

## SCOPE OF WORK

**Subject:**

Refurbishment of Boiler - Replacement Of Econamiser Lower Coil, Econamiser Upper coil, Reheater Front Coil & Reheater Rear Coil.

Replacement of Econamiser Lower & Upper Coil, Reheater Front & Rear Coils, of Boiler Unit # 1, & U#2 at Adani Dahanu Thermal Power Station (Adani Electricity Mumbai Ltd 2 x 250 MW) located at Dahanu, Dist Palghar, Maharashtra.

## PROJECT INFORMATION

### BACKGROUND

AEML has pulverized coal-based Power Plant at Adani Dahanu Thermal Power Plant, Dist-Palghar, Maharashtra. The said client will be undertaken Replacement of Econamiser Lower & Upper Coil, Reheater Front & Rear Coils of Units #1 & 2 of 250 MW rating.

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

**Boiler Details:**

Manufacturer: BHEL C.E. Design. Type: Natural Circulation, Balance Draft, Double Pass, Single Drum, Single Reheat, Direct pulverized coal Fire, Water Impounded bottom. Pressure & Temperature: 182 kg/ cm<sup>2</sup> and 540° C, Boiler Designation: 15240 X 11506, 199 X 142.  
Type of Firing: Tilting Tangential, Total Heating surface: 24670 m<sup>2</sup>. Furnace Height: 39.965 m

**Detail Scope of Work:**
**Tentative schedule of Replacement of coils:**

**Note: Replacement of Economiser coils & Reheater coils should be staggered i.e. half of the total qty is to be replaced in the year as per mentioned in the Replacement column.**

Sr No.	Item Code	Description	Total Qty	UOM	Replacement U#1 Boiler Nov-21	Replacement U#2 Boiler Nov-22
1	1031000240	<p>Replacement of Economiser Upper Coil assembly of 250 MW Boiler.</p> <p>1. Loading, unloading &amp; Transportation of coils from store to site &amp; vice versa.</p> <p>2. Making proper safe arrangement for lowering &amp; lifting of Eco coils.</p> <p>3. Making access &amp; scaffolding for dismantling &amp; erection of Eco coils. Top elevation @ 41.949 Mtr &amp; bottom elevation of coil @39.219 Mtr.</p> <p>4. Removal &amp; Refixing of insulation &amp; cladding sheets as per requirement.</p> <p>5. Removal of pins from supporting plates &amp; lowering of existing coil assemblies, cassette baffles to ground floor.</p> <p>6. Erection of new coils, alignment, edge preparation, fit-up &amp; welding.</p> <p>7. Steam cool wall tubes &amp; Economiser 90-degree bends alignment, edge preparation, fit-up &amp; welding.</p> <p>8. Radiography of welding joints.</p> <p>9. Fixing of new Cassette baffles. If required old cassette baffles is to be removed from old coils &amp; refixing on new coils.</p> <p>10. Tentative width of coil 2730 MM &amp; length 8500 MM, No of Tube rows 22 no's, Tube OD 44.5 MM Thk 4.5 &amp; 5.0 MM, Material SA 210 Gr A1.</p> <p>11. All consumables like filler wires, welding rods, grinding machines / Tube Cutting machines, DA &amp; Oxygen cylinders, Argon cylinders 99.99% purity etc. is in the scope of contractor.</p> <p>12. All T&amp;P's, welding machines are in the scope of contractor.</p> <p>13. Maintenance scrap / balance material / old coils shall be return to store.</p> <p>14. Ensure Proper housekeeping during working &amp; after completion of job.</p>	318	Nos	159	159

Sr No.	Item Code	Description	Total Qty	UOM	Replacement U#1 Boiler Nov-21	Replacement U#2 Boiler Nov-22
	1031000241	<p>Replacement of Economiser Lower Coil assembly of 250 MW Boiler.</p> <p>1. Loading, unloading &amp; Transportation of coils from store to site &amp; vice versa.</p> <p>2. Making proper safe arrangement for lowering &amp; lifting of Eco coils.</p> <p>3. Making access &amp; scaffolding for dismantling &amp; erection of Eco coils. Top elevation @ 38.449 Mtr &amp; bottom elevation of coil @ 36.759 Mtr.</p> <p>4. Removal &amp; Refixing of insulation &amp; cladding sheets as per requirement.</p> <p>5. Removal of pins from supporting plates &amp; lowering of existing coil assemblies, cassette baffles to ground floor.</p> <p>6. Erection of new coils, alignment, edge preparation, fit-up &amp; welding.</p> <p>7. Steam cool wall tubes &amp; Economiser 90-degree bends alignment, edge preparation, fit-up &amp; welding.</p> <p>8. Radiography of welding joints.</p> <p>9. Fixing of new Cassette baffles. If required old cassette baffles is to be removed from old coils &amp; refixing on new coils.</p> <p>10. Tentative width of coil 2730 MM &amp; length 8500 MM, No of Tube rows 22 no's, Tube OD 44.5 MM Thk 4.5 &amp; 5.0 MM, Material SA 210 Gr A1.</p> <p>11. All consumables like filler wires, welding rods, grinding machines / Tube Cutting machines, DA &amp; Oxygen cylinders, Argon cylinders 99.99% purity etc. is in the scope of contractor.</p> <p>12. All T&amp;P's, welding machines are in the scope of contractor.</p> <p>13. Maintenance scrap / balance material / old coils shall be return to store.</p> <p>14. Ensure Proper housekeeping during working &amp; after completion of job.</p>	318	Nos	159	159
3	1031000242	<p>Replacement of Reheater Front Coil assembly of 250 MW Boiler.</p> <p>1. Loading, unloading &amp; Transportation of coils from store to site &amp; vice versa</p> <p>2. Making proper safe arrangement for lowering &amp; lifting of Reheater coils.</p> <p>3. Making access &amp; scaffolding for dismantling &amp; erection of Reheater coils. Top header elevation @ 58.784 Mtr &amp; coil bottom elevation @ 45.341 Mtr.</p>	130	Nos	65	65

Sr No.	Item Code	Description	Total Qty	UOM	Replacement U#1 Boiler Nov-21	Replacement U#2 Boiler Nov-22
		<p>4. Removal &amp; Refixing of insulation &amp; cladding sheets as per requirement.</p> <p>5. Penthouse cleaning /removal of ash.</p> <p>6. Removal of existing refractory &amp; application of new refractory.</p> <p>7. Lowering of existing coil assemblies, spacer tubes &amp; supports.</p> <p>8. Erection of new coils, alignment, edge preparation, fit-up &amp; welding.</p> <p>9. Cutting &amp; Refixing of supports / roof seal bands / crown plate, heat shield, flexible connectors and scalloped lugs. include all types of supports for coils and supports for spacers tubes &amp; roof skin plates.</p> <p>Reheater interconnection (interconnecting tubes to Reheater front coil assembly to Reheater rear coil assembly).</p> <p>10. Lowering, erection, cutting, edge preparation, fit-up &amp; welding of rear arch tubes /water wall tubes &amp; dog house roof skin sheets.</p> <p>11. Erection of spacer tube alignment, edge preparation, fit-up &amp; welding</p> <p>12. Radiography of welding joints.</p> <p>13. Tentative width of Reheater coil assembly 1500 MM width &amp; length 13500 MM.</p> <p>14. All consumables like filler wires, welding rods, grinding machines / Tube Cutting machines, DA &amp; Oxygen cylinders, Argon cylinders 99.99% purity etc is in the scope of contractor.</p> <p>15. All T&amp;P's, welding machines are in the scope of contractor.</p> <p>16. Maintenance scrap / balance material / old coils shall be return to store.</p> <p>17. Ensure Proper housekeeping during working &amp; after completion of job.</p>				
4	1031000243	<p>Replacement of Reheater Rear Coil assembly 250 MW Boiler.</p> <p>1. Loading, unloading &amp; Transportation of coils from store to site &amp; vice versa</p> <p>2. Making proper safe arrangement for lowering &amp; lifting of Reheater coils.</p> <p>3. Making access &amp; scaffolding for dismantling &amp; erection of Reheater coils. Top header elevation RH2 @ 60.211 Mtr, RHH3 @58.911 Mtr &amp; coil bottom elevation @ 47.00 Mtr.</p> <p>4. Removal &amp; Refixing of insulation &amp; cladding sheets as per requirement.</p> <p>5. Penthouse cleaning /removal of ash.</p> <p>6. Removal of existing refractory &amp;</p>	130	Nos	65	65

Sr No.	Item Code	Description	Total Qty	UOM	Replacement U#1 Boiler Nov-21	Replacement U#2 Boiler Nov-22
		application of new refractory. 7. Lowering of existing coil assemblies, spacer tubes & supports. 8. Erection of new coils, alignment, edge preparation, fit-up & welding. 9. Cutting & Refixing of supports / roof seal bands / crown plate, heat shield, flexible connectors and scalloped lugs. include all types of supports for coils and supports for spacers tubes & roof skin plates. Reheater interconnection (interconnecting tubes to Reheater front coil assembly to Reheater rear coil assembly). 10. Lowering, erection, cutting, edge preparation, fit-up & welding of rear arch tubes /water wall tubes & dog house roof skin sheets. 11. Erection of spacer tube alignment, edge preparation, fit-up & welding 12. Radiography of welding joints. 13. Tentative width of Reheater coil assembly 2000 MM width & length 13200 MM. 14. All consumables like filler wires, welding rods, grinding machines / Tube Cutting machines, DA & Oxygen cylinders, Argon cylinders 99.99% purity etc is in the scope of contractor. 15. All T&P's, welding machines are in the scope of contractor. 16. Maintenance scrap / balance material / old coils shall be return to store. 17. Ensure Proper housekeeping during working & after completion of job.				

- Contract is valid from **01/09/2021 to 31/03/2023**. Entire work shall be carried out / completed as per the instruction of Site In charge.
- Work will be carried out round the clock basis during the shutdown as per the instruction of Engineer In-charge. Vendor will also arrange adequate manpower in three shifts for completing the job successfully in scheduled time.
- Offers must be submitted without any deviation. Offers received with any deviation or without relevant information as described above are liable to be rejected.
- Erection & dismantling of scaffolding & platforms wherever required for dismantling & erection of Economiser lower, Economiser upper coils & Rehaeater Front & Rear coils is in the scope of contractor. Scaffolding & platforms material will be in the contractor's scope. Double type of scaffolding to be erected & certificate of stability by competent agency to be made available. Making suitable & safe arrangement for shifting, lowering & lifting of coils, installation of winches as per safe load requirement, ropes & temporary plate forms, scaffolding required for coils.

5. Scaffolding in first pass (@ 8.5 Mtr up to 55.86 Mtr in furnace Water wall area) Quick erect type (Upright Make) scaffolding to be erected up to roof level, only for this scaffolding Quick erect scaffolding material will be provided by M/s ADTPS free of cost. Transportation To & fro of scaffolding material from store to Boiler site is in the scope of vendor. All the required material to be issued by ADTPS shall have to be handled safely with good engineering practices and any unused material shall be returned after completion of job. The material shall be issued / returned as per procedure / practice of ADTPS.
6. Contractor shall mobilize all resources, which will be required for successful and timely completion of the job for day-to-day normal work & during the shutdown. Responsibility of the contractor to provide necessary manpower within time frame along with supervision during the Replacement of Economiser coil & Reheater coil in u#1 &U#2 Boiler.
7. All the required material to be issued by ADTPS shall have to be handled safely with good engineering practices and any unused material shall be returned after completion of job. The material shall be issued / returned as per procedure / practice of ADTPS.
8. External & internal cleaning of Boiler (First pass & second pass) by water washing / air and if required by wire brush. Removal ash from Penthouse, First Pass & second pass. Transportation of accumulated ash / debris from work site to designated area is in the scope of contractor.
9. Scaffolding / platforms for dismantling & erection of Economiser coils / Reheater coils by cutting Doghouse bottom side, rear arch tubes, Water wall tubes, steam cool wall rear side tubes & than reinstalled the same as per requirement at site. All types of scaffolding/platform material, gratings etc. which is required for the erection of coils is in the scope of vendor/contractor.
10. Making access for coil feeding to the location is in the scope of contractor.
11. Temporary feeding arrangement at furnace & restoration is in the scope of contractor.
  - a. Making the safe approaches for the dismantling & erection of the coils.
  - b. Removal of aluminum cladding sheets, insulation & reinstallation after completion of work.
  - c. Cutting of rear side steam cool wall tubes as per requirement & reinstallation after completion of work.
  - d. Dismantling of doghouse structure, removal of skin plates, breaking & removal of refractory & reinstallation after completion of work.
  - e. Removal of rear arch tubes, removal of skin plates, breaking & removal of refractory & reinstallation after completion of work.
12. Interconnection in between Reheater front coil & reheater rear coil is in the scope of contractor.
13. Economiser bends with header to be replaced along with the coils, is in the scope of contractor.
14. Eco I/L, Eco Intermediate, Eco O/L, RH I/L & RH O/L headers stub joints cleaning & DPT to be carried out 100 %, if any defect found stub joint is to be replaced.
15. Removal of old cassette baffles from old coils (Economiser lower & upper coils) & if required refixing on new Economiser lower, upper coils.
16. Removal of old supports from RH Front & Rear coils & if required refixing on new RH Front & Rear coils
17. Contractor shall attend to any defects noticed during hydro / vacuum test, Boiler light up & commissioning.
18. Pre-erection checks:
  - a. Check the length & width of the coil, flexible connections availability & welding as per drawing.
  - b. Erected items should be protected from workman climbing on them & water falling on them. Caps shall be ensured on tubes & links until final fit-up & welding is done.
  - c. Erection attachment /lifting attachment that are welded to the components shall be removed / cutoff after completing the erection without damaging the components.
  - d. Remove the end caps & carry out sponge test & than fix all the end caps. The end caps are to be removed only at the time of final fit up.

- e. Check for damage like sling marks, deep cut & dent etc.
  - f. Check the weld end connections such as edge preparation & ID & compare with header stub side weld end connections.
  - g. Clean the edge preparation.
  - h. Check for any permanent bow / bends in coils / tubes & ensure it is corrected.
  - i. The cassette baffle plates for Eco can be pre-assembled & then the coils can be erected.
  - j. Before lifting the coil ensure there is no chocking in the coils BY Sponge test.
  - k. Before lifting the coil flush the coil by means of air/water / steam.
  - l. Check the entire Boiler to make certain that, all temporary ties to structural steel are removed.
19. Prior to erection all headers, lines, links, tubes, elements panels etc. shall be checked for clear internal passage.
20. Radiography:
- a. The Radiography firm shall possess a valid License for carrying out radiography issued by the Atomic Energy Regulatory Board (AERB) with validity up to the duration of our contract.
  - b. The Radiography firm shall obtain the AERB Source Movement approval prior to the mobilization of the Radiographic source.
  - c. Specialized manpower with NDT Level II certified in the Radiography / UT with min. 05 years' experience to be deputed at site for radiography evaluation.
  - d. 100 % Radiography of welding joints to be done. (Phase Array Ultrasonic Testing (PAUT) or Close Proximity Radiography / Small Controlled Area Radiography/ SAFE Rad radiography may be used to complete the job within time frame)
21. Removal and relaying of insulation wherever applicable related to execution of this job. Following Insulation related material will be in the scope of M/s ADTPS.
- a. Rockwool Insulation – 100 kg / cubic meter density, Thickness of matrices 80 / 75 & 50MM
  - b. Cladding sheet – 0.71 MM Thickness
  - c. Fixing pins (dia 6 mm)
- Following will be in the scope of contractor:
- a. All types of hand tools, Equipments / Machines required for sheet metal work /fabrication work like Bending Machine & Cutters etc required for completing the insulation work.
  - b. Consumable items like self-tapping screws etc.
  - c. Workers safety equipments / PPE
22. All Insulation cladding sheets / steel structure / gratings should be removed properly to reuse the same.
23. Transport (Truck / Trolleys /Hydra etc) required, for shifting of material (inside the plant premises), will be arranged by the contractors with test certificates.
24. Arrangement required for flushing of the coils at ground floor is in the scope of the contractor, however only tubes (min 25 mtrs) required for testing of coils arrangement will be provided by ADTPS. All other arrangement is in the scope of contractors.
25. Temporary arrangement Testing of coil required for the hydraulic test of reheater with external pumps for hydraulic test, is in the scope of contractor. Isolating device in HRH & CRH Circuit to be installed for hydraulic testing & after completion same is to be removed.
26. For high pressure welder IBR Certificate required & to be submitted to ADTPS.
27. Quality Of Work:
- a. All coils should be erected in proper alignment.
  - b. All tubes should be cut with the tube cutting machines / grinding machines.
  - c. All fit-up should be in proper alignment & joint gap should be min 2.0 to 2.5 mm.
  - d. Edge preparation of the tube should be done as per standard.
  - e. Comply with the field welding procedure while carrying out the welding.
  - f. Welding consumable like welding rods should use only D&H make.
  - g. Filler wire make should be Japan Kobe, D&H only.
  - h. Gap should be maintained between Reheater rear coil bottom & top of rear arch tubes (200 MM).To be confirmed actual at site.

- i. Welding machines should be use only branded make i.e. L&T, Adore, Essab etc & test certificate to be submitted to ADTPS.
- j. Welding oven should be in working condition & test certificate to be submitted to ADTPS.
- k. Hydraulic test is to be conducted after all welding of pressure parts & attachment welding on pressure parts are completed for Econamiser coils & reheater coils.
- l. Air leak test is to be conducted for leakages in the Penthouse. Furnace & Doghouse, if found leakages all defects should be attended.
- m. After site hydraulic test of the Boiler no welding shall be performed in pressure parts.
- n. "The entire work shall be carried out as per the specifications and to best of workmanship in the most professional way and to the satisfaction of Engineer in Charge."
- o. The work, depending on nature is to be carried out by experienced and suitably qualified and skilled manpower. To ensure the same owner may ask and check the qualifications and skill sets of the technicians and only after approval of the Engineer in Charge, they shall be deployed for the work.
- p. The workplace after completion of the work shall be duly cleaned by the contractor. All scrap materials shall be returned to scrap yard after proper segregation.
- q. If required all types of arrangement for the acid cleaning is to be done.
- r. Penthouse Reheater area to be airtight for this after completion of work & hydro test total area is to air sealed by means of flexible airtight sealing made from layers of ceramic fiber blanket, high temperature ceramic sealant a special anti-corrosion ceramic paste all tightened by steel mesh.

**28. PERIOD OF COMPLETION:**

Entire works as per SOW are to be completed within a period of **35 days from** the date of start of work till completion of all activities. It is to be noted that time is essence of the contract and the job should be completed to the fullest satisfaction of AEML within the specified time. In the event of delay in completion of the job, action will be taken as per relevant clauses of contract.

- a. Service Period Between Date 01-09-2021 and Date 31-03-2022 for Service for Unit 1
- b. Duration for service in Days : Tentative 35 Days for Unit 1.
- c. **Unit 1 shutdown tentatively schedule from 27-11-2021 up to 31-12-2021.**
- d. Service Period Between Date 01-09-2022 and Date 31-03-2023 for Service for Unit 2
- e. Duration for service in Days : Tentative 35 Days for Unit 2.
- f. **Unit 2 shutdown tentatively schedule from 27-11-2022 up to 31-12-2022.**
- g. WO validity period : 01-09-2021 to 31-03-2023

**29. MANPOWER & T&P:**

- a. Adequate manpower, T&P along with consumables should be deployed at site and should reach the site immediately on placement of LOI. All the lifting tools /measuring instruments shall be duly tested / calibrated and valid certificate to that effect should be submitted to AEML Site In-charge before start of the work.
- b. A deployment plan along with experience and name of the Site In-charge, Engineers, Supervisors, Foreman, and main technicians to be submitted on per shift basis.
- c. Four safety officers in each shift are to be provided for AEML site office to be provided.
- d. Special Manpower: Successful bidder has to engage ex-BHEL Engineers one for each area (i.e. For Erection of Econamiser Lower & Upper coil & Reheater Front & Rear Coil) with more than 25 years of experience in erection & overhaul of Boiler pressure parts. During entire overhauling period in consultation with AEML. In case of failure of deployment of above engineers, a deduction of Rs.4,000/- per day for each engineer shall be made from the bills by AEML. The above engineers are required at least 10/15 days before start of work and three days after full load operation of the machine.



- e. All the tools and tackles/measuring instruments shall be duly tested/calibrated and valid certificate to that effect should be submitted to our site in-charge before the start of work.

**TENTATIVE MANPOWER LIST:**

Sr.No.	Description	Nos
1.	Site In-charge	1
2.	Supervisors	20
3.	Fitters	25
4.	Riggers	25
5.	Grinders	25
6.	Gas Cutters	25
7.	Welder	22
8.	Electrician	8
9.	Unskilled worker	140
10.	HP Welder	20
11.	Insulation lager	30
12.	Quality Inspector	06
13.	Safety Inspector	08

This is an indicative list; the contractor shall deploy adequate manpower to carry out the work round the clock in three shift and as per requirement of the site during execution.

Note: Site in-charge should be qualified Engineer, B.E. (Mechanical) and all the supervisors should have diploma in engineering & having experience in the field of Boiler erection of minimum 05 years.

**TENTATIVE MAJOR T & P LIST:**

Sr.No.	Description	Nos
1.	Welding Generator with accessories	25
2.	Portable Grinding Machines of assorted sizes / types	25
3.	Tube cutting machines	10
4.	Welding cable	As per requirement
5.	Gas cutting set	25
6.	Wire ropes & Pulleys	As per requirement
7.	Extension Boxes with ELCB	As per requirement
8.	Chain pulley blocks 3MT/5MT/10MT cap.	20 / 10 / 10
9.	Lifting tackles including Slings & D shackles of assorted sizes	As per requirement
10.	Pulling Machines / Hook chooks	06
11.	24V lamps with cable and plug tops	As per requirement
12.	Crane 8 MT/ 15 MT or 30T cap.	01 no. each
13.	Hydra 12 MT cap.	02
14.	Trailer Truck	01
15.	Electric Winch 8T/10T cap. (Capacity to be ensured - safe working load )	As per requirement. For each lifting arrangement one electrical winch should be kept

		as stand by so that work could not be hampered.
16.	Measuring Tape up to 15 M length	15 nos.
17.	Grinding Machine AG-7 & GQ 4	25 nos. / 10 nos.
18.	scaffolding materials (Including scaffolding pipes, clamps & gratings etc.)	complete set /as per requirement
19.	High Pressure water jet pump	1 No
20.	MCB for electric connections	As required
21.	Tube bending machine	As required <b>(is mandatory)</b>
22.	Edge beveling /preparation machines	02 Nos

This is an indicative list of the T&P, adequate quantities of T&P is to be mobilize to carry out the work round the clock in three shift to ensure the completion of job within stipulated time schedule.

30. CONSUMABLES: All types of consumables is in the scope of contractors.
31. Adequate quantities of consumables like Argon gas 99.99 % Purity, Oxy- Acetylene gases and welding electrodes as required along with cutting / welding set / argon welding sets, Welding rods & filler wires etc shall be arranged by the contractor.
32. Worker should wear the hand gloves, goggles & mask while carrying out the work at site.
33. Contractor has to resolve all Technical issues pertaining to poor workmanship or other related work, after commissioning of Unit before leaving the site for critical issues or within DLP depending upon nature of defect.
34. ADTPS reserves the right to modify / alter / delete / item quantity, if found necessary while placing order or during execution / contract period without assigning any reasons.
35. After commissioning of Unit, vendor shall retain their manpower for housekeeping & returning the material & scrap material to the stores.
36. Mobilization: Within 15 days from the date of NTP. Contractor shall mobilize at site one month / as decided during the placement of PO, before to shutdown with all resources & for gate pass, safety training, accommodation, material shifting at site & pre-shutdown activities. The contractor shall provide names and details of Supervisors / Workers at the time of mobilization.
37. Engineer / Supervisor's / labor accommodation at Transit guest house at colony / Plant premises shall be provided by ADTPS free of cost at ADTPS during execution of work (Housekeeping / Linen charges not applicable).
38. Contractor shall ensure at his own cost that all foremen and site in charge shall necessarily have cell phones for effective communication working in plant premises. Cell nos if changed must be informed to engineer in charge
39. Before taking up any job, the contractor has to collect the work permit / clearance from EIC. However, contractor shall have to satisfy himself with the isolations made before start of work.
40. The contractor shall ensure complete safety of his workmen as well as safety of the equipment during the entire duration of this contract. Non-adherence of safety rules and regulations and damages to equipment due to negligence will make the contractor liable for penalty and other actions. Noncompliance to safety norms - penalty as decided by ADTPS 's Safety In-charge per incident shall be binding to contractor as per Annexure A .
41. PPE's required for execution of work is in the scope of contractors. All required safety PPEs are mandatory as per requirement however Safety helmets, Safety shoes & hand gloves are mandatory while execution of work.
42. If the Engineer-in-Charge is not satisfied with the rate of progress of the work or the workmanship, ADTPS reserves the right to terminate the contract / agreement and deploy another contractor or daily laborers to make good the bad/substandard work. If the cost of such deployment is more than the contractual rates / amount, the differential cost will be charged to the original contractor.
43. If at any time, it is found that the manpower deployed by the contractor is not enough and the contractor is not able to deploy required workmen due to any reason, ADTPS shall have

- the option to deploy their workmen or make alternative arrangement at the contractor's risk and cost.
44. The contractor, his foreman / supervisor / safety inspector or authorized personnel shall be available at the site at all the times to receive instructions from Engineer-in-Charge.
  45. Contractor shall follow all necessary safety practices to avoid injury / accidents to personnel and damage to equipment under his control and others. He shall follow all safety norms of ADTPS issued from time to time and shall not employ any workmen who are not skilled and unfamiliar with the risks and dangers involved in the job. The Contractor may seek the help of ADTPS's Safety department for this purpose. The contractor shall ensure that all the personnel have gone through the Safety Training conducted by ADTPS's Safety department. Any workmen violating any safety norms of ADTPS will be expelled from the plant premises forthwith / or fined as per ADTPS's Safety norms.
  46. The contractor must mobilize the working force as per the quantum of work and should be capable of executing shutdown work simultaneously at number of fronts depending upon the site requirements without any additional payment.
  47. Contractor shall follow all relevant practices related to SA-8000
  48. Contractor shall comply labor payments and submit details to ADTPS
  49. Contractor shall follow all directions given by ADTPS from time to time pertaining to legal compliances.
  50. Contractor shall maintain all up to date records pertaining to Service provided to ADTPS
  51. Contractor shall appoint a supervisor at his own cost & he shall ensure uninterrupted services & proper Coordination with ADTPS, such supervisor shall submit a daily report to Officer-in-Charge giving details of work undertaken & progress made by contractor.
  52. Contractor shall ensure that its employees are physically fit to carry out the work under this contract.
  53. Contractor shall ensure that his employees shall come with neat & clean with safety shoes as specified by ADTPS. In the event of missing of anything of the above, ADTPS reserves right to levy penalty.
  54. The manager / supervisor of the contractor shall ensure that it will provide following documents & detail information to Officer-in-Charge (HR / Safety)
    - (a) Photograph
    - (b) Address proof issued by Govt Authority showing DOB
    - (c) Police verification report
    - (d) Original work license details. (Gumasta)
  55. The Contractor shall make his own arrangements for transportation of man.
  56. All safety aspects of workers to be taken care by the contractor.
  57. The awarded contract cannot be sub-contracted & sublet to any third party under any circumstances. Any violation may result in termination of the contract.
  58. The contractor shall not waste the materials issued to him. Most economical use of the materials like Cladding sheets, Rockwool Insulation, consumables etc. shall be the contractor's responsibility. If the wastage / excess utilization of materials is not within the permissible limits, recovery for the excess quantity used or wasted will be recovered from the contractors.
  59. **RATES:**

Bidders should quote lowest and most competitive lump sum price for total works and based on this value evaluation for L1 shall be decided.

Rates quoted by the bidder should be exclusive of GST on applicable scope of work .
  60. **Mobilization of site:**

The requisite manpower, consumables, T&P, etc. must be mobilized immediately so that the work can be started from day one with full force.

It may be noted that mobilization of manpower, consumables and T&P is not done as per the agreed terms by contractor then a penalty of 25% as specified in terms of payment will be imposed by AEML.

AEML decision will be final and binding regarding penalty to be imposed for the delay of work.
  61. **Validity:**

Your offer should remain valid for twelve months from the date of Purchase order.
  62. **Statutory Inspection**

- The scope also includes getting the approvals from the statutory authorities (like IBR, labor officials). This includes arranging IBR authorities for inspection visits periodically as per requirement, submitting documents etc. and payment of fees connected with it.
63. The contractor should assure that the repair of the equipment covered in the scope of this offer will be conducted with the best of skills and know how available with contractor and in conformance with the clearances and adjustments set forth in manufacture's drawing instruments and other information's furnished to contractor.
  64. The various setting, clearances, adjustments, and benchmarks will be restored to the extent possible during rectification to the condition as per the erection and commissioning log sheets available with customer. If, however we are not able to produce erection / commissioning log sheets, efforts will be made to attend the best possible parameter or the conditions as observed at the time of dismantling of the equipment in consultation with us.
  65. The contractor must prepare BAR Chart. Daily monitoring will be done jointly, and log sheets of important activities should be noted down and signed jointly.
  66. All the works shall be carried out as per the instructions and to the satisfaction of the Engineer In-charge.
  67. The contractor will attend contributory to faulty and poor workmanship during commissioning and trial run of the equipment.
  68. Guarantee / Warrantee: The work carried out shall be guaranteed for the Twelve months from date of commissioning towards performance of the machine. Contractor will have to give guarantee for the work carried out under the scope of work. Contractor will attend any failure because of poor workmanship free of cost on priority. The contractor has to mobilize and attend the work as per customer shutdown programmed.
  69. Round the clock working under expert supervision shall be ensured by the contractor deploying two equal parallel strength of groups in 12 hrs. Shift with equal T&P for all the jobs to complete the work in stipulated period or earlier.
  70. It is the responsibility of contractor to keep the plant, equipment, machinery and surrounding area clean.
  71. The names of working persons like Site in-charge, supervisors, foreman, main fitters to be deployed during the job with full details has to be submitted stating their area of work and experience and specialization of the work to site in-charge before the start of work.
  72. AEML may ask to change the person, if not found suitable for the work at any point of time during execution of job. For any mobilization and demobilization of the working person / equipments, prior permission from AEML shall be taken.
  73. Contractors have to ensure that all the key persons must continue till completion of job i.e. machine comes on load. contractor manpower should remain at site for a period of 3 days after the commissioning of boiler.
  74. Successful bidder should mobilize the site in full strength immediately on placement of LOI / PO to carry out site activities /pre-shutdown activities.
  75. Work distribution sheet for all the workers / supervisors deployed shall be submitted to AEML one day in advance on daily basis.
  76. Contractor should mobilize additional resources such as plant, equipment's, material as may be required by site in-charge to improve the progress of the work if the progress of the work is not satisfactory.
  77. Contractor should get registered under relevant GST where the jobs are executed.
  78. Scrap and insulation etc. is to be shifted to scrap disposal area as indicated by the Engineer-in-charge on regular basis.
  79. One administrative personnel to control the resources and attendance of the workers to be ensured.
  80. If the duration of work continues beyond stipulated period due to any reason, no claim for compensation will be entertained.
  81. The work details are brief & for Contractor knowledge only. Contractor will have to do all the related works as per requirement.
  82. The contractor will be responsible to pay the damages to the property of Board or individual caused by his worker during contract. If the contractor fails to pay the same, it will be recovered from his bill.
  83. No compensation claimed for idle labor for any reason will be entertained by AEML.

84. All general tools and plants for execution of the work will have to be arranged/ maintained by the contractor at his own cost & risk.
85. In normal course, the interpretation of the undersigned on any matter or decision given by him on any disputable points will be final and binding on the contractor.
86. Successful bidder is to obtain necessary "No Dues" certificate before de-mobilization from site.
87. Successful bidder to deploy minimum two nos. of 12 T/15T Hydra-Cranes with operator & minimum one Trolley Tractor / Truck / Trailer. This is the tentative least, contractor must insure selecting safety aspects like safe load, load testing certificate, driver license etc prior to selecting the above equipments.
88. Loading & unloading of coils, Transportation of coils / materials / spares from ADTPS stores yard to work site is in the scope of contractors, engaging contractors own vehicle.
89. Removal of ash / debris / scrap & materials from work site to ash disposal area / scrap yard / stores engaging contractors own vehicle.
90. Fabrication of site store near work site if required is in the scope of contractor.
91. All tools and tackles, measuring instruments including Welding Generators (30 nos. minimum) , Gas cutting sets- 15 Nos, Bevel Proctors, 24 Volt electrical hand lamps, lifting hoist etc., as required are to be provided by the contractor. Contractor must use only 24 Volt hand lamps with protective cage in the enclosed area of work to ensure safety of workmen. These are the tentative list of tools & tackles however contractors may access the required quantity of T&P to complete the work within time frame.
92. Minimum 20 curie Radiography sources- 2 sources along with qualified personnel are to be arranged.
93. Contractor should have running IBR Registration for Pressure Parts Repair work in Maharashtra and must obtain necessary works & HP welders' approvals under section 392 of IBR from the Boiler Directorate of Steam Boiler Maharashtra. Co-ordination with boiler inspector is the responsibility of the contractor.
94. Contractor has to arrange for necessary labor license, insurance etc. for their workmen at the start of work and other necessary statutory requirements are to be fulfilled.
95. Contractor must provide necessary as per site requirement skilled, semiskilled, and unskilled manpower and supervision for the total job under the technical guidance of AEML. Contractor must provide experience supervisors, safety officers, quality inspector, HP Welders, attachment Welders, gas cutters, fitters to complete the job in time. & Site-in - charge for close supervision of work as well as providing inputs for un-interrupted progress of work.
96. NOTE: Lack of supervision / resource mobilization will be viewed seriously.
97. Contractor has to follow necessary safety regulations and Safety equipment/ accessories to be used and provided to the workers.
98. Illumination of working area is the responsibility of the contractor.
99. Cleaning, housekeeping and security arrangement for the equipment, T&P and materials/ spares is the responsibility of the contractor.
100. Necessary workforce, tools and tackles, welding machines, cutting accessories, grinding machines, argon gas with all accessories/cutting accessories, TIG welding kits, TIG welding wires, etc. required for the job shall be arranged by the contractor at their own cost. Consumable, hacksaw blades, grinding / cutting wheels, emery paper, marking cloth, cotton waste, wire brushes, etc. shall be arranged by Contractor.
101. All wastes generated during execution of overhauling works at various places shall be removed by Contractor to a place identified by the Engineer in charge.
102. Housekeeping of the area where the contractor is executing work shall be the responsibility of the contractor. Cleaning of work area during and after execution of work.
103. Coils / Scrap / Waste material should be return to store as per waste disposal procedure.
104. Contractor shall submit bills with all required documents.  
Contractor shall attach following documents with bill:
  - a. Format of invoice,
  - b. PF Challan with ECR statement copies of previous month
  - c. Employees Compensation Policy under Workmen's Compensation Act 1923.

- d. ESIC challan of previous month
  - e. GST payment challan copies,
  - f. Payment of Wages copies,
  - g. Bank guarantee certificate if applicable,
  - h. Professional tax challan of previous month if applicable.
  - i. Maharashtra Labor Welfare Fund Challan if applicable.
105. Delay in payment due to any legal noncompliance will be the sole responsibility of contract agency.
106. ADTPS security persons authorized to carry out security checks of all contract workers / any manpower of the contractor & shall also entitle to seize any item which they not supposed to carry along with through company premises. The contractor shall take necessary steps to replace such personnel from the services of ADTPS & prohibit from re-entry in future.
107. Any complaint recorded in the book maintained by the Officer-in-Charge shall be attended to, and action taken by the contractor immediately. Regarding the unsatisfactory service, behavior of personnel & damage to ADTPS property etc. appropriate deductions will be made
108. In case, the contractor fails to start work/ to carry out the work within the specified period i.e. mutually agreed schedule and the work is not found to be satisfactory / performance of the contractor is not found satisfactory and the contractor is found unable to fulfill his contractual obligations or left in between, ADTPS reserve the right to terminate the contract at any stage & without assigning any reason thereof.
109. Payment of Bills will be made after submission of the same subject to verification and certification by the Engineer-in-Charge.
110. Any other work not specifically mentioned in the above Scope Of Work but required to be carried out for completion of above work shall be Scope of Contractor.

**General Condition of Contract (SOW-GCC):**

1. The work shall be carried out in best workman like manner and with best quality materials in accordance with relevant IS / IRC / Other specifications and as to entire satisfaction of the engineer in charge.
2. The rates quoted / accepted shall be inclusive of all expenses of Material, Labor, Transportation, Tools & Plants, and Royalties (if any). GST i.e. SGST, CGST or IGST or UTGST as applicable will be added separately. TDS for Income Tax or any statutory charges enforced by Government will be deducted from bills as per the rules in force. Necessary certificate for such deductions will be provided within stipulated time. It is mandatory to quote PAN, Goods & Service Tax Registration Number in all commercial correspondence. Contractor shall submit their invoice through online GST Contractor Portal i.e <https://gstportal.adani.com/Projects/GST/SCSCConfig.nsf>
3. To avoid environmental hazards, empty packing boxes / bags / plastics and Steel Scrap shall be returned to Stores. In case of non-return of such materials, suitable amount will be deducted from the contractor's payment. Handling and disposal of waste generated (including brought out items by the Contractor) for the work carried out shall have to be done by the contractor as per the relevant MPCB / ADTPS norms. Standard Procedure for ADTPS shall have to be followed as per the instruction of engineer in charge.
4. The Electric Supply shall be given free of cost.
5. Payment term: 90 % payment within 30 days from the date of completion of work as certified by Engineer In-charge (EIC) at ADTPS site & balance 10 % shall be kept as retention & shall be released after successful completion of DLP period of 06 months from the date of synchronization of machine.
6. The contractor shall have to appoint / authorize a site-in-charge who shall be available always at site during the execution of contract and who shall obtain the instructions from ADTPS Engineer for execution of contract. Contractor shall take all the necessary measures to prevent accidents. It is the responsibility of the contractor not to allow any worker to create unsafe act, neither to work in an unsafe condition, nor with unsafe equipment. Contractor and or its safety supervisor / Coordinator shall ensure constant supervision at work site. It shall be

responsibility of the Contractor that all workers are protected from the hazards arising out of their work. Contractor shall follow all safety rules and guidelines as per the requirement of ADTPS management. The contractor shall be responsible for any accident to his workers and shall adhere to all Labor Laws of Government and other prevailing rules. He shall keep ADTPS indemnified from all liabilities. All safety equipment's required for the contractor's workmen during execution of work such as Safety Shoes, Safety Helmets, safety goggle, face shields, dust mask and respirators, Hand Gloves, Double life line Safety Belts with snap hook and shock absorber, safety net, etc must be provided by him. The PPEs provided must be of ISI or equivalent national or international standard. The contractor shall ensure 100% use of PPEs by his workers at work place.

7. All Contractors / Contractors and / or their personnel entering ADTPS premises shall carry their valid Photo Identity card (containing address and age / DoB on it) issued by Government Authority such as Aadhar Card / Driving License / Passport / Voter ID Card etc. Please note that the persons not carrying their identity proof, shall not be permitted to enter ADTPS premises. The contractor will have to insure his workman and a copy of insurance policy thereto will have to be submitted to ADTPS. The contractor will also have to obtain Comprehensive Insurance Policy of works viz. theft, fire, earthquake as well as Employees Compensation Policy / ESIC Policy, etc.
8. The contractor will be responsible for compliance of all statutory rules, regulation, act enforced from time to time framed by the government such as Factory Act, Employees Compensation Act, Minimum Wages Payment Act, Provident Fund Act, Employees' State Insurance Act, Bonus Act or any other Law enactments in respect of employees engaged by him for the work and shall have to maintain necessary records. In case any amount becomes due to be payable by him to his employees or to the Government under the above rules, regulation, Acts, ADTPS reserves the right to recover the same from him and pay to the concerned along with 25% overheads. The contractor shall obtain labor license as per Contract Labor Act from appropriate authorities and shall produce copy of license. It is the responsibility of contractor to deposit due payment / Salary of workers deployed by him for this work directly in to the bank account of respective worker and submit copy of proof of payment to ADTPS along with bill(s). Disbursement of Salary in CASH by the Contractor to the workers engaged by him is strictly not allowed.
9. Termination of contract: In case, the contractor fails to start work/ to carry out the work within the specified period i.e. mutually agreed schedule and the work is not found to be satisfactory / performance of the contractor is not found satisfactory and the contractor is found unable to fulfill his contractual obligations or left in between, ADTPS reserve right to terminate the contract at any stage & without assigning any reason thereof. Also if the material / services are not delivered as per delivery schedule, specifications and quality, ADTPS shall be at liberty to cancel the PO / WO and will not accept any claim from the Contractor.
10. Settlement of Dispute: Any dispute(s) of difference(s) arising out of or in connection with the contract shall, to the extent possible be settled amicably between the parties. Except as otherwise specifically provided in laws on arbitration here under, all under dispute (s) or difference (s) arising out of in connection with the contract shall in first instant be decided by the engineer who's decision shall be final and binding on the parities.
11. Arbitration and Jurisdiction: If at any time any question dispute or difference(s) what so ever shall arise between purchaser and the vender upon or in relation to or in connection with the work, meaning or the effect of the contract, whether during the progress of work or after completion or abandonment thereof, the same shall be referred to Arbitration according to the provision Indian arbitration act 1996., or any act of legislature passed in the substitutions or in modification thereof and for the time being in force at Palghar (Maharashtra). And the venue of arbitration shall be at Palghar. Either parties may give notices to each other in writing or the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators- one to be nominated by the purchaser and the other to be nominated by the vender, the arbitrators shall appoint an umpire in writing before proceeding with reference and award on arbitration, in case the said arbitrators not agreeing then the adjudication to the empire appointed by them shall be final and binding on the parties. Work under the contract shall be continue by the Contractor during the arbitration proceedings unless purchaser or Engineer shall order suspension thereof or any part thereof in writing or

unless the matter is such that the work cannot possibly be continue until the decision of the arbitrator or the umpire as the case may be is obtained. For legal matters the competent court of Palghar shall have jurisdiction.

12. Contractor shall provide Safety Helmet, Safety Shoes, Rainy wears and other required PPE's as per ISI approved safety PPE's etc. to his workers. If he fails to do so, the department reserves the right of holding bill for which contractor will be held responsible.
13. If Non-compliance with respect to Child Labor, Forced Labor, Prohibition or Discrimination & Disciplinary practices are observed even after serving non-compliance intimation during audits, the supplier / Contractor may face deletion from the approved Supplier's / contractor's list of irrespective of their score / weightage obtained earlier.
14. Company would not provide any subsidized facility or canteen food to the people of the contractor who are providing the services.
15. Payment shall be released on pro rata basis based on Performance evaluation of the completed portion and is to be linked to following evaluation criterion:
  - a. Mobilization & Consistency
  - b. Quality
  - c. Time Limit Compliance
  - d. Safety Rule Compliance
  - e. Legal Matter Compliance
  - f. Housekeeping & Environment Awareness Comp
  - g. Communication Compliance

Optional Criteria

- a. Handling of Local Issues
16. ADTPS is committed for Environmental, Quality, Social Accountability, Information Security Management System, Asset Management System, Energy Management and Safety Management and shall comply, all legal and regulatory requirements in force. Hence, all Contractors shall provide services/ materials meeting above requirements. Environmental Policy, Quality Policy, Safety, and SA-8000 Policy are available for ready reference.
17. Special terms and conditions supersede General Terms and Conditions and binding on the contractor

### **Mandatory Safety Compliance:**

#### **A. Safety compliance related to SOW:**

1. Work shall be carried out with valid PTW for work.
2. Safety awareness training by Safety department is mandatory
3. PPEs like hand gloves, helmets, goggles, dust mask safety shoes, apron, reflective jackets etc to be used at site.
4. Deployment of trained & experience manpower.
5. All switch boards should have RCB /ELCB with @ 30 MAMP leakage current
6. Use of tested portable tools/ Equipment's.
7. Ensure proper handling of equipments.
8. Maintain good housekeeping at workplace. through housekeeping checklists
9. Work is carried out with proper barricaded and with all precautionary measures.
10. Ensure healthiness of tools / equipments.
11. Ensure proper housekeeping during entire work execution.
12. Implementation of no smoking policy during the entire operation.
13. Legal compliances related to safety aspects are to be met by the contractor.

#### **B. Working at Height**

1. Work shall be carried out with valid PTW for work.
2. Safety awareness training by Safety department is mandatory
3. PPEs like hand gloves, helmets, goggles, double lifeline safety belts with shock absorber, dust mask safety shoes, apron, reflective jackets etc. to be used at site.



4. While working on height, use double lifeline safety belts with shock absorber, retractable fall arrestor, full Body Harness & safety nets. Grab rope with Accessories, Horizontal lifeline, etc shall be used as per the job requirement. The equipment shall meet the ISI or equivalent standard.
5. Tools to be lashed properly while working at height.
6. Use ISI quality Safety net extending 8 feet from the edge of working platform while working at height.
7. Suitable ascending and descending ladder arrangement to be made at site.
8. Scaffolding / sky climber shall be checked as per checklist.
9. Use of three-pin plug with earthing wire and joint free 3-core wire.
10. Extension board are to be provided with ELCB
11. While carrying out hot work adequate firefighting apparatus to be kept ready at site.
12. Ensure proper maintenance platforms, approaches & proper guarding of maintenance platforms with toe guard & hand railing.
13. Height pass issued by DTPS authority is mandatory.
14. Deployment of trained & experience manpower.
15. Welding & cutting spatters to be arrested by putting fire blankets / tin sheets.
16. Flash back arrestors are to be provided at cutting torch & on cylinders side also.
17. When work is carried out at height, the ground floor must be barricaded, and precautionary measures must be taken.
18. Avoid use of mobiles while working at height.
19. Legal compliances related to safety aspects are to be met by the contractor.

### **C. Working in confined space**

1. Work shall be carried out with valid PTW for work and proper isolations
2. Safety awareness training by Safety department is mandatory
3. Measure oxygen level before working in confined space by oximeter.
- 4.
5. Ensure proper ventilation - Fresh air arrangement: Fresh air blower used Provision of exhaust arrangement.
6. Ensure adequate illumination and always use of 24 V DC Supply
7. Ensure proper earthing.
8. Ensure provision of ELCB in welding receptacles
9. PPEs like hand gloves, helmets, goggles, dust mask safety shoes, safety gumboots, apron, reflective jackets etc to be used at site.
10. Suitable ascending and descending ladder arrangement to be made at site.
11. Use of tested portable electrical tools/ Equipments.
12. Ensure proper de-watering wherever required.
13. Working in short spells inside the confined area.
14. If surfaces is wet, welder uses non-conducting material like rubber mats / wooden planks,
15. Use Breathing apparatus if required.
16. Legal compliances related to safety aspects are to be met by the contractor.

### **D. Hot work**

1. Work shall be carried out with valid PTW for work and proper isolations
2. Safety awareness training by Safety department is mandatory
3. Electrical supply shall be taken through ELCB for all the electrical equipment used for hot work.
4. PPE's like hand gloves, helmets, goggles, welding shields dust mask safety shoes, apron, reflective jackets etc to be used at site.
5. Ensure healthiness of cables, hoses, clamps & Regulators
6. When hot work in carried out at height, the ground floor must be barricaded, and precautionary measures must be taken.
7. Welding & cutting spatters to be arrested by putting fire blankets / tin sheets.

8. Where a Hot Work is in progress, no other hazardous work shall be permitted in the area, which could affect the Safety of the job.
9. Gas cutting torch, pressure regulator, hoses must be IS approved.
10. Gas cylinder must be properly secured. Acetylene cylinder must be in upright position. Hoses must be connected with suitable clamps.
11. Torches & cylinders with flash back arrestors are only permitted. Check leakage in the set every time. Get defect rectified before commencement of the job.
12. Storage of gas cylinders at designated place. Gas cylinder shall never be taken upstairs/higher elevations.
13. All Gas cylinders to be provided with regulator cap.
14. Shifting and transportation of cylinders shall be done on trolley only. Do not carry gas cylinder on shellers.
15. Hot work surrounding area to be inspected and cleared off from combustibile substance
16. Grinding machine must have guard, cord in good condition and supply through ELCB. Use of grinding machine with plug top is only permitted.
17. Legal compliances related to safety aspects are to be met by the contractor.

**E. Special Environment Compliance**

1. Use personal protective gears for high noise area in the plant.
2. Ensure proper disposal as per the instructions of EIC and procedure stipulated in IMS for environment aspect like spent oil-soaked cotton waste/ Collection, handling, storage and disposal of waste / used oil and grease / Used / waste oil filters.
3. Use of dust mask & other protective gears while working in fugitive ash, coal dust emission prone area.
4. Spillage of ash and coal dust is to be collected and disposed off as per procedure.
5. Oil leakages during storage, handling, transportation and from equipments: Collection of used oil and returning to stores as per the instructions of EIC.
6. Waste Glass wool: Return to stores for disposal procedure mentioned in the IMS manual.
7. Disposal of non-hazardous metallic scrap: Ensure proper disposal as per the instructions of EIC.
8. Waste disposal as per laid down procedure in DTP/IMS/PRO/22 for waste management.
9. Legal compliances related to environmental aspects are to be met by the contractor.

**CONTRACT OPERATING AUTHORITY:**

The contract will be operative under the control of Adani Electricity Mumbai Limited, ADTPS, Dahanu.

**BILL OF QUANTITY:**

Payment will be made as per actual pro rata basis. Balance amount if any, will be paid / adjusted in last R.A. bill.

**PENALTY CLAUSE**

The contractor will ensure timely completion of the job within stipulated period. However, if any part of the job is not completed within scheduled/stipulated period, penalty will be imposed as follows:

**Penalty: Penalty Clause Chart ANNEXURE 'A':**

<b>Safety Violation – Penalty rate</b>
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Class	Type of Offense	Penalty detail
A	Not wearing Safety helmets/Welding goggles/Shield/Apron/Safety goggles/ Hand gloves (poor quality or damaged items means noncompliance)	First Offense/Second offence Penalty of Rs.250/- for shoes, Rs.250/- for Helmet/Face shields, Rs.50/- for goggles/hand gloves Third Offense Note of recommendation to issue warning letter to the concerned supervisor & removal of the worker from site with penalty of 5000/-
B	Not wearing full body harness/fall arresters while working at height more than 2 meter or wherever a person may fall.  Not using safety net to arrest falling objects and personnel. (Poor quality or damaged item means noncompliance).  Not wearing electrical gloves/Electrical safety shoes/Not using electrically safe tools and equipments (poor quality or damaged item means noncompliance)	First Offense Warning note & fine of Rs.1000/-  Second Offense Warning note and dismissal of the concerned workmen with penalty of Rs.20,00/-  Third Offense (Under same supervisor) Warning letter with note of recommendation for removal of the supervisor from the site with penalty of Rs 4, 000/-.
C	Any other unsafe work practices or condition which is considered having potential for fatality or injury to personnel. (Violation of maintenance manual/work instruction etc)	First Offense Warning note & fine of Rs.500/-  Second Offense Action on the concerned workmen/ supervisors for removal from the site and fine of Rs.1000/-
D	Reportable and Fatal accident of any workman/supervisor/staff	Reportable accident - Rs 5000/- per incident, fatal accident- Penalty of Rs 2.5 Lacs per incident + all administrative expenses, insurance expenses will be borne by vendor in reportable and fatal accident
E	Working without Permit to Work (PTW) at site /Failure to comply PTW.	Warning note & Fine of Rs.1000/-
F	Not taking measure of hot works and leading to fire incident	Rs 1000/- per incident plus Additional of actual damage Cost of the in case of fire
G	Consuming alcohol at the site/coming duty in toxic condition	Immediate removal of worker from the site and penalty of Rs.1000/-
H	Failure to maintain registers/not submitting documents prescribed under Occupational Health & safety Management System. Not employing safety officer/ coordinator	Rs.1000/- per month

I	Lifting tools & tackles under use without third party inspection & test report	<p>First Offense Warning note with removal of tools from the site &amp; fine of Rs.1000/-</p> <p>Second Offense Warning letter with the note of recommendation for removal of the supervisor from the site with penalty of Rs.100,00/-</p>
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**Penalty: Penalty Clause Chart ANNEXURE 'B':**

Penalty Clauses		
S. No.	Activity Leading to Penalty	Penalty
1	Delay in mobilization of manpower after NTP of 15 days	Deduction from the bill @ 5000 per day
2	Adherence to job completion time schedule- Contractor shall adhere to the time schedule provided for completion of the job	In case of delays in completion of the specified works beyond the stipulated time schedule, the LD applicable shall be @0.5% of the contract price during short shutdown /overhaul.
3	Maintenance Rework - Contractor shall ensure that there should be no malfunctioning of the equipment repaired service by them	<p>1) For any insulation /cladding repaired by the contractor due to reasons attributable to the contractor within six months, the contractor have to immediately deploy competent personnel to make good the same in the earliest possible time frame.</p> <p>2) In case same defect occurs again after rework, LD shall be applicable @5000/-per instance subject to max. 1% of contract price.</p>

**Skill Matrix for Contract Manpower:**

Skill Matrix for Contract Manpower				
Sr No	Category	Qualification Or Total Experience	Age Limit	Mandatory skill
1	Helper	03 Years	Above 18 years Up to 50 years	Should work in coordination with fitters and riggers and follow their instructions. Hands on experience on site and safe handling skills desirable.
2	Rigger	03 Years		Should work in coordination with fitter and follow their instructions. Hands on experience on site for boiler and safe handling skills desirable.
4	Supervisor	ITI / Diploma Or Min 5 Years		Should have experience in Power plant Boiler activities of erection & overhauling & supervision. Should be able to effectively supervise the job and able to handle the workman effectively.
5	Fitter/fabricator	ITI Or Min 10 Years		Should have handful experience in Boiler overhauling, & Insulation and refractory applications, Cladding sheet removal and fabrication works etc.

6	Grinders	ITI Or Min 05 Years	Should have handfull experience in Boiler overhauling in edge preparation & cutting of boiler tubes, IBR Certificate is Mandatory
7	High Pressure Welders	03 Years	