with this Specification if directed.

2.2 PLANT & EQUIPMENT REQUIREMENTS (TOWER CRANES & MOBILE CRANES)

2.2.1 The successful completion of dismantling and erection work depends on the right selection of hoisting equipment. The selection of the hoisting equipment is governed by the lifting load, height, working radii and working spaces available around the ESP. Dynamic factors like wind load, swinging load, hoisting speed and stopping the hoist also impact the selection of hoisting equipment. A partial factor of safety with respect to the tipping considering the dynamic factors has to be introduced and the rated load of the lifting equipment shall not be exceeded. Selection of crane shall be done after analyzing the maximum weights of ESP components to be lifted, ESP layout, crane diagram, range diagram and load chart

2.2.2 The bidder may either use Heavy lift Mobile cranes or Tower cranes as major lifting equipment. The details are to be provided along with the Technical bid.

2.2.3 Some of advantages of using Tower cranes are listed below for reference and consideration by bidder.

2.2.4 Tower cranes are ideal hoisting equipment for ESP dismantling and erection work considering the following factors:

a. Limited working spaces with many constraints for marching / swinging mobile cranes

b. operator visibility with better safety and better productivity

c. Larger working radii and no relocation required

d. Higher lifting height,

e. Requirement of lifting lower weights (5MT)

f. Repeated cycle of operations

g. Highly cost effective for required duty

2.2.5 The selection of tower crane shall be done with considerable planning because the crane is a fixed installation on the site for all the major dismantling and erection activities. From its fixed position the tower crane has to cover all points from which loads are to be lifted and reach the locations where the loads are to be erected. Following points shall be considered while selecting a tower crane:

- Weight, dimensions and lifting radii of the loads
- Maximum free standing height of the tower crane
- Maximum braced height of the tower crane
- Maximum jib length, counter jib length and tip load load capacity
- Tower climbing arrangement
- Weight of tower crane assembly, base ballast and counter jib ballast
- Foundation requirement if base ballast is not possible
- Open spaces, tall structures, trenches etc around ESP
- Mobile crane for erecting the tower crane
- Hoisting speed, Trolley speed, slewing speed
- Length of cable the hoist drum can carry

2.2.6 Considering the above factors refer the rated load capacity chart of tower cranes for selection, which are provided by the manufacturer or hirer. The chart contains the information like Tower crane model no., load diagrams, tower crane diagrams etc. Suitable partial factor of safety needs to be provided considering the dynamic factors during erection at site.

2.2.7 **The suitability and adequacy of all other mobile cranes, erection tools, plant and equipment proposed shall be efficient, dependable, in good working condition and shall have the approval of the Engineer. The type and capacity of tower crane, mobile crane and all plant and equipment proposed to be used shall be mentioned and shall have its test certificates and calibration certificates.**

2.3 **METHOD AND SEQUENCE**

2.3.1 The contractor shall schedule and develop detailed methods and sequence of loading, unloading, storing, pre-assembly, and dismantling and erection work which shall have the

prior approval of the Engineer. The contractor shall plan for most economical method and sequence with the drawings and specifications and such information shall be furnished to BHEL prior to the execution of the Contract.

2.4 **CRANE POSITIONING & LIFTING DETAILS**

2.4.1 Detailed crane position and location, particularly adjacent to structure elements, such as ash handling silo, boiler, drains, pipe racks, chimney, etc., with details of load distribution on wheels and outriggers throughout each lift shall have the approval of Engineer.

2.4.2 The method shall provide the details of lifting of critical ESP components like Casing panels, Outlet gates, roof beams, emitting frame, collecting electrodes, duct gates, inlet / outlet funnel, GD screens, hopper etc., with vertical forces at the lifting points and on the lifting devices.

3.0 **DIMENSIONAL CHECK**

3.1 Before taking possession and erecting the ESP components, the Contractor shall verify that the dimensions of the components, the layout of the ESP supporting structure, its elevations and the location of the anchor bolts are in accordance with the Drawings. All discrepancies discovered by the Contractor shall be brought immediately to the attention of the Engineer.

3.2 It is essential that the ESP components be erected with utmost attention being given to positioning, alignment, and elevation.

3.3 The BHEL Engineer shall approve of all proposed methods of jacking, loading, winching, etc. prior to the work being undertaken.

3.4 Unloading, loading, dismantling and erection of ESP shall be under the direction of a qualified erection Engineer of the contractor.

4.0 **TEMPORARY STRESSES**

4.1 The Contractor shall assume full responsibility for ensuring that all component stresses are within permissible limits at all stages of the erection work. The Contractor shall provide all necessary additional bracing or other measures required to ensure that the erection procedures do not overstress any temporary or permanent member or component at any stage of the Work.

4.2 Temporary bracing : Unless adequate bracing is included as a part of the permanent framing, the erector during erection shall install, free of cost to BHEL, temporary guys and bracings where needed to secure the framing against loads such as wind or seismic forces comparable in intensity to that for which the structure has been designed, acting upon exposed framing as well as loads due to erection equipment and erection operations. If additional temporary guys are required to resist wind or seismic forces acting upon components of the finished structure installed by others during the course of the erection of the steel framing, arrangement for their installation by the contractor shall be made free of cost to BHEL

4.3 The responsibility of the Contractor in respect of temporary bracings and guys shall cease when the structural steel is once located, leveled, aligned and welded within the tolerances permitted under the specification and guyed and braced to the satisfaction of the Engineer.

5.0 **TEMPORARY STAGING AND PLATFORMS**

5.1 The contractor shall provide adequate staging with platforms for a minimum of 2 ESPs during dismantling and erection works. Also additional staging may be required if strengthening of columns are necessary as per design. Suitable staging shall be provided for workmen for all works that cannot safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When a ladder is used, an extra labour shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than 1 in 4 (1 horizontal 4 vertical).

5.2 Staging more than 12' above the ground floor, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise rewound at least 3' high above the floor or platform of staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such staging shall be so fastened as to prevent it from swaying from the structure.

5.3 Working platform, gangways and stairways should be so constructed that they should not sag unduly or unequally and if the height of the platform or the gangway or the stairway is more than 12', above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened

5.4 The staging and platform shall be approved by the Engineer prior to the fabrication and installation.

6.0 **SETTING OUT**

Positioning and leveling of all steelwork, plumbing of columns and placing of every component of ESP structure with accuracy shall be in accordance with the approved drawings and to the satisfaction of the Engineer. Concrete foundations, foundation bolts and grouting where required, shall be made by other agencies. The Contractor shall check the positions and levels of the foundation bolts, etc. before concreting and get them properly secured against disturbance during pouring operations. Contractor shall remain responsible for correct positioning No extra payment shall be made for this. Each tier of column shall be plumbed and maintained in a true vertical position subject to the limits of tolerance allowable as per drawing / FQP. No permanent field connections by bolting or welding shall be carried out until proper alignment and plumbing has been attained.

7.0 **WELDING**

7.1 All field assembly and welding shall be carried out in accordance with the requirements of the specification and drawings applicable to the project. Where the fabricated structural steel members have been delivered painted, the paint shall be removed before field welding for a distance of at least 50 mm on either side of the joints. IBR weld procedure to be adopted for steam lines, where required.

7.2 Welder's Qualification : For the welding work in contractor's scope of work and for the various type of welding works of erection, repair etc. only tested welder as approved by the Inspection Engineer or Engineer (after a test) shall be engaged. Only qualified welders are accepted for testing. Each welder must satisfy the job requirements in welding work or applicable code/standard. The welder may be allowed to work in other jobs of similar nature. The Inspection Engineer/Engineer has the power to disqualify any welder at any time without assigning any reasons whatsoever and this shall be binding on the contractor.

7.3 Welder qualification certificate issued to the welder shall be valid for one year subject to further renewal by Engineer In case, welder is found to be idle for a continuous period of 3 months or more, he may be asked by the Engineer for re-appearance of welder qualification test.

7.4 Before conducting welder test, the welder shall produce his past experience details and if found suitable, he may be considered for qualification test A welder shall be qualified only for the material and position and other conditions under which he performs the test. However, he may be allowed to work on other position also as permitted in the codes / standard.

8.0 **HOLES, CUTTING AND FITTING :** No cutting of sections, flanges, webs, cleats, rivets, bolts, welds etc., shall be done unless specifically approved and/or instructed by the Engineer. The erector shall not cut, drill or otherwise alter the work of other trades, or his own work to accommodate other trades, unless such work is clearly specified in the Contract or directed by the Engineer. Wherever such work is specified the Contractor shall obtain complete

information as to size, location and number of alterations prior to carrying out any work. The Contractor shall not be entitled for any payment on account of any such work.

9.0 **PAINTING AFTER ERECTION**

9.1 Field painting by the erection contractor shall only be done after the structure is erected, levelled, plumbed, aligned and grouted in its final position, tested and accepted by the Engineer. However, touch up painting, making good any damaged shop painting and completing shall be carried out by the erection Contractor free of cost to the Owner. The materials and specification for such painting in the field shall be in accordance with the requirements for the project.

9.2 Painting shall not be done in frosty or foggy weather or when humidity is such as to cause condensation on the surfaces to be painted. Before painting of steel, which is delivered unpainted, is commenced, all surfaces to be painted shall be dried and thoroughly cleaned from all loose scale and rust.

9.3 Bolts and fabricated steel members which are galvanized or otherwise treated and steel members to be encased in concrete shall not be painted.

9.4 The specification of paint, number of coats and the shades to be used shall be as specified or as directed by the BHEL Engineer at site.

10.0 **FINAL CLEANING UP :** Upon completion of erection and before final acceptance of the work by the Engineer, the Contractor shall remove free of cost all falsework, rubbish and all Temporary Works resulting in connection with the performance of his work.

11.0 **SAFETY MEASURES DURING DISMANTLING AND ERECTION** : The ESP is in an operational area, therefore, contractor and their employees shall observe all fire & safety regulations of the M/s RSP and shall so organise their work as not to interfere with the running of the plant in any manner whatsoever. Before starting any work, contractor shall apply one day ahead for fire & safety permit for excavation, electrical, gas/arc welding and cutting work to Engineer of work/works who in turn will arrange for such permits. The contractor shall make all the precautions given in the permit before starting of the work to the full satisfaction of the Engineer. On account of operational problem it is possible that the clearance and permit may get delayed for which the contractor shall not demand idle labour charges and no such claim will be entertained by BHEL. The safety measures to workmen and supervisors during all types dismantling and erection work (e.g., use of lifting appliances, slinging, welding, gas cutting, etc.) should be taken as per IS:7205. When any statutory provisions exist, the same shall be complied with in addition to the provisions contained in the above code. Safety barricade wherever necessary are to be put up at his own cost.

12.0 **PROJECT MANAGEMENT**

12.1 The successful completion of any retrofit job during shutdown depends on precise planning and execution. The contractor shall plan and sequence activities such that the project is completed on or ahead of schedule. The contractor shall develop schedule under the following work packages:

1. Site Preparatory Works
2. Pre-Shutdown Works
3. Shutdown Works
4. Post Shutdown Works

13.0 **SITE PREPARATORY WORKS:**

The site preparatory works shall involve, but not limited to, the following:

2. Mobilisation of labour, P&M and materials
3. Establishment of site office, labour camp, open storage yards, closed storage yards, local labour rest area and other amenities.

4. Obtaining local / statutory permits and licenses
5. Receipt of BHEL materials, documenting, storing and securing
6. Develop / strengthen road access for crane and trailor movements in storage area and in erection area

14.0 PRE-SHUTDOWN WORKS

The site Pre-shutdown works shall involve, but not limited to, the following:

1. Strengthening of existing ESP support columns (where required)
2. Coordination with the Civil contractor for additional ESP field column locations and levels.
3. Erection of new ESP columns and bracings to the extent feasible.
4. Erection of staging / scaffoldings around ESP.
5. Inspection of ESP columns, beams and components for dimensions as per drawing and site condition

15.0 SHUTDOWN WORKS:

15.1 The shutdown work shall be done for one ESP at a time. The shutdown duration for replacement of one ESP is 45 days which includes dismantling and erection of new components for the existing 03 fields, erection of 01 new field and other structures to complete as per drawing. The dismantling and erection works in one ESP shall involve, but not limited to, the following:

1. Water washing / Cleaning of ESP
2. Dismantling o f existing insulation of ESP and replacement with new materials.
3. Dismantling of existing ESP outer & inner roof, casing walls, funnels, GD screens and internals.
4. Dismantling of ESP electrical components.
5. Erection new mechanical components in the first 03 fields (including HVR Transformer).
6. Erection of new extended field of ESP.
7. Erection of Inlet & outlet funnel, ducts etc.
8. Completion of all alignments, trial runs and pre-commissioning tests as per Field Quality Plan.
9. Air leakage test
10. Gas Distribution test
11. Hooking up of retrofitted ESP and commissioning.
12. Shut down of the next ESP.

16.0 POST SHUTDOWN WORKS

The post shutdown works shall involve, but not limited to, the following:

1. Performance Guarantee test

17.0 SCHEDULE OF WORK

A detailed network schedule shall be developed by the contractor considering all scope of work within 15 days from the award of work and get approved from the Engineer. The schedule shall clearly indicate the Site preparatory works, Pre-Shutdown works, Shutdown works and post shutdown works. The schedule shall clearly indicate the shutdown start and complete of each ESP as milestones. Based on the agreed schedule, the contractor shall submit

his Schedule of plant & equipment, Schedule of project staff and Schedule of labour within 10 days from the submission of network schedule.

18.0 PROGRESS MONITORING & REPORTS

The contractor shall prepare the progress monitoring reports based on the formats given by BHEL and get approved from the Engineer. The progress monitoring shall be done on daily basis and shall include the physical progress of works, labour statistics, P&M status, and material issue status and safety statistics. The network schedule shall be updated as per the daily progress update. The Engineer shall organize the progress review meeting as and when required with the contractor. The contractor shall prepare revised catch-up programs for the progress delays or foreseen delays and get it approved from the Engineer. Progress reports shall include copies of photographs (hard & soft copies) as directed by BHEL Engineer at site. All the activities shall be at no extra cost to BHEL.

19.0 CODES AND STANDARDS

All work under this Specification shall, unless specified otherwise, conform to the latest revisions and/or replacements of the following or any other Indian Standard Specification and codes of Practice of equivalent:-

IS-800 : Code of Practice for use of structural steel in general building construction.

IS-456 : Code of Practice for plain or reinforced concrete.

IS-7205 : Safety Code for erection of Structural Steel work

IS-12843 : Tolerance for erection of Steel Structures.

ANNEXURE - V

LIST OF MAJOR TOOLS & TACKLES TO BE ARRANGED / DEPLOYED BY CONTRACTOR BEFORE COMMENCEMENT OF WORK.

This is only an indicative list of minimum quantities to be deployed at site. All the tools & tackles, equipment etc. that are required for completion of the work within the scheduled time period 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	Minimum Quantity to be deployed at site
01	Tyre Mounted Heavy Lift Mobile crane (120 / 150 MT capacity) **or** Tower Crane of suitable capacity (Details to be provided in the Tech-bid)	01 No.
02	Additional Mobile crane for erection (Capacity & Details to be provided in the Tech-bid)	01 No.
03	Lorry / Tractor Trailors	02 Nos.
04	Mobile crane (10/12/14 MT capacity)	02 Nos.
05	Welding Generator / Tranformers / Rectifiers with accessories	10 Sets.
06	Gas cutting sets	06 Sets
07	Chain Pulley blocks of various capacities	12 Nos.
08	Power winches of required capacities	03 Nos.
09	Grinding machine	02 Nos.
10	Portable Electrode Drying oven	06 Nos..
11	24 volt Transformer	02 Nos.
12	Power distribution Board	02 sets.
13	Switch board with extension wire	06 Nos.
14	Flood light fittings.	12 Nos.
15	Hand Lamps	12 Nos.
16.	WOODEN SLEEPERS	20 Nos.
17.	Derricks/ gin poles with mechanical winches, slings	01 No.
18.	Digital distance measuring instrument (Laser based)	01 No.
19.	Digital level measuring instrument	01 No.

ANNEXURE – VI

BHEL will provide the under listed Special Erection Tools only to the Contractor. These tools are to be returned to BHEL after completion of Erection works.

LIST OF SPECIAL ERECTION TOOLS WHICH WILL BE PROVIDED TO THE CONTRACTOR BY BHEL:

SL.NO.	Description
1.	HUCK BOLTING MACHINE WITH ACESSORIES
2.	AIR BLOWER,VENTURY ETC.,FOR AIR-IN LEAKAGE TEST
3.	STRETCHING DEVICE FOR EMITTING ELECTRODE ERECTION
4.	HAND OPERATED RIVETTING GUN

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. Information 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.

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 in-charge 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.

2.8. 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.

.1.1. 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. 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.

.3. 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

MECHANICAL WORKS

BAP:ERN :SPN :MECH: 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 ERECTION

3.1 SPECIAL CONDITIONS FOR ESP

The special conditions for ESP shall be comprising of but not limited to the following:

3.1.1 Any fixtures, concrete block supports, steel structures, required for temporary supporting for pre-assembly, checking, welding, lifting and handling during pre-assembly and erection shall be arranged by contractor, at his cost. It shall be the Contractor's responsibility to check the various foundations for their correctness with respect to level orientation, dimensions etc., and ascertained dimensions shall be measured and submitted to BHEL for approval before erection. Also minor chipping and dressing of foundations up to 40mm, for obtaining of proper face for packer plates/shims, enlarging of the pockets in foundation etc., as may be required for the erection of the equipment/plants will have to be carried out by the Contractor without extra cost.

3.1.2 The scope of equipment to be erected under this contract are detailed in tender specification, Technical Description etc. The schedule of weights given are approximate and are meant only to give a general idea to the Tenderer about the magnitude of the work involved.

3.1.3 All works such as cleaning, leveling, blue-matching, aligning, assembling for temporary erection and alignment, dismantling of certain equipments for checking/cleaning, surface preparation, fabrication of tubes and pipes as per general engineering practice at site. Cutting, grinding, straightening, chamfering, filing, chipping, drilling, reaming, scraping, shaping, fitting up etc., as may be applicable in such erection work are to treated as incidental to erection and necessary to complete the work satisfactorily, shall be carried out by the Contractor, as part of the work.

3.1.4 It shall be the responsibility of the contractor to provide ladders on columns for initial work till such time stairways are completed. For this, the ladder should not be welded on the column and should be pre-fabricated clamping type ladders. Temporary welding on any structural member is permitted under special circumstances only with the approval of BHEL.

3.1.5 No member of the structure/platform should be cut without specific approval of BHEL.

3.1.6 Welding of necessary instrumentation tapping points, will also be the responsibility of the Contractor and will be done as per the instructions of BHEL Engineer. The welding of all the above items will be Contractor's responsibility even if the

1) Product groups under which these items are not specifically indicated in the technical Specifications.

2) Items are supplied by an agency other than BHEL.

3.1.7 All welded joints should be painted with anti-corrosive paint. Daily welding reports in the proforma suggested by BHEL should be submitted the next day morning without fail.

3.1.8 All rotating machineries and equipment shall be cleaned, lubricated, checked for their smooth rotation if necessary by dismantling and refitting before erection. If in the opinion of BHEL Engineer, the equipment is to be checked for clearance at any stage of work or during commissioning period, all such works are to be carried out by Contractor at his cost.

3.1.9 Contractor shall carry out chipping and blue matching of foundation concrete with the packer plates. The packer plates shall be supplied by BHEL. Necessary machining and blue matching of packer plates shall be carried out by the contractor with in the quoted rates.

3.1.10 The contractor shall take all reasonable care to protect the materials and equipments during stacking and erection. Preservative painting required to be done on any equipment or part during the course of stacking and erection will have to be done by the Contractor at no extra cost to BHEL. Paints and all other materials shall be arranged by the contractor.

3.1.11 Electrostatic precipitator collecting electrodes may require strengthening and repair due to minor transport damages before erection and spot heating in position to get correct alignment. This shall be carried out by the contractor as part of the work.

3.1.12 Erection, alignment/ fixing in final position of HIGH VOLTAGE RECTIFIER Transformer of ESP are in the scope of work. However testing and commissioning will be done by other agencies.

3.1.13 Installation of **High voltage Interlocks** (excepting rotary switch interlock in EC Panels) is in the scope of work.

3.1.14 **AIR-IN LEAKAGE TEST** has to be carried out after erection of ESP and before clearing for insulation. Necessary equipment like air blower, venturi, instrumentation etc. will be provided by BHEL free of charges. Handling at stores, transport, erection, commissioning, carrying out the leakage test and attending to leakages till satisfactory sealing / leak proof shall be in thje scope of work. Contractor shall dismantle the test equipment and return to BHEL stores in good condition after due reconciliation, cleaning, servicing. No separate/ additional payment is envisaged for the above.

3.1.15 Complete erection, alignment, testing, pre-commissioning etc. of drive motors of collecting electrode and emitting electrode rapping mechanism is in the scope of work.

3.1.16 Additional platforms of permanent nature for approaching different equipments, as per site requirements which may not be indicated in drawings, shall be installed by the contractor. The materials required for platforms will be supplied by BHEL in running meters at free of cost.

3.1.17 All welders shall be tested and approved by BHEL Engineer / client of BHEL before they are actually engaged on work. BHEL reserve the right to reject any welder without assigning any reason.

3.1.18 In case of any class of work for which there is no such specifications as laid down in the contract, such work shall be carried out in accordance with the instructions and requirements of BHEL Engineer at the quoted rates only.

3.1.19 BHEL Engineer is entitled to stop any welder from his work if found unsatisfactory for any technical reason or there is a high percentage of rejection the work welded by him which, in the opinion of BHEL Engineers, which adversely affect the quality of welding, though the welder has earlier passed the tests.

3.1.20 All charges for testing of welders including destructive and non-destructive tests shall have to be borne by the contractor.

3.1.21 All welded joints shall be subject to acceptance by BHEL Engineer/client.

3.1.22 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 contract is getting over.

3.1.23 APPLICATION OF INSULATION & CLADDING

1. Application of insulation and sheet metal covering includes leading the materials from stacking area/storage sheds to the place of work

2. The insulation work should be carried out with contractor's own scaffolding materials, tools etc.

3. Welding of hooks, supports as per pitch/applying red oxide paint to welded portion as directed and as per the drawings before application of Mineral Wool / Glass Wool mattresses and as instructed by BHEL Engineer.

4. Wool insulations are received at site as bonded / unbonded mattresses in standard sizes. These are to be dressed / cut to suit site requirement by the Contractor.

5. Applying anti-corrosive paint to the inner surface of GI/ALUMINIUM Cladding, Cutting suitable to size, shape grooving and fixing on holders as instructed and as per drawings and specifications. Application of Bituminous Sealing Compound on top of cladding joints shall be done. SUPPLY OF BITUMINOUS SEALING COMPOUND AND ANTICORROSIVE PAINT IS UNDER THE SCOPE OF CONTRACTOR.

6. The contractor should ensure that the finished surface of insulation confirms to dimensions and tolerances given in the drawings. Aesthetic finish & accuracy of work and time are most important.

7. Details of application of insulation and GI/Alumiuium cladding are given in the various drawings of BHEL supplied to the Contractor.

8. Insulation of ESP casing, funnels, ducts, hoppers, insulator housing etc. shall be by welding of studs with retainers in a spacing of 480mm X 240mm, lagging of mineral wool/ LRB wool mattresses over the retainers, sewing the mattress, fixing up of top retainers, fixing casing supports, tying binding wire over the wool, fixing of GI/Al sheets over the wool mattresses, using self tapping screws (at spacing of 150mm for both vertical and horizontal joints) and application of bituminous sealing compound for vertical joints of sheets. The cladding sheets shall be end grooved and creased to obtain proper shape and strength as per drawing of BHEL. The contractor shall arrange required scaffoldings to undertake the work.

9. Insulation of ESP inner roof shall be by welding of studs in a spacing of 480mmX480mm, lagging of mineral wool/LRB wool mattresses, sewing the mattresses, fixing the top retainers and tying of binding wire over the wool mattresses.

3.1.24 APPLICATION OF PAINT:

1. The scope of final painting work includes supply of SYNTHETIC/~~EPOXY/ CHROMATE RUBBERISED~~ ENAMEL (~~2 PACK~~) finishing paint should confirm to ~~EPILUX 4~~ specification in the rate schedule..

2. The above paint should be purchased from any one of the following brands:
   1) Shalimar 2) Berger 3) Bombay paints 4) Asian

3. Before application of paint, the surface to be painted should be thoroughly cleaned with wire brush to remove dirt, dust, rust, grease etc.

4. The painting work should be carried out with contractor's own scaffolding materials, wire brushes, painting brushes, cleaning materials etc.

5. Finishing paint is to be applied in exposed areas like ESP Supporting structure, rectifier handling system, stairs and galleries, duct supporting structure, hand- rails etc.

6. Paint of approved shade and quality is only to be applied. Approved epoxy enamel TC paint tins/packs/containers will be inspected by BHEL Engineer before opening of the seal at work site.

7. A separate register is to be maintained for painting works and for taking signature of BHEL'S Engineer during stage inspection.

8. After application of each coat of Epoxy enamel BHEL Engineer will clear application of next coat by affixing the signature in the protocal register.

3.1.25 TESTS

1. The contractor shall supply manpower and consumables to carry out the required tests on the equipments such as Air-in leakage Test (using air blower provided by BHEL), Gas tightness test by smoke test method or kerosene method and other tests such as Gas Distribution test, Performance Guarantee test etc., to be specified by the Resident Engineer, BHEL at free of cost. Contractor's quoted rate shall include blanking of hopper, funnel and ducts to conduct air-in leakage test, smoke test etc. and all other contingencies such as checking of coupling alignments, various clearances between stator and rotor components, bearing clearing, trial runs etc.

2. All the above tests should be repeated till all the equipments satisfy the requirement/obligation of BHEL to their customer.

3. PRE-COMMISIONING TEST AND COMMISIONING OF THE UNITS:

i. Commissioning of the equipments will involve trial runs of all the equipments erected, and any other works incidental to commissioning. Contractor shall supply labour for all these without any extra cost under this contract.

ii. In case any defect is detected during tests, trial runs such as loose components, undue noise or vibration, strain on connected equipment etc., the Contractor shall immediately attend to these defects and take necessary corrective measures. If any re-adjustment and re-alignment are necessary, the same shall be done as per BHEL Engineer's instructions. If any part of the equipment needs repair, rectifications or replacement, the same shall be done by the Contractor at his cost. The parts to be replaced shall be provided by BHEL.

iii. During this period, though the BHEL's/Client's staff will also be associated in the work, the Contractor's responsibility will be to arrange for the complete labour requirement for the successful trial run of equipment till it is handed over to customer.

iv. It shall be specifically noted that the above employees of Contractor may have to work round the clock along with the BHEL Commissioning Engineers and hence any overtime payment so involved, the Contractor's quoted rates shall be inclusive of all these factors also.

v. During commissioning, re-aligning of rotating and other equipment, attending to leakages and minor adjustment of erected equipment may arise. The quoted rate of Contractor shall be inclusive of all such works.

vi. In case any rework is required because of Contractor's faulty erection which is noticed during commissioning the same has to be rectified by the contractor at his cost. If, during commissioning, any improvement or rectification due to design requirements is involved the same shall be paid at man-hour rates quoted. For this purpose, daily labour report indicating there in, nature of work carried out, consumables used etc., shall be maintained by contractors and for signed by BHEL Engineers every day.

3.1.26 PROGRESS OF ERECTION WORK:

1. During the course of Erection, if the progress is found unsatisfactory, or if the target dates are to be advanced, or in the opinion of BHEL if it is found that the welders employed are not sufficient, BHEL will induct on work their own welders, in addition to Contractor's welders working and recover from the Contractor's bills the charges incurred for engaging the welders with the overheads. This is binding on the Contractor.

2. In case the Contractor's progress is found unsatisfactory, BHEL may deploy unskilled, semi-skilled, skilled operators, Technicians and other required manpower and will assist in improving the progress. All the expenses incurred for, will be recovered from Contractor's bills with overheads.

3. It is obligatory on the part of the Contractor to give daily feed back on progress of erection.

3.1.27 PAYMENTS FOR WORK COMPLETED:

1.The Tenderer shall quote separate rates per metric tonne for each of the categories of work in the rate schedule appended. No eraser should be used and no overwriting is acceptable.

2.The Contractor shall submit his running bills for erection work. The Contractor shall submit his running bills once in a month before end of each month.

3.Subject to any deduction which BHEL may be authorized to make under the contract, the Contractor shall on the certificate of the Engineer at site, be entitled for payment as explained in the payment terms.

4.FOR MECHANICAL ERECTION:

i. 35% of contract rate on prorata basis on completion of erection.
ii. 50% of the contract rate on prorata basis after alignment / fastening / welding / grouting along with supports are completed.

5.LINING AND INSULATION:

85% of contract rate on prorata basis progressively when the work is completed as per BHEL's drawings and instructions.

6.PAINTING WORK:

95% of contract rate on prorata basis progressively when the work is completed as per BHEL's instructions.

7.Further 10% of payment for items 4 and 5 shall be released as indicated below:

a. Further 5% of the contract rate shall be paid on completion of mechanical erection of all the items put together and after completion of air-in leakage test, air-gas tightness test, trial runs of equipment including electrical items and the Unit is ready for commissioning and painting.

b. Further 5% of the contract rate shall be paid when the entire equipment is commissioned and Gas Distribution test is conducted to the satisfaction of BHEL and their client.

8. The balance 5% of the contract value for items 4 and 5 shall be paid after the guarantee period of 12 months. The guarantee period will commence from the date of handing over of unit to customer or six months after the date of successful completion of trial run, whichever is earlier, provided all erection, testing and commissioning works are completed in all respects. However this 5% amount can be released against bank guarantee valid for 12 months as aforesaid in the prescribed proforma of BHEL.

9. The balance 5% of the contract value for item 6 shall be paid on completion of entire painting work.

3.2 SCOPE OF DISMANTLING:

The Scope of work will comprise of but not limited to following:

3.2.1 Disconnection and dismantling of existing mechanical structures / ducts to the extent required at site for hooking up of the system with existing system as per the instruction of Site in-charge, loading of dismantled components to transport equipments, transportation to BHEL'S Clients storage yard after weighment if required and unloading etc., by supplying required manpower, all consumables and using contractors own trucks, lorries, tractors, trailors, cranes and other unloading, transporting and material handling equipments (having valid permission for their operation)

3.2.2 PROGRESS OF DISMANTLING WORK:

1. During the course of dismantling if the progress is found unsatisfactory, or if the target dates to be advanced, or in the opinion of BHEL if it is found that the workers employed are not sufficient BHEL will induct on work their own workers in addition to contractor's workers and recover from the contractors bills the charges incurred for engaging the workers with the overheads. This is binding on the contractor.

2. In case the contractor's progress is found unsatisfactory, BHEL may deploy gas cutters, fitters and technicians etc., and will assist in improving the progress. All the expenses incurred for will be recovered from contractors bill with overheads.

3. It is obligatory on the part of the contractor to give daily feedback on progress of dismantling.

3.2.3 PAYMENTS FOR WORK COMPLETED

1. PAYMENT FOR THE DISMANTLING OF EXISTING STRUCTURE:

a. 95% payment of the contract rate for existing structure 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.

3.3 SPECIAL REQUIREMENTS

3.3.1 The entire work of erection testing and commissioning of the ESP and ID FAN shall be completed within the time specified in the time schedule.

3.3.2 The contractor has to indicate their ability in completing the contract in all respects shorter than the period mentioned in the time schedule.

3.3.3 As time is the essence of this contract, the contractor shall be able to mobilize his manpower round the clock for the entire period to complete the work within the stipulated time.

3.3.4 The contractor should be able to mobilize all the tools, plants and consumables necessary for three shifts operation to meet the requirements.

3.4 IMPORTANT GENERAL & SPECIAL CONDITIONS OF CONTRACT :

3.4.1 RETURN OF SECURITY DEPOSIT:

If the contractor fully performs and completes the work in all respects to the entire satisfaction of BHEL and their client and presents an absolute "No Demand Certificate" in the prescribed form and returns properties belonging to BHEL, handed over / lent to them for carrying out the said works, security deposit will be released to the contractor after deducting all the cost of expenses, if any, under other contracts entered in to with the contractor. It may be noted that in no case the security deposit shall be refunded /released prior to passing of the final bill.

3.4.2 IDLE LABOUR

If the contractor suffers delay in the due execution of the contractual obligation due to delays caused by FORCE MAJEURE conditions, the agreed time of completion of the contract 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 about the causes of delay. The contractor shall not be eligible for any other compensation.

3.5 RIGHTS OF BHEL IN CASE OF POOR PROGRESS OF WORK:

To get the work done through other agencies at the risk and cost of the contractor, in the event of contractor's poor progress or inability to execute work, persistent disregard to instructions of BHEL, assignment transfer, subletting of contract without the 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 the security deposit / other dues.

SECTION - IV

4.1 Scope of Contract

The intent 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, consumables as specified under various clauses of Tender Specification for unloading, 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 TENDERER AT HIS COST

4.2.1 It shall be the responsibility of the contractor to construct his own office shed, stores shed, labour tenements, 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 tenderer /contractor.

4.2.5 As there are bound to be interruptions in regular power supply, power cut/load shedding in any construction site 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, form work 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.

4.3 GASES

4.3.1 All required gases like oxygen / Acetylene / 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.

4.3.2 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 and postponement of recoveries is not permissible. The decision of BHEL Engineer in this regard is final and binding on the Contractor.

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

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

4.3.5 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 of 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 for 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, trailers 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, slings, shackles and electrically operated 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 rare Schedule.

4.6 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 & dismantling 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 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 contractor 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.

4.6.6 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.

4.6.7 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.

4.6.8 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.

4.6.9 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 pitches 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 BHEL.

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 programme.

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. Tenderers 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 without 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. While BHEL will arrange for supply of paint/thinner etc., it shall be responsibility of Tenderer/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 c\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 found 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. BHEL 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 BHEL 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 in construction areas shall wear safety shoes, safety helmets,& safety belt (with double harness - when working at heights). Contractor shall insure his workmen against all accidents, and the policy shall be presented to BHEL. In case of failure to do so BHEL will arrange the same and the expenditure towards this will be debited to the Contractor including BHEL over heads. 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 operations 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 and their client 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 from the 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.

4.11.23 For this purpose the mechanical completion of erection work shall be deemed to be completed in all respects only when the trial runs of motors and gas tightness tests are completed and certified so by BHEL Engineer. The decision of BHEL in this respect shall be final and binding on the contractor.

4.11.24 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.

4.12 PRICE ESCALATION:

4.12.1 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.

4.12.2 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.

4.12.3 In case due to unforeseen circumstances and due to reasons not attributable to 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. This shall be mutually discussed and settled at that time.

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 4.12 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.1,00,000/- only . It is mandatory on the part of the contractor to maintain a minimum of 12 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 (RA)

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

7.2 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.

7.3 BHEL will inform the vendor in writing, in case of reverse auction, the details of service provider to enable them to contact and get trained.

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

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

7.6 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.

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

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

7.9 The lowest bidder has to fax the duly signed filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of auction without fail.

7.10 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**.**

7.11 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.

7.12 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.

7.13 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.

7.14 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.

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

7.16 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.

7.17 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.

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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:MECH:C:237

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:MECH:C:237 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 NSPCL, 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 Mechanical works (BAP:ERN:SPN:MECH:ESP:01)
d. Tender Specification no. BAP: ERN:RSP:SINTER:ESP:MECH:C:237
e. Special Instructions to Bidder
f. General terms and conditions of Reverse Auction.
h. Other sections, appendices, annexure, 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.2,00,000/- (Rupees Two Lakh only)** vide Pay Order No……Dt…….... 2013 / Demand Draft No……dt……. 2013 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.2,00,000/-** 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:MECH:C:237

(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:MECH:C:237)**.

Date :

SIGNATURE OF THE BIDDER

TENDER SPECIFICATION No. : BAP:ERN:RSP:SINTER:ESP:MECH:C:237

(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:MECH:C:237 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	Experience	Numbers Proposed to be deployed at site for this job
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

SCHEDULE TO BE FURNISHED BY THE TENDERER

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.
    a. Method Statements along with appropriate drawings for pre-assembly works, dismantling works and erection works
    b. Site establishment plan based on the ESP layout drawing provided, showing the locations of site office, storage yard, tower crane location, mobile crane/ trailer movement to facilitate the pre-assembly works, dismantling works and the erection works
    c. Cycle time calculations for critical activities
    d. Rated Load chart, Range diagrams, Manual of the proposed tower crane
    e. Rated Load chart, Range diagrams, Manual of the proposed mobile crane

2. **Bidders are required to submit details for the above. Bids received without above documentary proof are liable to be rejected.**

3. The Tenderer is required to submit the following schedule along with his 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:
Schedule of Consumables (LPG, Oxygen, Welding Electrodes, etc.,)

Schedule F:
Day wise schedule of erection quantities

SCHEDULE 'G
Construction power / electricity required for / Office / stores / workshop sheds, etc. of the tenderer 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.

---------- ---------- ----------

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	Cranes b. Tower crane c. 120 MT / 150 MT Mobile crane d. 60 MT / 75 MT / 90 MT Mobile cranes e. 18T / 14T /12T / 10 T Capacity Mobile crane								
02	5T or 8T Capacity fork-lift or Hydromack								
03	Tractor Trailors								
04	Trucks								
05	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. DC Welding Generator / Welding transformer with cables

09. Air Compressors

10. Electrical winches
    10 MT Capacity
    5 MT Capacity
    2 MT Capacity
11. Hand winches

12. Hydraulic Torque wrenches

13. Electrode drying oven

14. Portable electrode drying oven

15. Spur gear chain pulley block
    5T Capacity
    3T Capacity
    2T Capacity

16. Gas cutting set with hoses

Signature of the Bidder

1	2	3	4	5	6	7	8	9	10

17. Hydraulic jacks
    - 5T Capacity
    - 10T Capacity
    - 20T Capacity

18. Low voltage transformer with
    - Hand lamps

19. Single sheave snatch pulley blocks
    - 5T Capacity
    - 10T Capacity
    - 20T Capacity

20. Double sheave pulley blocks
    - 3T Capacity
    - 5T Capacity
    - 10T Capacity

21. 3T Capacity D shackle

22. 5T Capacity D shackle

23. 10T Capacity D shackle

24. 20T Capacity D shackle

Signature of the Bidder

1	2	3	4	5	6	7	8	9	10

25. Various sizes of portable grinders

26. Bench grinder

27. Heavy duty high speed portable grinder

28. Flexible shaft grinders

29. Pneumatic drill ½" & 1"

30. Torque wrenches 300mm
450mm
600mm

31. Pull lifts 1.5T Capacity
3T Capacity
6T Capacity

32. Compensating Cables

33. Steel wire ropes for guy ropes

34. Bench files of various sizes

Details of Maintenance facilities to be provided at Site for maintaining the various Equipment:

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 – I.A.

FORMAT FOR SUBMISSION OF DETAILS OF MOBILE CRANE PROPOSED TO BE DEPLOYED BY BIDDER

Please give details in separate sheets for each crane that is proposed to be deployed at site.

01.	Crane Make / version	
02.	Year of manufacture	
03.	Type of Boom	
04.	Max. Lifting capacity	
05.	Max. Boom length	
06.	Jib details	
07.	Safety Devices	
08.	Whether Load Chart / Data Sheet enclosed	Yes / No
09.	Ownership	Own / Hired
10.	Other details, if any.	

APPENDIX – I.B.

FORMAT FOR SUBMISSION OF DETAILS OF TOWER CRANE, IF IT IS PROPOSED TO BE DEPLOYED BY BIDDER

01.	Tower crane Make / version	
02.	Year of manufacture	
03.	Anchoring details	Base ballast details & Free standing height to be specified.
04.	Max. Lifting capacity	
05.	Working Height	
06.	Tip load	
07.	Jib details	
08.	Tower type	Whether self erecting with hydraulic climbing facility
09.	Other Mechanisms	Details of Hoisting, Top Slewing, trolleying etc.
10.	Safety Devices	
11	Rest platform & guard rail	
12	Electrical power in KVA	
13	Wind speed limitation	
14	Whether Data Sheet enclosed	Yes / No

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 :** Not applicable		
	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

DRAWINGS , SAFETY CODES & OTHER INFORMATIONS

10. PLEASE NOTE THAT THE ATTACHED DRAWINGS ARE FOR TENDER REFERENCE PURPOSES ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES.

11. ALL THE INSTRUCTIONS GIVEN IN THE 'SAFETY FOR CONTRACTORS IN ROURKELA STEEL PLANT' ARE TO BE STRICTLY ADHERED TO.

ERECTION SERVICES DEPARTMENT

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

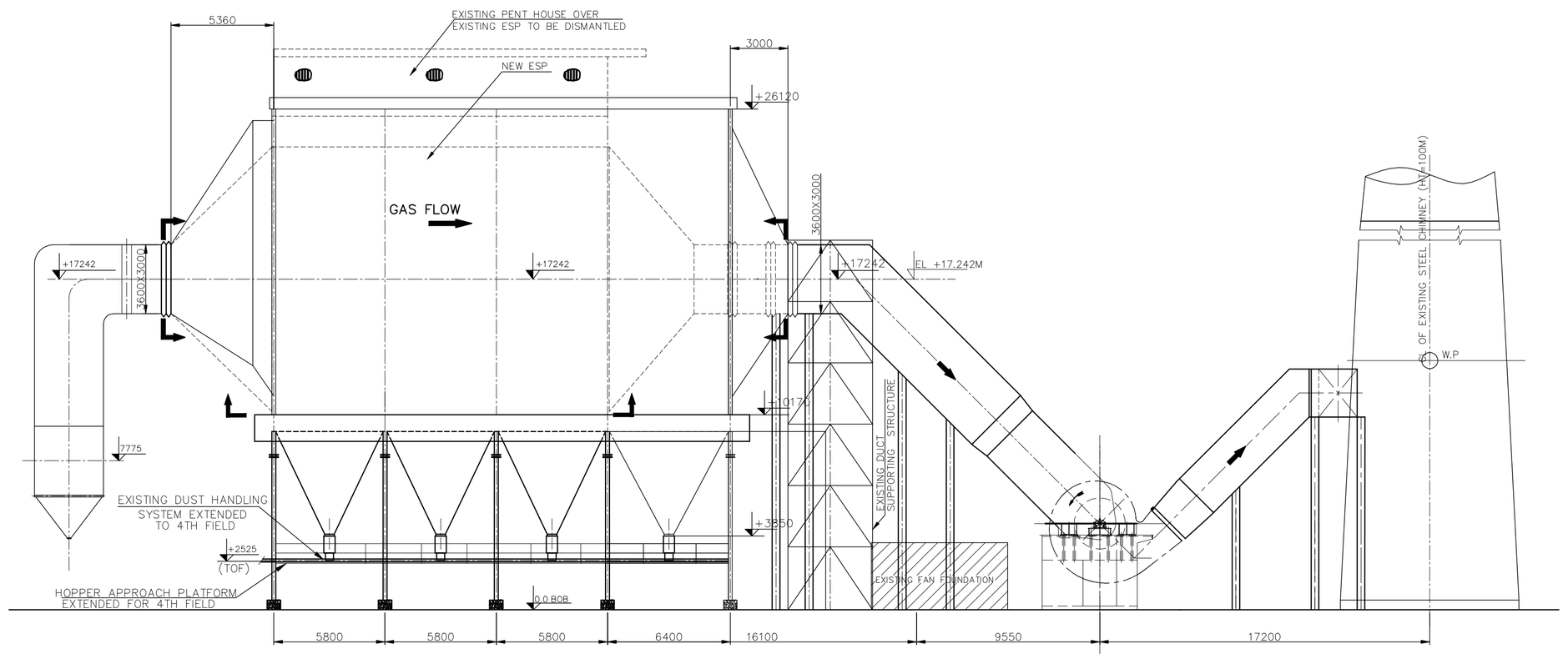
BOILER AUXILIARIES PLANT

INDIRA GANDHI INDUSTRIAL COMPLEX

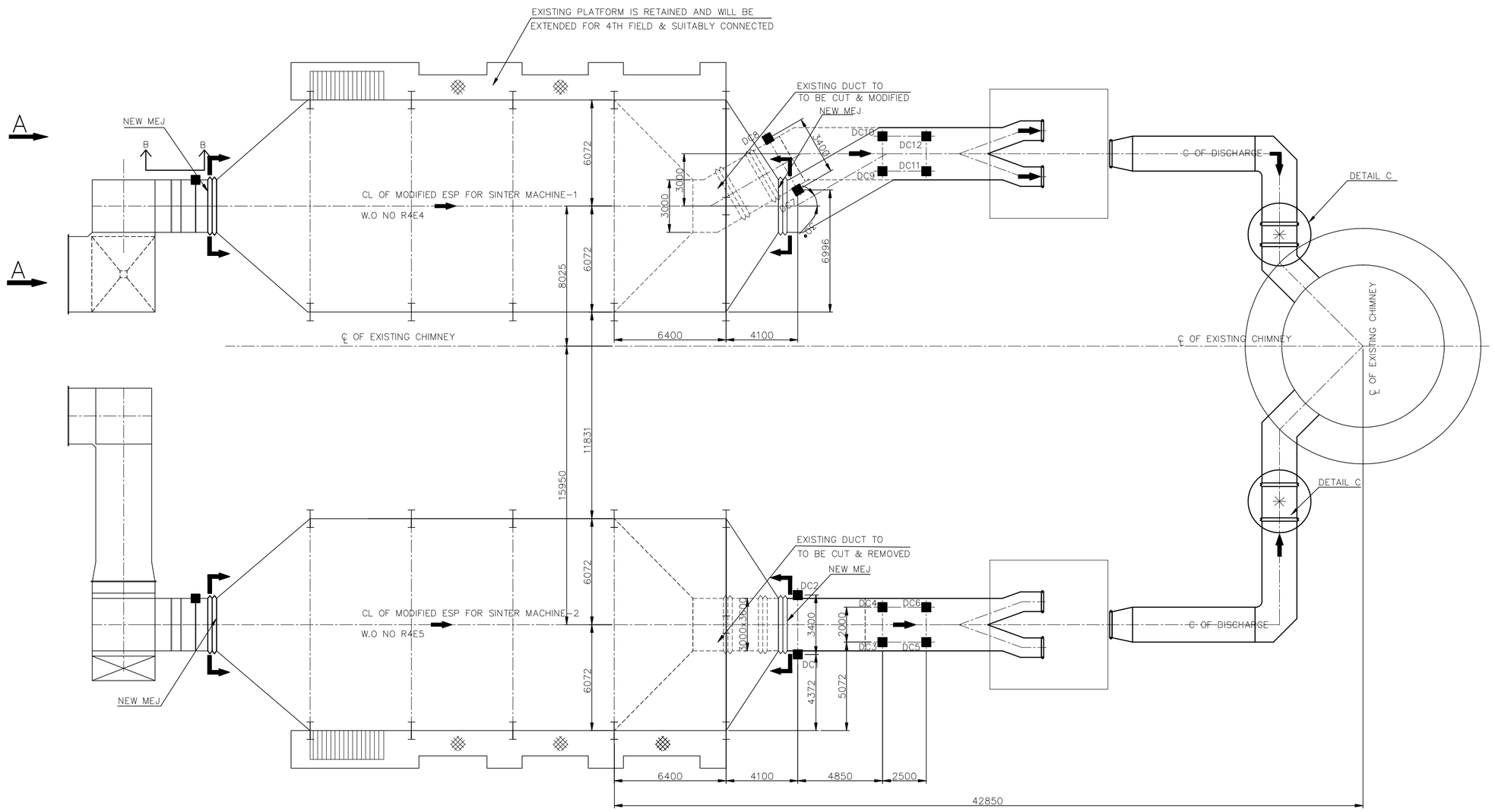
RANIPET – 632 406

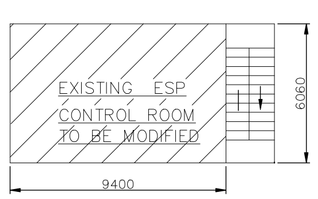
DRAWING NO. 1-00-111-28827/01

ALL DIMENSIONS ARE IN MILLIMETRES



SECTION AA





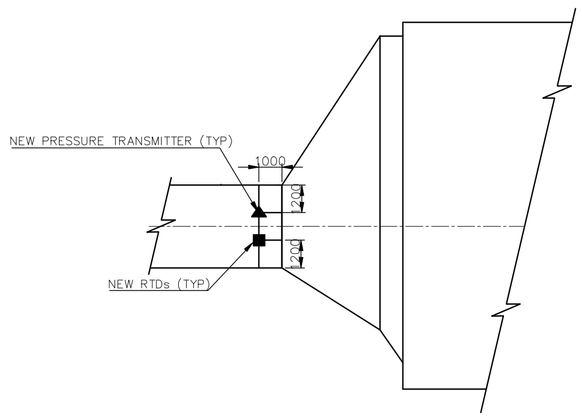
PLAN

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.

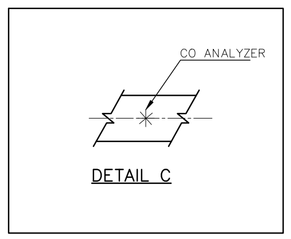
LEGEND

- ■ 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.



SECTION BB

PRESSURE TRANSMITTER & RTD LOCATION & INSTALLATION DETAIL (NTS)



DETAIL C

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	BHEL	BHARAT HEAVY ELECTRICALS LIMITED — DEPT CODE M

ZONE	JOB NO:	STATUS	CONTRACT
	DISTRIBUTION:		
	REV	DATE	K.ALTD.
	01	15.07.13	R.HEMAMALINI
D1,3,7,13	NOTES REVISED BASED ON SAIL COMMENT.		

	CHD:	APPD:
	G.SUNDAR	G.GUNASEKAR

ACTIVITY	NAME&SIGN	DATE
DRAWN BY	R.HEMAMALINI -sd-	7.05.13
DESIGNED BY	G.SUNDAR -sd-	7.05.13
CHEKKED BY	G.SUNDAR -sd-	7.05.13
APPROVED BY	G.GUNASEKAR	7.05.13

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SAIL RSP DRG NO:PD/R/

DEPT: SINTER PLANT-1

TITLE: LAYOUT OF ID SYSTEM WITH MODIFIED ESP

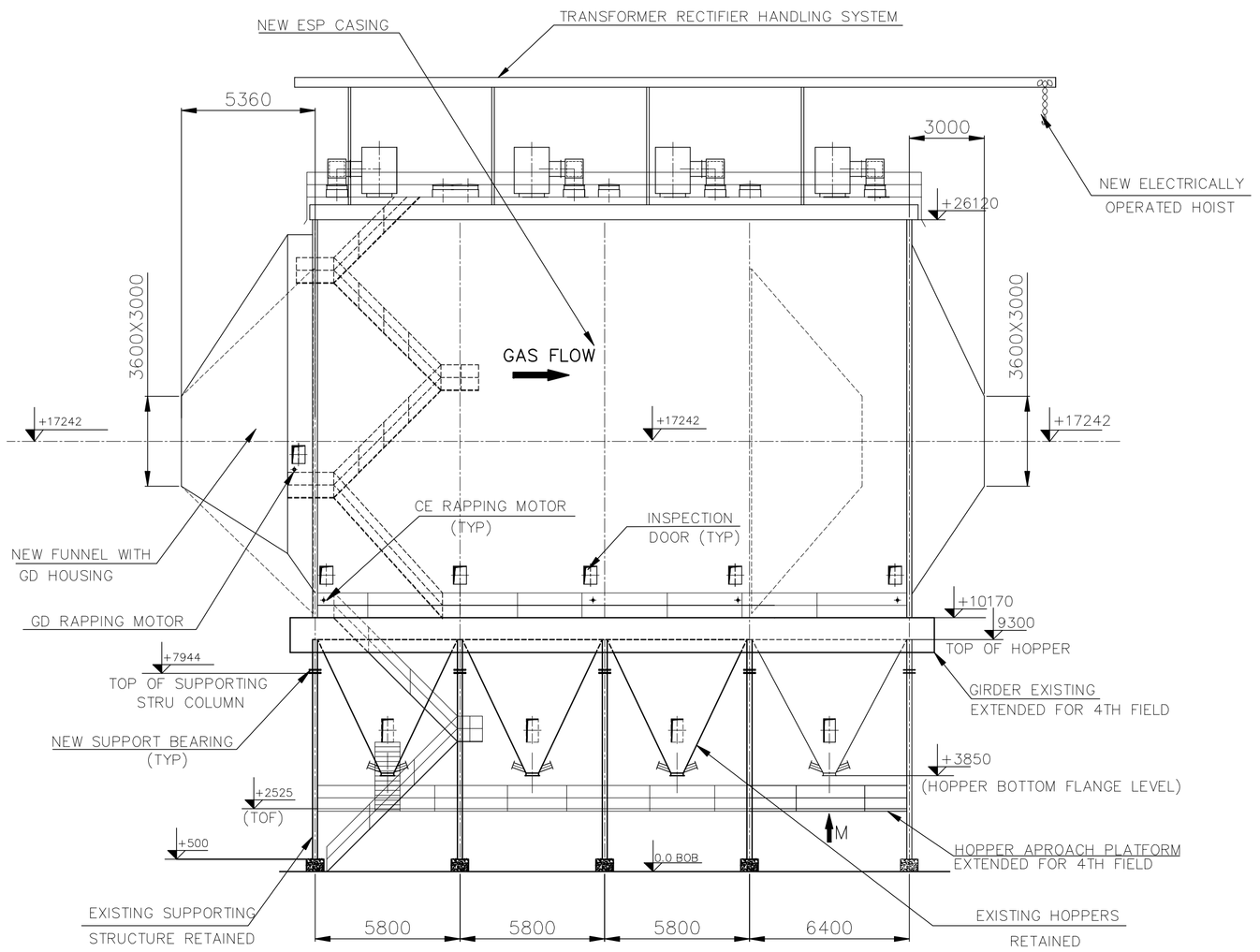
SCALE : N.T.S

PROJECT DRG NO:RSP/SP1-ESP/M/BE/003

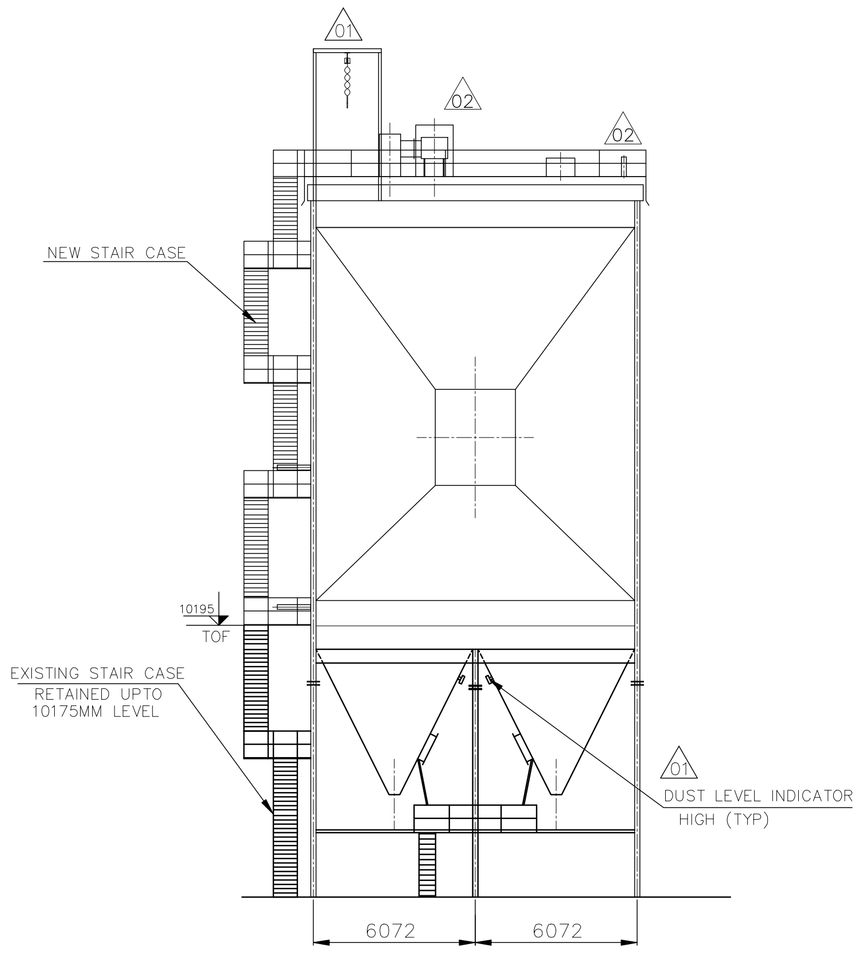
BHEL DRAWING NO. 1-00-111-28827 | SHEET OF | REV 01

Size A1

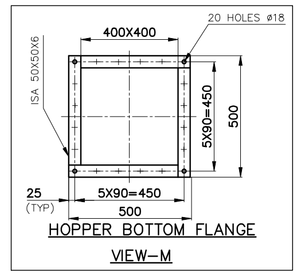
DRAWING NO 1-00-111-28826/02



ELEVATION

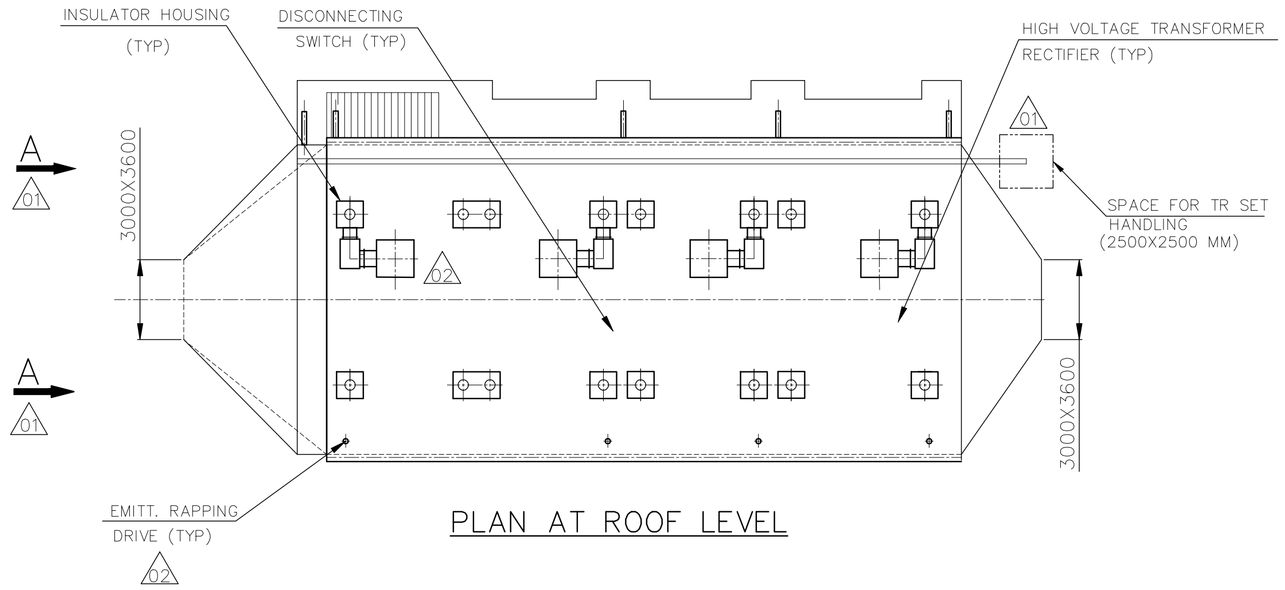


VIEW AA

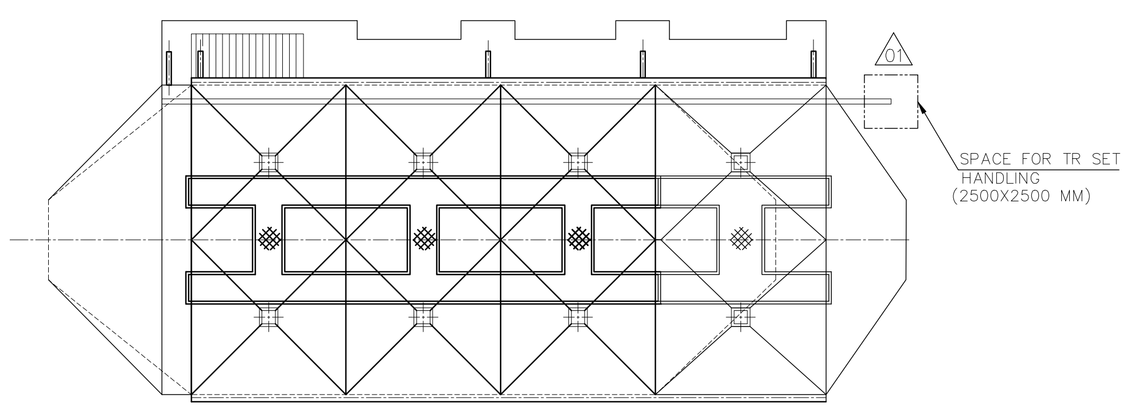


NOTES:

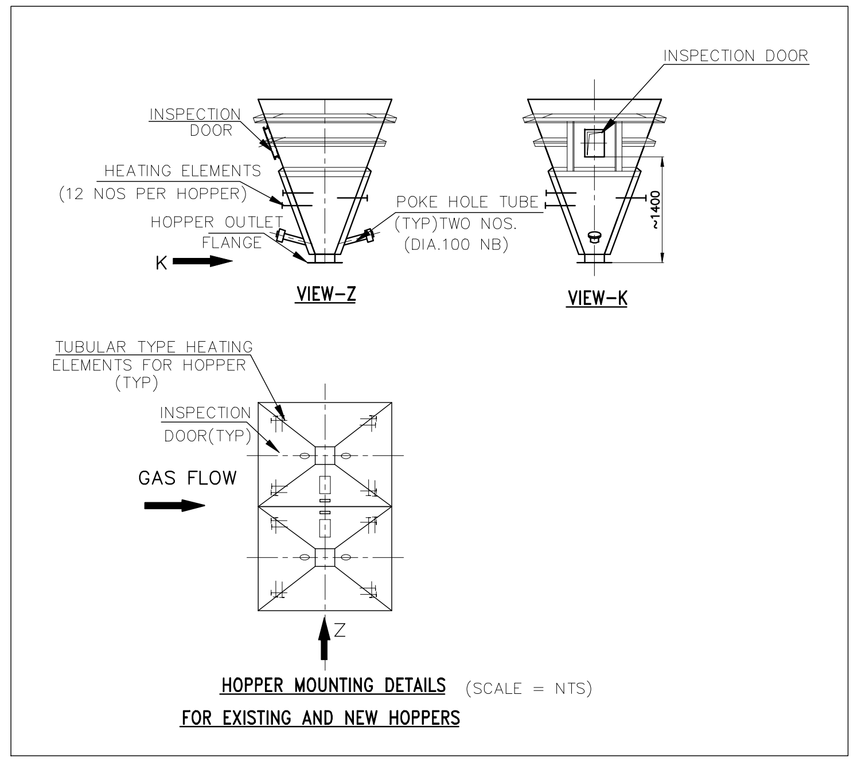
01. MODIFIED ESP SIZE: FAA-3X37.5M+45M-112155-2; NO OF ESPS PER SINTER MACHINE 1
    BOB - BOTTOM OF BASE PLATE.
    TOF - TOP OF FLOOR GRILL
02. METHOD OF ESP RENOVATION & RETROFITTING ARE DESCRIBED BELOW;
    EXISTING ESP ABOVE +10.170M LEVEL WILL BE DISMANTLED AND MODIFIED WITH NEW DESIGN ESP OF 3 FIELDS IN SERIES FIELD LENGTH 3.75M + 1 FIELD IN SERIES FIELD LENGTH 4.5M COLLECTING ELECTRODE HEIGHT IS 15.5M.
03. EXISTING ESP SUPPORTING STRUCTURE UPTO +10.170M LEVEL WILL BE RETAINED.
    NEW ESP SUPPORTING STRUCTURE WITH SUITABLE FOUNDATION WILL BE PROVIDED FOR FOURTH FIELD.
04. ESP SUPPORT BEARINGS WILL BE REPLACED.
05. EXISTING PLATFORM & STAIR CASE WILL BE RETAINED AND MODIFIED TO SUIT NEW DESIGN ESP.
06. EXISTING HOPPERS ARE RETAINED. NEW HOPPER MOUNTINGS VIZ. HOPPER HEATER, THERMOSTAT, ASH LEVEL INDICATOR WILL BE PROVIDED FOR EXISTING HOPPERS.
△01 07. FOR NEW HOPPERS, HOPPER MOUNTING DETAILS ARE SHOWN IN THIS DRAWING IN DETAIL. ONE NO. DUST LEVEL INDICATOR FOR EACH HOPPER WILL BE PROVIDED.
    EXISTING HOPPER APPROACH PLATFORM BELOW EXISTING HOPPERS IS RETAINED AND WILL BE EXTENDED TO 4TH FIELD.
08. NEW METALLIC EXPANSION JOINTS CONNECTING INLET AND OUTLET FUNNELS TO DUCTS WILL BE PROVIDED. THE ESP INLET AND OUTLET DUCTS WILL BE MODIFIED SUITABLY TO CONNECT THE NEW ESP FUNNELS.
△01 09. EXISTING DUST HANDLING SYSTEM WILL BE RETAINED & AUGMENTED TO CONNECT NEW ESP HOPPERS
    A) IN CASE ANY OF THE COMPONENTS OF ASH HANDLING SYSTEM IS TO BE SUPPORTED BELOW HOPPER, THE SUPPORT SHALL BE TAKEN FROM NEIGHBOURING COLUMN OR FROM GROUND. THE HOPPER WALLS SHALL NOT BE WELDED WITH STEEL MEMBERS FOR SUPPORTING OF ANY PIPE LINES, TRAYS ETC.,
10. THERMAL INSULATION & CLADDING WILL BE PROVIDED WITH NEW LRB MINERAL WOOL OF 75 MM THICK AND CLADDING SHEET OF PLAIN ALUMINIUM SHEET OF 0.71 MM THICK FOR THE ESP CASING FUNNEL ROOF HOPPERS AND MODIFIED PORTIONS OF DUCTS.
11. EXISTING DISMANTLED MATERIALS VIZ. FLOOR GRILL, STAIR CASE, HAND RAILS, CABLE TRAYS & ITS SUPPORTS,OTHER STRUCTURAL MATERIALS, (AFTER DISMANTLING) WILL BE MADE USE WHEREVER REQUIRED AS PER SITE REQUIREMENT.
12. NEW OPACITY MONITOR ONE NUMBER WILL BE PROVIDED IN THE COMMON CHIMNEY AT SUITABLE LOCATION.
13. FOR PLOT PLAN & LAYOUT OF ESP & DUCTING DRAWING REFER BAP DRG NO. 1-00-111-28827
△01 14. GD SCREENS. 2 NOS AT INLET & ONE AT OUTLET PROVIDED.



PLAN AT ROOF LEVEL



PLAN AT HOPPER BREAK LINE/HOPPER PLAT FORM



ZONE	JOB NO.	STATUS	CONTRACT		
	DISTRIBUTION				
	REV / DATE	ALTD:	CHD:	APPD:	
	02 / 15.07.13	R.HEMAMALINI	G.SUNDAR	G.GUNASEKAR	
J2,B10	EMITTING RAPPING DRIVE LOCATION REVISED.				
H3,B9	TR SET LOCATION REVISED.				

ZONE	JOB NO.	STATUS	CONTRACT		
	DISTRIBUTION				
	REV / DATE	ALTD:	CHD:	APPD:	
	01 / 03.07.13	R.HEMAMALINI	G.SUNDAR	G.GUNASEKAR	
	1.AS PER THE CUSTOMER COMMENT DT.02.07.13 DRAWING REVISED.				
G6	TR SET HANDLING LOCATION IS SHIFTED INTO LEFT SIDE.				
K6	TR SET HANDLING LOCATION IS SHIFTED INTO LEFT SIDE.				
A9	TR SET HANDLING LOCATION IS SHIFTED INTO LEFT SIDE.				
J12	NOTES SL NO.14 ADDED BASED ON COUSTEMER COMMENT				

ACTIVITY	NAME&SIGN	DATE
DRAWN BY	R.HEMAMALINI -sd-	03.06.13
DESIGNED BY	G.SUNDAR -sd-	03.06.13
CHEKED BY	G.SUNDAR -sd-	03.06.13
APPROVED BY	G.GUNASEKAR	03.06.13

CAUTION: THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED (BHEL) AND IS NOT TO BE USED, REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN AUTHORISATION FROM BHEL. IT IS LOANED SUBJECT TO RETURN ON DEMAND AND ON THE UNDERSTANDING THAT NEITHER IT NOR ANY PART OF ITS CONTENTS WILL BE DISCLOSED TO ANY UNAUTHORISED PERSON WITHOUT THE PRIOR CONSENT OF BHEL. ANY INFRINGEMENT WILL BE LIABLE FOR LEGAL ACTION. ALL RIGHTS RESERVED.

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 M CODE

SAIL RSP DRG NO:PD/R/

DEPT: SINTER PLANT-1

TITLE: GENERAL ARRANGEMENT OF MODIFIED ESP FOR SINTER MACHINE-I

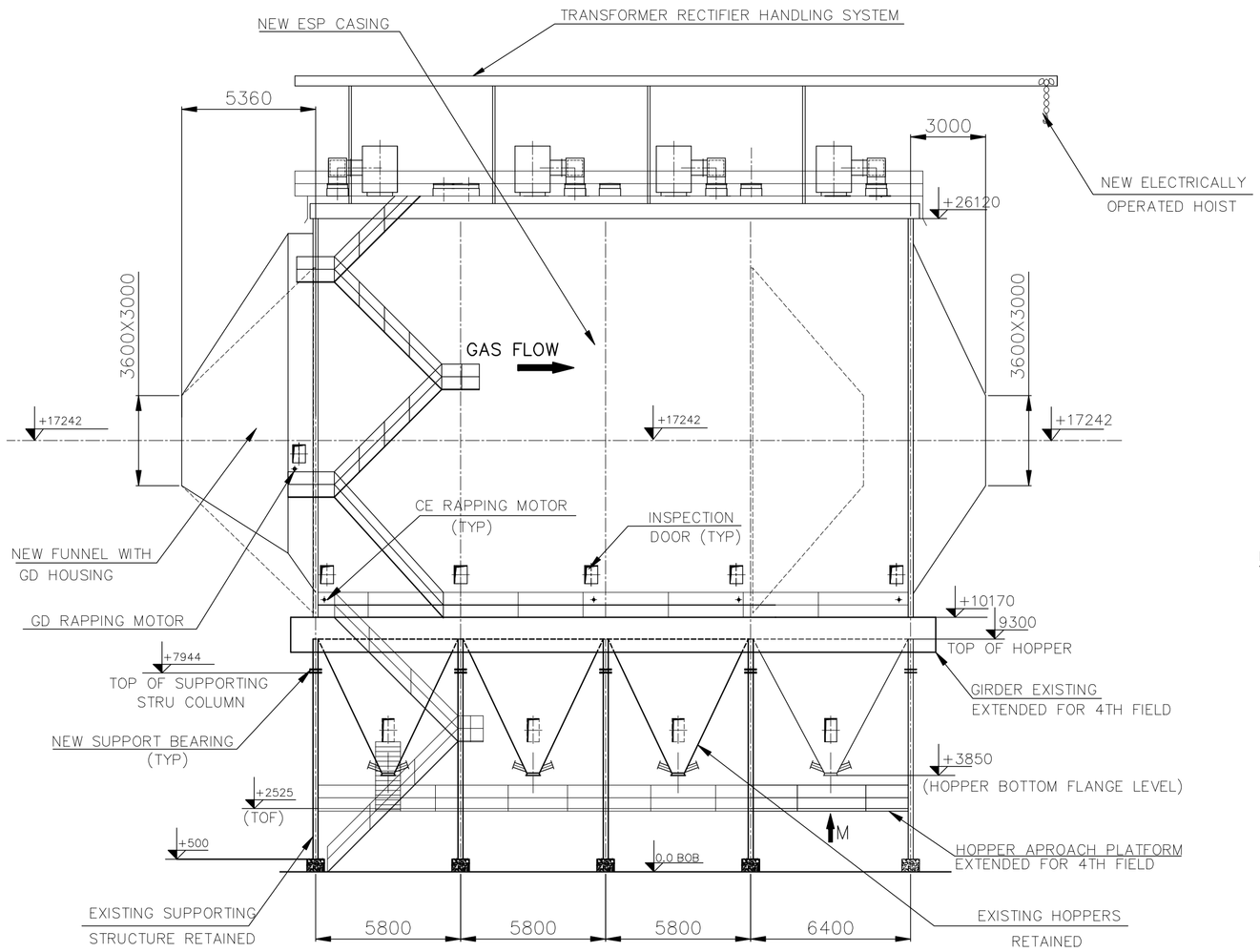
SCALE : N.T.S

PROJECT DRG NO:RSP/SP1-ESP/M/BE/001

BHEL DRAWING NO. 1-00-111-28826 — SHEET OF — REV 02

Size A1

DRAWING NO. 1-00-111-28826/01



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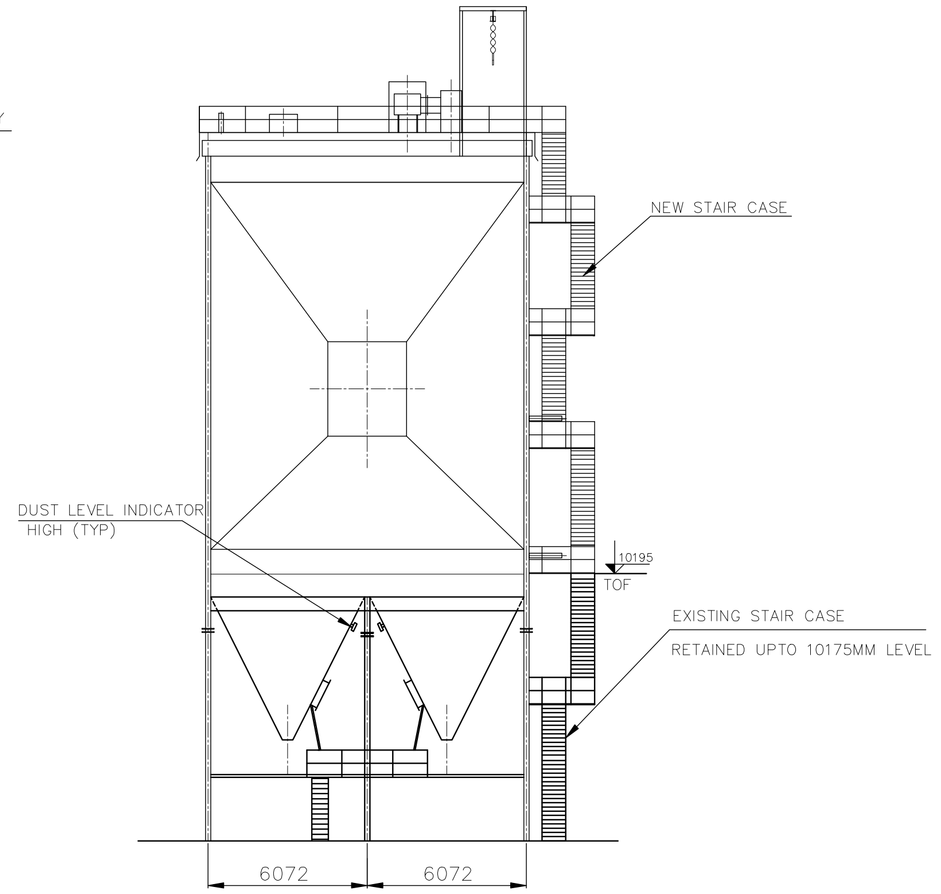
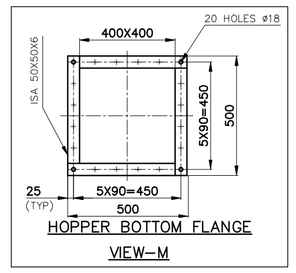


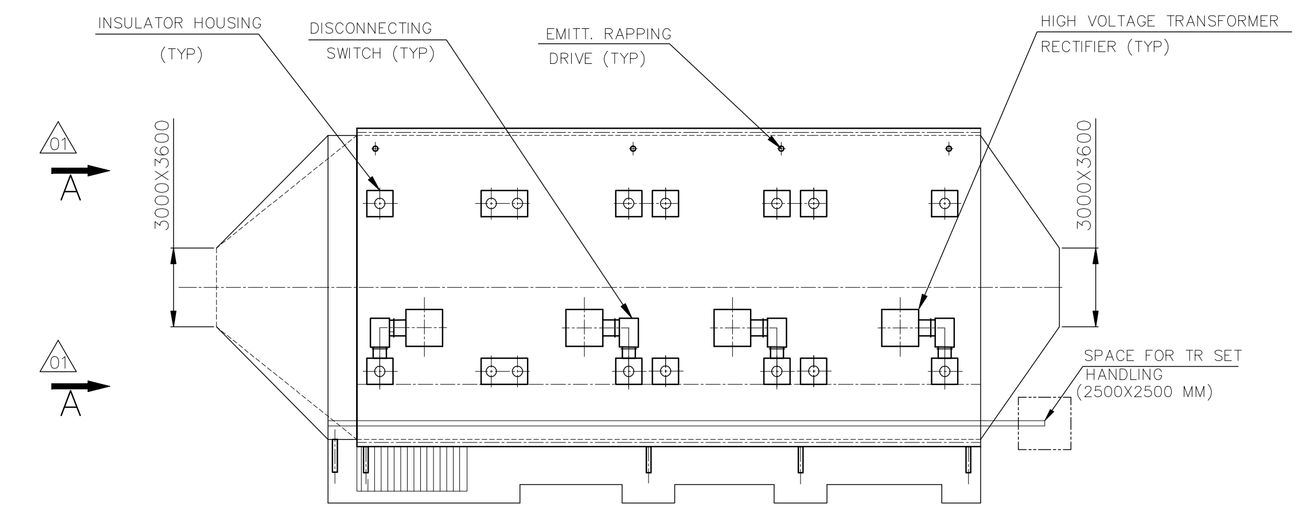
VIEW AA



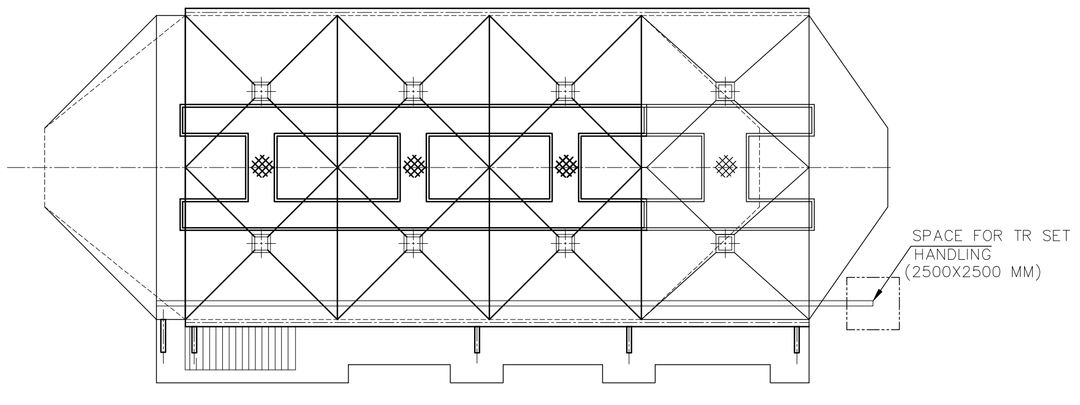
HOPPER BOTTOM FLANGE VIEW-M

NOTES:

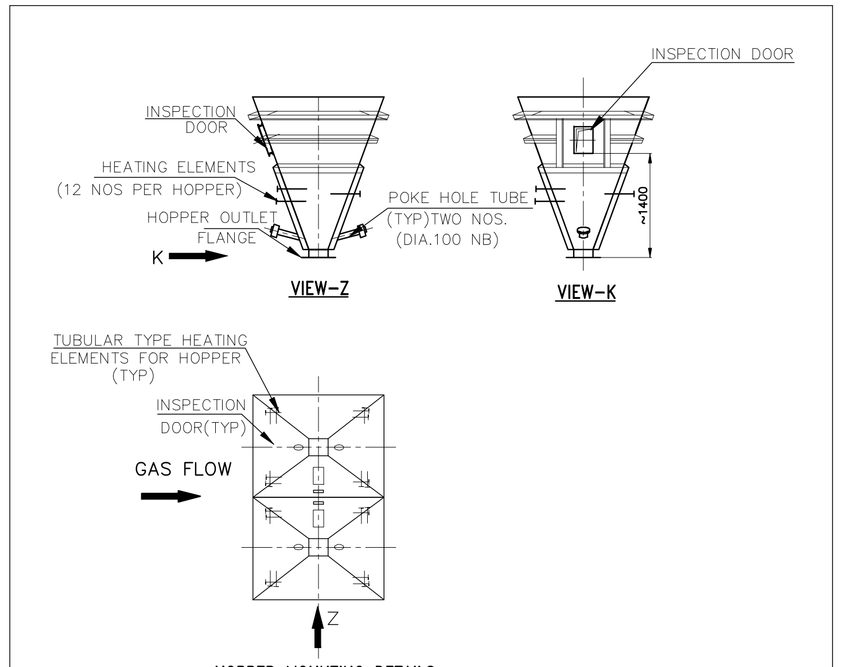
01. MODIFIED ESP SIZE: FAA-3X37.5M+45M-112155-2; NO OF ESPS PER SINTER MACHINE 1
BOB - BOTTOM OF BASE PLATE.
TOF - TOP OF FLOOR GRILL
02. METHOD OF ESP RENOVATION & RETROFITTING ARE DESCRIBED BELOW;
EXISTING ESP ABOVE +10.170M LEVEL WILL BE DISMANTLED AND MODIFIED WITH NEW DESIGN ESP OF 3 FIELDS IN SERIES FIELD LENGTH 3.75M + 1 FIELD IN SERIES FIELD LENGTH 4.5M COLLECTING ELECTRODE HEIGHT IS 15.5M.
03. EXISTING ESP SUPPORTING STRUCTURE UPTO +10.170M LEVEL WILL BE RETAINED.
NEW ESP SUPPORTING STRUCTURE WITH SUITABLE FOUNDATION WILL BE PROVIDED FOR FOURTH FIELD.
04. ESP SUPPORT BEARINGS WILL BE REPLACED.
05. EXISTING PLATFORM & STAIR CASE WILL BE RETAINED AND MODIFIED TO SUIT NEW DESIGN ESP.
06. EXISTING HOPPERS ARE RETAINED. NEW HOPPER MOUNTINGS VIZ. HOPPER HEATER, THERMOSTAT, ASH LEVEL INDICATOR WILL BE PROVIDED FOR EXISTING HOPPERS.
01 07. FOR NEW HOPPERS, HOPPER MOUNTING DETAILS ARE SHOWN IN THIS DRAWING IN DETAIL. ONE NO. DUST LEVEL INDICATOR FOR EACH HOPPER WILL BE PROVIDED.
EXISTING HOPPER APPROACH PLATFORM BELOW EXISTING HOPPERS IS RETAINED AND WILL BE EXTENDED TO 4TH FIELD.
08. NEW METALLIC EXPANSION JOINTS CONNECTING INLET AND OUTLET FUNNELS TO DUCTS WILL BE PROVIDED. THE ESP INLET AND OUTLET DUCTS WILL BE MODIFIED SUITABLY TO CONNECT THE NEW ESP FUNNELS.
01 09. EXISTING DUST HANDLING SYSTEM WILL BE RETAINED & AUGMENTED TO CONNECT NEW ESP HOPPERS
A) IN CASE ANY OF THE COMPONENTS OF ASH HANDLING SYSTEM IS TO BE SUPPORTED BELOW HOPPER, THE SUPPORT SHALL BE TAKEN FROM NEIGHBOURING COLUMN OR FROM GROUND. THE HOPPER WALLS SHALL NOT BE WELDED WITH STEEL MEMBERS FOR SUPPORTING OF ANY PIPE LINES, TRAYS ETC.,
10. THERMAL INSULATION & CLADDING WILL BE PROVIDED WITH NEW LRB MINERAL WOOL OF 75 MM THICK AND CLADDING SHEET OF PLAIN ALUMINIUM SHEET OF 0.71 MM THICK FOR THE ESP CASING FUNNEL ROOF HOPPERS AND MODIFIED PORTIONS OF DUCTS.
11. EXISTING DISMANTLED MATERIALS VIZ. FLOOR GRILL, STAIR CASE, HAND RAILS, CABLE TRAYS & ITS SUPPORTS,OTHER STRUCTURAL MATERIALS, (AFTER DISMANTLING) WILL BE MADE USE WHEREVER REQUIRED AS PER SITE REQUIREMENT.
12. NEW OPACITY MONITOR ONE NUMBER WILL BE PROVIDED IN THE COMMON CHIMNEY AT SUITABLE LOCATION.
13. FOR PLOT PLAN & LAYOUT OF ESP & DUCTING DRAWING REFER BAP DRG NO. 1-00-111-28827
14. THIS ESP G.A DRAWING IS FOR ONE ESP ONLY.
01 15. GD SCREENS. 3 NOS AT INLET & ONE AT OUTLET PROVIDED.



PLAN AT ROOF LEVEL



PLAN AT HOPPER BREAK LINE / HOPPER PLATFORM



HOPPER MOUNTING DETAILS FOR EXISTING AND NEW HOPPERS (SCALE = NTS)

ZONE	JOB NO.	STATUS	CONTRACT
	DISTRIBUTION		

REV.	DATE	ALTD:	CHD:	APPD:
01	05.07.13	R.HEMAMALINI	G.SUNDAR	G.GUNASEKAR

J12	1.AS PER THE CUSTOMER COMMENT DT.02.07.13 DRAWING REVISED. NOTES SL NO.14 ADDED BASED ON CUSTOMER COMMENT.
G12	NOTES SL NO.09 CORRECTED BASED ON CUSTOMER COMMENT.
F12	NOTES SL NO.07 CORRECTED BASED ON CUSTOMER COMMENT.

ACTIVITY	NAME&SIGN	DATE
DRAWN BY	EOL -sd-	20.05.13
DESIGNED BY	G.SUNDAR -sd-	20.05.13
CHEKED BY	G.SUNDAR -sd-	20.05.13
APPROVED BY	G.GUNASEKAR	20.05.13

CAUTION: THIS DRAWING IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED AND IS ISSUED IN CONFIDENCE AND SHALL NOT BE REPRODUCED OR USED TO FURNISH ANY INFORMATION FOR MAKING OF DRAWINGS OF APPARATUS EXCEPT WHERE PROVIDED FOR AGREEMENT WITH BHEL COMPANY.

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
	SAIL RSP DRG NO:PD/R/
	DEPT: SINTER PLANT-1
	TITLE: GENERAL ARRANGEMENT OF MODIFIED ESP FOR SINTER MACHINE-II — SCALE : N.T.S
	PROJECT DRG NO:RSP/SP1-ESP/M/BE/002
	BHEL DRAWING NO. 1-00-111-28849 — SHEET OF — REV 01

Size A1

FIRST ANGLE PROJECTION

ALL DIMENSIONS ARE IN mm.

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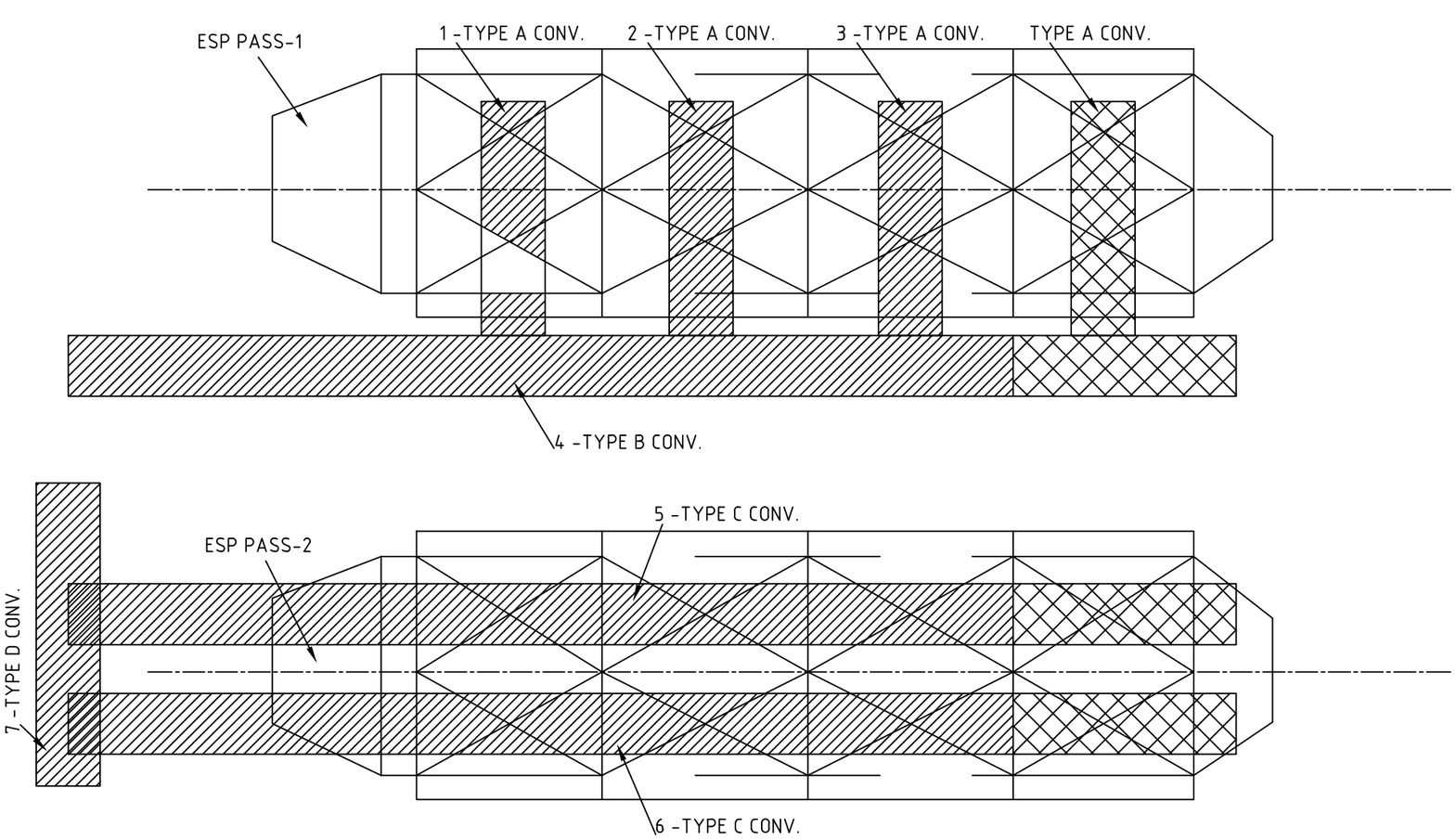
IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTREST OF THE COMPANY.

INVENTORY NO. SIGN.& DATE REF.DRG.NO.



-EXISTING CHAIN CONVEYOR

-NEW / EXTENDED CHAIN CONVEYOR

FOR TENDER PURPOSE

TYPE OF PRODUCT OR NAME OF CUST/PROJ: **SINTER PLANT–I**, **M/s ROURKELA STEEL PLANT**

BHARAT HEAVY ELECTRICALS LIMITED
BHOPAL

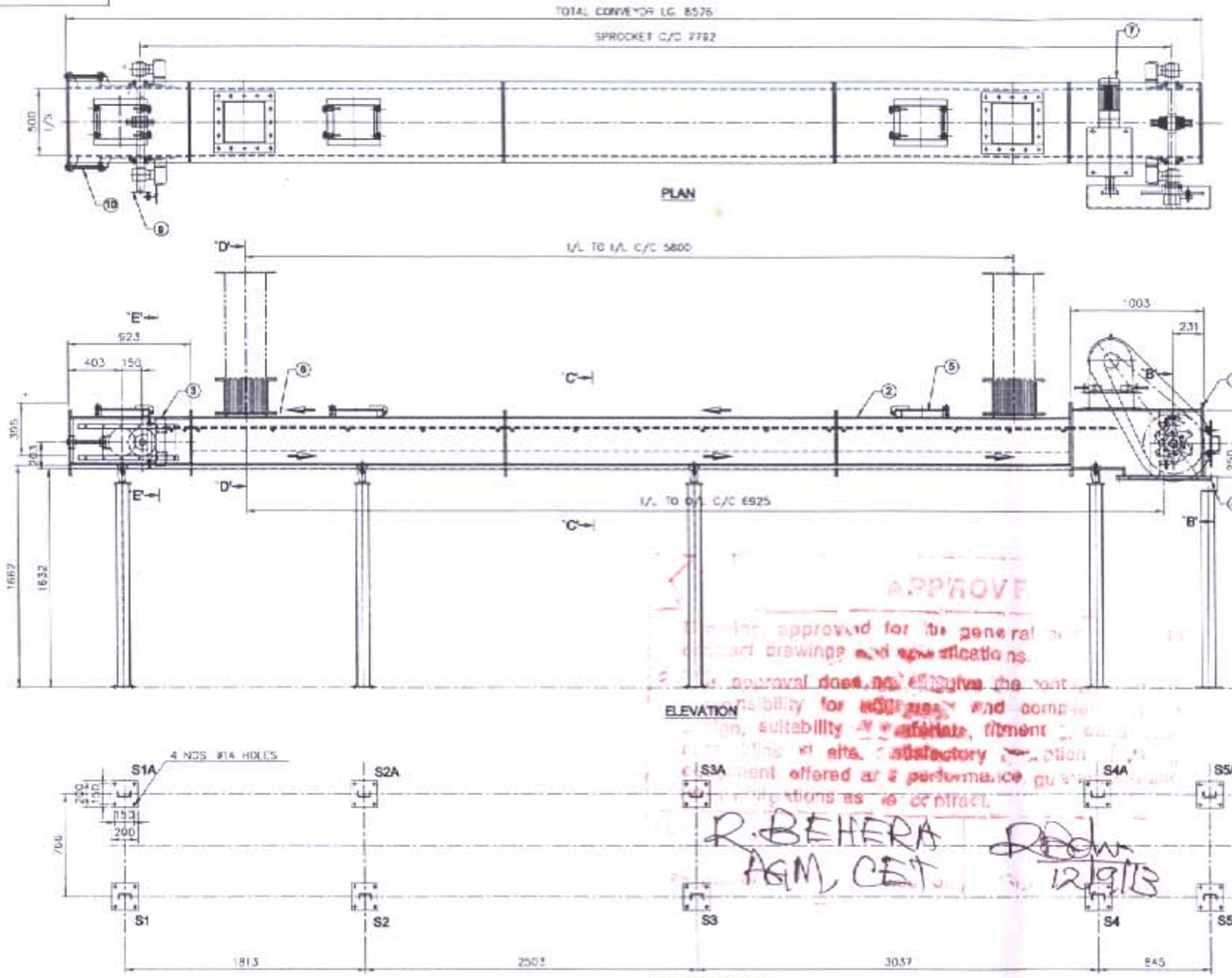
	NAME	SIGN	DATE	NO. OF VAR
DRN				
CKD				
APPD				

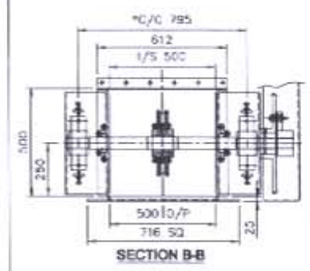
DEPT	UN. TOL.DIM.GR.		SCALE	WEIGHT (KG.)		ITEM NO.	NO.OF ITEMS
RMSG			NTS	N.A.	REF TO ASSY		00
CODE 915							

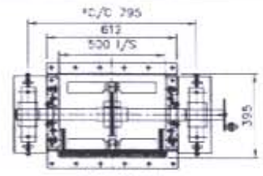
TITLE: **DUST CONVEYING ARRANGEMENT**

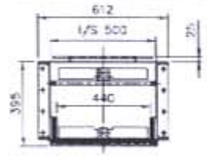
DRG NO: **BHEL–002** REV. 00

SHT.NO. 1 NO.OF SHT. 1









NOTES:
1. ALL DIMENSIONS ARE IN MM.
2. ALL CIVIL WORK, MAINTENANCE PLATFORM NOT IN DEMECH SCOPE OF SUPPLY.
3. THERE COULD BE SOME DIMENSIONS CHANGES (MINOR) DURING DETAIL ENGINEERING.
4. ** MARKED DIMENSIONS ARE CONFIRMED AFTER DETAIL ENGINEERING.
5. INLET CHUTE & INLET CHUTE FLANGE TO BE WELDED SUITABLY AT SITE.
6. OUTLET CHUTE & OUTLET CHUTE FLANGE TO BE WELDED SUITABLY AT SITE.

SR. NO.	DESCRIPTION	QTY	REMARKS
10	SCREW TAKE-UP ARRGT.	1	
9	ZERO SPEED SWITCH	1	
8	CHAIN LINK ASSEMBLY	1 LOT	
7	DRIVE ARRANGEMENT	-	
6	INLET CHUTE	-	
5	INSPECTION WINDOW 300×250	4	
4	OUTLET CHUTE	1	
3	TENSION END CASING ASSLY.	1	
2	INTERMEDIATE CASING	5	
1	DRIVE END CASING ASSEMBLY	-	

ALL DIMENSIONS ARE IN MILLIMETRES

TECHNICAL SPECIFICATION

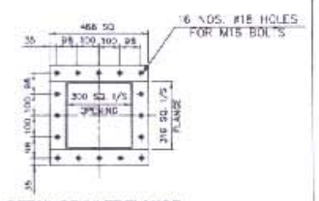
SR. NO.	PARTICULARS	THK./DETAILS/M.O.C
1	CONVEYOR NO./QTY	DC-1 TYPE-A / 1 No.
2	CONVEYOR TYPE	CHAIN & CHAIN CONVEYOR
3	CAPACITY NORMAL / DESIGN	5 TPH / 5 TPH
4	MATERIAL TO BE HANDLED	SINTER DUST
5	BULK DENSITY KG/M3 FOR VOLUME / POWER	1500 (VOLUME) / 2200 (POWER)
6	MATERIAL NATURE	ABRASIVE
7	MATERIAL TEMPERATURE (°C) DESIGN / OPERATING	200°C / 160°C
8	MOISTURE PERCENTAGE	NIL
9	DESIGN PRESSURE	AMBIENT
10	PARTICLE SIZE	FINE
11	CONVEYOR PROFILE	HORIZONTAL
12	NO. OF INLETS	2
13	NO. OF OUTLETS	1
14A	TYPES OF FEED	CONTROLLED FEED
14B	HEIGHT OF MATERIAL FILLING AT IT'S MAX. CAPCITY IN CONV.	40 mm
15	SIZE OF CONVEYOR	
	i) WIDTH	500 mm I/S
	ii) HEIGHT (INT. CASING)	395 mm
	iii) HEIGHT (TENSION CASING)	395 mm
	iv) HEIGHT (DRIVE CASING)	500 mm
16	CASING TYPE	STANDARD
17	DIST.BETWEEN INLET TO OUTLET	6925 mm
18	CONVEYOR CHAIN SPEED (M/SEC)	0.049 M/Sec
19	CASING/CHUTE DETAILS	
	i) M.O.C. OF BOTTOM PLATE	IS 2062
	ii) BOTTOM PLATE THK FOR INT. CASING	6 mm
	iii) BOTTOM PLATE THK FOR DRIVE & TENSION	6 mm
	iv) SIDE PLATE THICKNESS / MOC	
	FOR INTERMEDIATE CASING	5 mm / IS 2062 Gr.A
	FOR DRIVE END CASING	10 mm / IS 2062 Gr.A
	FOR TENSION END CASING	10 mm / IS 2062 Gr.A
	v) COVER PLATE THICKNESS / MOC	
	FOR INTERMEDIATE CASING	5 mm / IS 2062 Gr.A
	FOR DRIVE END CASING	5 mm / IS 2062 Gr.A
	FOR TENSION END CASING	5 mm / IS 2062 Gr.A
20	WEAR LINER	
	i) TOP WEAR STRIP THK./MOC	10 THK. / HARDOX 400
	ii) BOTTOM WEAR STRIP/ MOC	HARDOX 400
	iii) SIDE LINER THICKNESS / HIGHT	CAST BASALT / 100
	iv) BOTTOM LINER	CAST BASALT
21	CONVEYOR CHAIN	
	i) MAKE	DEMECH (3002)
	ii) CHAIN BREAKING LOAD (APPROX)	22 TON
	iii) NO.OF STRANDS	1
	iv) M.O.C. OF CHAIN / CHAIN PITCH	20 Mn Cr S. CHAIN PITCH 142 mm
	v) M.O.C./TYPE OF FLIGHT	IS 2062 / T TYPE
	vi) FACTOR OF SAFETY	58.49
	vii) FLIGHT HEIGHT / THICKNESS / FLIGHT PITCH	90 / 10 / 142
22	SURFACE HARDNESS OF CHAIN LINKS	
	i) HARDNESS IN RC	50 - 55
	ii) CASE DEPTH (APPROX.)	0.45 TO 0.65 mm MINIMUM
23	BEARING / PLUMMER BLOCK	
	i) MAKE (PLUMMER BLOCK)	WASTA
	ii) BEARING	SKF
	iii) TYPE	SPHERICAL ROLLER
	iv) METHOD OF LUBRICATION	GREASE NIPPLE
	v) SIZE OF DRIVE SHAFT BEARING+ADAPTER SLEEVE / PLBLOCK	450 / 22211 EK SNA 511
	vi) SIZE OF TENSION SHAFT BEARING+ADAPTER SLEEVE / PLBLOCK	450 / 22211 EK SNA 511
24	SHAFT	
	i) M.O.C.	
	ii) DIA AT CONVEYOR SPROCKET	80 mm EN 24
	iii) DIA AT TRAILING WHEEL	60 mm EN 24
25	HEAD SPROCKET	
	i) TYPE / MAKE	TOOTHED RIM / DEMECH
	ii) M.O.C. RIM / HUB	EN353 / IS 2062
	iii) SURFACE HARDNESS OF THE RIM	50-55 RC
	iv) DEPTH OF HARDNESS	0.8-1.2
	v) NO. OF TEETH / PCD	6 / 284.00
26	TRAILING WHEEL / IDLER WHEEL	
	i) TYPE / MAKE	CROWNED RIM / DEMECH
	ii) M.O.C. RIM / HUB	EN353 / IS 2062
	iii) SURFACE HARDNESS	50-55 RC
	iv) DEPTH OF HARDNESS (CASE)	0.8-1.2
	v) O.D. TRAILING WHEEL	*270
27	DRIVE DETAILS (MOTOR + GEARBOX)	
	i) MOTOR	3 PH, 415 V, 50 Hz,
	ii) MAKE	ABB/BHARAT BIJLEE/KOEL/CGL/SIEMENS
	iii) RATING /MOUNTING TYPE	2.2 KW / FOOT MOUNTED
	iv) GEAR BOX MAKE/ TYPE	RMW/CREAVES COTTON/PREMIUM/LELECON, SHAFT GEARS / HELICAL GEAR BOX
	v) GEAR BOX O/P RPM	12.5 +/-
28	INPUT COUPLING	
	i) TYPE	SIMPLEX
	ii) PITCH	1
	iii) NO OF TEETH ON DRIVE / DRIVEN SPROCKET	15/57
29	OVERLOAD PROTECTION	
	i) ELECTRICAL	ZERO SPEED SWITCH
	ii) MAKE	UNIVERSE / PROTOCONTROL/AS SYSTEMS
	iii) MECHANICAL	MECHANICAL SHEAR PIN
	iv) MAKE	DEMECH
30	TYPE OF TAKE UP ARRANGEMENT	SCREW TAKE-UP
31	TYPE OF SHAFT SEAL	GLAND PACKING
32	LOCATION	OUTDOOR
33	SURFACE PREPARATION	MECHANICAL CLEANING
34	PAINT PRIMER / FINISH PAINT	ZINC PHOSPHATE PRIMER / SYNTHETIC ENAMEL PAINT
36	TYPE OF SUPPORT	FIXED/ SLIDING
35	TOTAL WEIGHT OF CONVEYOR (APPROX.)	3.38 TON

SUBMITTED FOR APPROVAL | INFORMATION | REFERENCE | RECORD | CONSTRUCTION

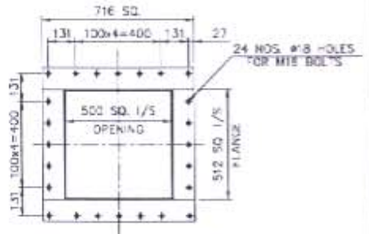
ALL DIMENSIONS ARE IN MM

CUSTOMER NOS: R4E4 & R4E5

APPROVE
approved for the general
drawings and specifications
approval does not relieve the
responsibility for
suitability
fitment
satisfactory
offered as a performance
obligations as per contract.
R.BEHERA
AGM, CET
12/9/13

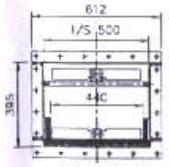


DETAIL OF INLET FLANGE



DETAIL OF OUTLET FLANGE

CHAIN LINK ASSLY.WITH FLIGHT (8)



SECTION C-C

FOR APPROVAL
DATE 12.9.2013
DEMECH, PUNE

DEMECH DECCAN MECH. AND CHEM. INDUSTRIES PVT. LTD
75, BHOSARI INDUSTRIAL AREA, PUNE - 411026

client M/S. BHARAT HEAVY ELECTRICAL LTD
project ROURKELA STEEL PLANT
title G.A. DRG & DATA SHEET OF DRAG CHAIN CONVEYOR TYPE-A

DRN.	CHD.	APPD.	DATE.	SCALE	JOB NO.	REV.
RHN	SALIM	VSK	25.08.13	-	MH-1394	C

DRG. NO. MH-1394-HCC01-001

REV. NOS.	REVISION	ZONE	DATE	CHD.

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: BHEL — BHARAT HEAVY ELECTRICALS LIMITED
SUB CONTRACTOR: DECCAN MECHANICAL AND CHEMICALS INDUSTRIES PVT. LTD. PUNE

ACTIVITY	NAME&SIGN	DATE
DRAWN BY	RHN	28.8.13
DESIGNED BY	SALIM	28.8.13
CHKED BY	SALIM	28.8.13
APPROVED BY	VSK	28.8.13

SAIL RSP DRG NO:PD/R/
DEPT: SINTER PLANT-1
TITLE G.A DRG & DATA SHEET OF DRAG CHAIN CONVEYOR TYPE-A
SCALE : 4:5
PROJECT DRG NO:RSP/SP-1-ESP/M/DE/032
B-D. DRAWING NO. 1-725-27-47-002
SHEET 1 OF 1
REV. 00

SAFETY CODE

FOR

CONTRACTORS

SAFETY ENGINEERING DEPARTMENT

ROURKELA STEEL PLANT

SAFETY CODE FOR CONTRACTORS
(REVISED FROM JANUARY,2005)

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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)