



**OWNER:  
THE TATA POWER COMPANY LIMITED**

**TITLE OF WORK TO BE AWARDED:  
AMC services for Miscellaneous Maintenance Activities in Balance Outside Area and  
FGD Plant Area at Trombay Thermal Generating Station for 3 years  
ENQUIRY REFERENCE NO.: CC25JG111**

## NOTICE INVITING EXPRESSION OF INTEREST (EOI) FOR-

### **AMC services for Miscellaneous Maintenance Activities in Balance Outside Area and FGD Plant Area at Trombay Thermal Generating Station for 3 years**

<b>Enquiry reference no.:</b> CC25JG111
<b>Title of Work:</b> AMC services for Miscellaneous Maintenance Activities in Balance Outside Area and FGD Plant Area at Trombay Thermal Generating Station for 3 years
<b>Type of Bidding:</b> E-tendering (through Ariba online portal) / Two Part (Technical and Price bids under separate envelopes)
<b>Contact Details:</b> <b>Contact Details:</b> All communication including EOI submission shall be addressed to following officer/s: Ms. Juhi Gaur Email: <a href="mailto:juhigaur@tatapower.com">juhigaur@tatapower.com</a> Copy of all communications shall be marked to (Cc): Mr. Kailas Surve Email: <a href="mailto:ksurve@tatapower.com">ksurve@tatapower.com</a>

The Tata Power Company Limited (“Project Manager”) on behalf of M/s Tata Power Company Limited (“Owner”) invites Expression of Interest (EOI) from interested parties for the Two-Part e-Tendering Process of following Relevant Work Package:

<b>Plant Details</b>	<b>Tender Fee</b>	<b>Bid Security</b>	<b>Estimated package value for Three years.</b>
<b>The Tata Power Company Limited, Trombay Thermal Power plant Chembur</b>	INR 2000/- (INR One Thousand Only)  To be submitted along with EOI.	INR 1, 10,000/- (INR One Lakh ten thousand only).  Bid Security to be submitted as a Bank Guarantee at the BID stage (and not with EOI)	Approx. 1.10 Cr

Table 1

### **1. INTRODUCTION:**

The Tata Power Company Limited (TPC) is among the largest private sector Power Utility companies in India with presence in Generation, Transmission and Distribution of Power through conventional and renewable sources.

The tendering/ procurement activities for this Project are being managed from Tata Power’s following Office:

The Tata Power Company Limited,  
Trombay Thermal Power Station,  
Corporate Contracts,  
5<sup>th</sup> Floor, Station B, Chembur-Mahul,  
Mumbai 400074, Maharashtra, India.

## 2. BRIEF SCOPE OF WORK:

This Notice is for inviting Expression of Interest for scope of work which includes mechanical maintenance activities of DM Plant, fire hydrant system, deluge systems, FGD and Fuel area Rotary and stationary equipment's of Trombay power station.

Detailed Scope of Work for this Contract shall be provided in the Tender / RFQ document to all potential buyers submitting the valid EOI with due tender fees.

## 3. TENDER FEE & TIMELINES:

a) Interested parties meeting the "Bidder Pre-Qualification Requirements" specified under point no. 4 in this document can request tender document and participate in the bidding process by submitting the Expression of Interest (EOI) Letter along with the Tender Fee Payment Details to the contact details mentioned below not later than deadline specified below. Request for extension of EOI submission date will be not be entertained.

**b) Interested bidders should submit the Expression of Interest (EOI) letter and tender fee payment details to below mentioned email addresses:**

- Mails shall be addressed to (To): [juhigaur@tatapower.com](mailto:juhigaur@tatapower.com)
- Must Mark a copy to (Cc): [ksurve@tatapower.com](mailto:ksurve@tatapower.com)

EOI / requests without complete information and communication as above within deadline shall be liable to be rejected and will not be considered further.

c) Tender Fee, as indicated in the Table1 above may be paid through **NEFT** as per details for payment of Tender Fee given in Table2 below:

Table 2

Details for payment of Tender Fee:	
Bank details for submitting Tender fees through bank transfer / NEFT:	Beneficiary Name: The Tata Power Company Limited Bank Name: HDFC Bank A/c no: 00600110000763 IFS Code: HDFC0000060 A/c type: CC Branch Name & Address: HDFC Bank, Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023
Deadline for tender fee payment and submission of EOI:	<b>30<sup>th</sup> September 2024</b>

**d) Expression of Interest letter to be submitted along with tender fee payment details should include the following details:**

- A covering letter duly stamped and signed by an authorized signatory clearly indicating the Tender Reference number and your EOI to participate in the tendering process.
- Tender fee payment details / reference no (ensure that tender fee is received by us within specified deadline)
- Bidder to indicate authorized person name, contact number and e-mail id (mandatory) of the person to whom RFQ / tender and all other communications to be addressed for this tender.

e) Detailed Bid Document (also referred as RFQ) shall be issued through Tata Power e-tender portal (Ariba System) only to the parties submitting a valid EOI as per terms mentioned in this document.

**4. BIDDER PRE-QUALIFICATION REQUIREMENTS:**

Interested parties to note that Bidder shall be required to fulfill the following bidder pre-qualification requirement / criteria in order to qualify for the subject work. Bidder will be required to submit relevant supporting documents to demonstrate their qualification during the bid submission stage against Tender document / RFQ and bidders not found meeting the pre-qualification requirements given below will be disqualified from the tender.

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**4.1 TECHNICAL REQUIREMENT:**

1. Bidder should have minimum 5 years of experience in Routine Maintenance, preventive & break down maintenance, trouble shooting, job planning and overhauling works of BOP plant area (DM plant, Vertical pump, Centrifugal pump(single and multi-stage), reciprocating/diaphragm Chemical dosing pump and piping) and deluge system, FGD includes Scrubber pump house (vertical pump and centrifugal/screw type blower, Centrifugal blower, Vacuum pump, Syphon pipe, ARV, sea water Filtration plant etc.) and various associated piping working media sea water/DM water and service water for mechanical equipment's for power plant.

2. The bidder should provide a minimum of two references of having contract value Rs. 25 Lakhs (Indian Rupees Twenty-Five Lakhs) for successfully rendered for operation or

maintenance works in last five years. (Attach Certificate of Experience and Satisfactory Completion of work awarded from concerned Establishments / Companies)

**SUPPORTING DOCUMENTS (to be submitted with Technical Bid):**

- a) Valid ISO Certificates True Copy
- b) PO Copy, Completion Certificate from the concerned client in support of successful execution of jobs /reference projects to be submitted.
- c) Experience details of past 03 years should be submitted as per the following table format:

1	2	3	4	5	6
Sl. No.	Client details/ Power plant details	Order No. Date & Year	Contract Tenure	Order value	Details of scope of work

**4.2 SAFETY REQUIREMENT:**

Bidder / Tenderer should preferably have ISO 9001 / ISO 14001 / ISO 45001 certification or must give an undertaking for its willingness to obtain the same within 2 months of qualification for the work.

**4.3 FINANCIAL REQUIREMENT:**

Bidder / Tenderer should have a minimum Average Annual Turn-over of Rs. 50 Lakhs (Indian Rupees Fifty lakhs) during the last three financial years (Attach Profit & Loss Certificate with UDIN from Chartered Accountant in this regard).

Audited Balance Sheet and Profit & Loss Statement for last the previous three completed financial years reckoned from the date of application. In case the audited documents are not ready / available, then certified copy by a registered practicing Chartered Accountant may be submitted.

**5. BID SECURITY / EMD:**

Interested parties to note that Bidder will be required to furnish a Bid Security along with their Bid, in the format prescribed in Bid Document **in the form of EMD**, for an amount as defined in the covering page of this notice document. Bids not accompanied by an acceptable Bid Security shall be rejected by the Owner as being non-responsive and returned to the bidder without being opened.

**Interested parties to note that Bid Security is not required with the EOI and it is required to be submitted with the Bid only during Bid Submission stage, once RFQ is released to the interested parties that have submitted a valid EOI.**

**6. BIDDING PROCESS:**

Detailed Bid Document (also referred as RFQ) shall be issued through Tata Power e-tender portal (Ariba System) only to the parties that submitted a valid EOI as per terms mentioned in this document.

Bidder to note that commercials for subject tender may be conducted through e-auction. Detailed bidding and auction process shall be detailed in the RFQ / tender document.

## **AMC services for Miscellaneous Maintenance Activities in Balance Outside Area and FGD Plant Area at Trombay Thermal Generating Station.**

### **Job scope and various term and conditions are as follows**

#### **DETAILED SCOPE OF WORK**

The scope of work includes planning and execution of mechanical maintenance activities of the DM Plant, fire hydrant system, deluge systems, FGD and Fuel area Rotary and stationary equipment's of Trombay power station. Major category of the plant equipment's to be maintained are listed. Scope include all the mechanical maintenance work required to run the plant effectively and safely. This contract is on lump sum basis and not on JOB Basis. There are main sub systems in the DM Plant, which have to be maintained to run plant effectively and safely. Job excluded from scope of work is mentioned in CLAUSE VII

**(A) Raw water circuit and Gawan Pump House:** Attending the leakages in the valves of water circuit (Gland leak, Bonnet Joint, Diaphragms replacement) Attending the leakages in the water line, drain lines and Tanks/vessels. Lubrication of Pumps, valves and their actuators. Attending defects in actuators of motor operated valves. Preventive maintenance and corrective maintenance of all Gawan pump house pumps such as bearing replacement, Mechanical seal replacement and pump overhaul Checking/ Correction of alignment, Checking the tightness of foundation bolts and fasteners. Inspection of pump & motor coupling. Overhauling and PM of Gawan pump and Raw water pump as per yearly schedule.

**(B) DM Plant and Service water circuit:** Preventive maintenance and corrective maintenance of all DM Plant and CPU regeneration area Pumps to ensure their maximum availability and reliability. Inspection and cleaning of all pumps and tanks (also include the Acid/chemical tanks and their transfer pumps). Attending the leakages in the valves of water circuit (Gland leak, Bonnet Joint, diaphragms replacement) Attending the leakages in the water line and drain lines. Overhauling of pumps such as bearing replacement, Mechanical seal replacement and pump overhaul Checking/ Correction of alignment, checking the tightness of foundation bolts and fasteners. Inspection of pump & motor coupling. Overhauling and PM of DM transfer pump, service water pumps and tanks as per yearly schedule.

**(C) Maintenance of City water pump** and Hill tank valves, piping and Fire Hydrant pump near Hill tank

**(D) Fire Hydrant System and deluge system:** Attending the leakages in the valves of water circuit (Gland leak, Bonnet Joint, Diaphragms replacement) Attending the leakages in the water line, deluge lines, spray lines and drain lines. Lubrication of Pumps, valves. Attending defects in actuators of motor operated valves. Preventive maintenance and corrective maintenance of all Fire hydrant system pumps of all units of Station-A and B such as bearing replacement, Mechanical seal replacement and pump overhaul Checking/ Correction of alignment, checking the tightness of foundation bolts and fasteners. Inspection of pump & motor coupling, material withdrawal from stores and shifting as and when required also material shifting from plant to scrap yard as instructed by TPC engineer, maintaining record of spares and consumables and informing TPC engineer before exhausting present stock.

**E)** Maintenance of central kitchen equipment's like exhaust fans (02 no's), Fresh air fan(01 no), Solar water recirculation pump, mixture grinders(06 no's ) including material shifting from central kitchen to plant and vice versa, its repair and maintenance as and when required.

**F) Running Maintenance of Oil transfer pumps**, oil piping at OTF, NTF and Stn. A Fuel area

**G) The Running Maintenance of Unit 5 and Unit 8 FGD includes following equipment's running / routine maintenance:**

FGD Scrubber pump/Booster pump & Water filtration plant equipment running maintenance.

Scrubber/booster pump gland packing attending / replacement.

Scrubber/booster pump seal line leak attending/choke clearing

Scrubber/booster pump oil leak attending

Scrubber/booster pump drain and vent line leakage attending

Misc. butterfly valves repair/replacement

Alum dosing pump inspection

Alum dosing tank cleaning/inspection

Aeration fan/blower bearing inspection

Aeration fan/blower coupling inspection

Aeration fan/blower discharge damper inspection

Aeration fan/blower alignment check

Gland leakage attending / replacement of seal water pump

Seal water pump inspection

Lamella Classifier cleaning on regular basis

Misc. drain and vent valve repair / replacement

Vacuum pump inspection

U8 FGD trash rack cleaning as per PM. And as per requirement to avoid FGD tripping on sump level low.

U8 FGD and U5 FGD trash rack/suction screen/suction strainer repair.

Overhaul of FGD scrubber pump, seal water pump, vacuum pump as per yearly PM schedule.

## **GENERAL TERMS**

1 Objective shall be to maintain the plant and equipment in safe and efficient working condition.

2 Mechanical maintenance includes: Preventive maintenance, Corrective maintenance, Condition based and Predictive maintenance.

3 The maintenance of all DM Plant critical equipment's shall be completed by working extended hours. In case of urgency, night shift shall be arranged, and TPC engineer will intimate the requirement 4 hrs. in advance for the same.

4 Appropriate arrangement shall be made to cover holidays and weekly off. Working arrangement of work under contract shall be such that minimum required crew as indicated is available at site during the normal working hours and extra staff can be mobilized at short notice in case of urgency.

5 Modifications of minor nature are in the contract. Examples of minor modifications are permanent access, platforms, railings, minor piping alterations, small rack fabrication etc.

6 Scope of work shall also include attending Near Misses and unsafe conditions on priority as & when they are raised, to reduce hazards at site. Extend manpower support for the temporary jobs assigned to other agency for mechanical system is part of the scope e.g. online leak sealing, painting, plant modification, statutory testing of plant equipment and Tools etc.

7 Contractor shall be required to carry out steel structural work fabrication & erection as per site requirement, wrapping / coating of underground pipes as & when required in case of underground fire / water line leakages where portion of pipes needs to be replaced / repaired by patch welding etc.

8 Assistance in statutory testing for all the designated plant and equipment is included in the scope.

9 It is expected that the contractor will work independently without constant supervision and provide all technical details and progress of jobs on day to day basis to TPC Engineer. Tata Power Co Ltd will extend guidance and auditing supervision to the jobs. On job supervision responsibility will be of contractor.

11 Contractor shall give guarantee for one year against workmanship. Any such failure on account of workmanship shall be attended free of cost including the cost of spares.

12 Performance and/or efficiency of plant/equipment shall not deteriorate after the maintenance work. In case of any negative variation in performance, the same will be attended by contractor free of cost including cost of spares.

13 Key features of this AMC are timely response to breakdown, diagnostic skills and capability to bring the equipment back into service in minimum time with cost efficiency.

14 Welding of pipe, tubes either it is S.S., M.S., G.I., C.S or high alloy steel is in vendor scope.

15 All the valves and actuator repair/replacement, servicing job are in vendor scope

16 Scope of work also includes planning and recommending spare parts in day to day working. Contractor may be required to refer maintenance instruction manuals, drawings, erection and commissioning records for the purpose of maintenance planning and execution.

## **COMPETENCIES REQUIRED FOR EXECUTION**

5.1 Contractor shall maintain and mobilize required manpower so that plant availability is not affected due to lack of manpower. Contractor is advised to appoint, engineers who are competent, having knowledge of equipment's and also able to understand and follow the Tata Power safety rules.

5.2 Following is the indicative organogram. Minimum estimated strength of manpower to be deployed at site (but not limited to):

1. Maintenance Supervisor - 1 Nos. Diploma in Mechanical engineering with minimum 3 to 6 years' experience in Power plant maintenance

And with work exp. of DM plant and auxiliaries with other areas as mentioned above.

2. Technicians - 1 Nos.: ITI and having minimum 3 years working experience in similar kind of power plant. And should have specialization in fabrication of pipeline and other miscellaneous jobs.

3. Senior Technician - 1nos.: mill wright fitter with minimum 8 to 10years working experience.

4. Welder - 1 No: ITI and have minimum 5 years working experience in welding of Inconel & special high temperature alloys, SS, CS , C.I. Aluminum and Alloy steel material.

5. Helpers - 4 nos.: Having minimum 3 years of experience in similar jobs (with respect to chemical handling pumps).

6. Riggers – 1 nos., having adequate knowledge of slinging & Rigging, heavy equipment movement and handling with minimum 3 years of experience in similar jobs.

If any of the above manpower is going for leave, it has to be approved from the TPC engineer. In case of the manpower going on leave for more than 2 days, appropriate replacement shall be deputed to site for the period. Tata Power Engineer in- charge will ascertain suitability of the contract staff for the said purpose. It is imperative to submit bio-data of all staff before induction at site. Engineers/Supervisors from (1 to 6 as above) should essentially possess the diagnostic skills required for maintenance work. Tata Power Engineer shall have the exclusive rights to decide the suitability of the person for the scope of work. The decision of Tata Power Company shall be final and binding on contractor.

## **WORK EXECUTION**

1. Permit to work / Safety documents for day to day working on plant equipment/system will be received by contractor's competent persons and nominated supervisor, based on the maintenance planning and as per request from operation dept. The engineers should be certified under the prescribed safety training.

2. Contractor's engineer will check the Safety document for proper isolation as per the planning, before starting the job at site. Any disagreement about safety documentation needs to be first reported to Engineer-in-charge who will advise further course of action to contractor's representative as per approved procedure of Tata Power Co.

3. Contractor to mobilize the necessary manpower for the job at site and carry out the job as per the job plan / method statement, with all necessary safety measures as prescribed in the method statement / job plan / risk assessment or specific instructions from the shift staff during issuing of work-permit.

4. Contractor's engineer will keep Tata Power Co. engineer in-charge informed of the progress of job at site and findings for the job.

5. The scope also includes to assist engineer-in-charge for inspection of materials received in the store with respect to technical specification mentioned in PO.

6. During the course of the work, all the spares parts removed should be kept in proper bins and equipment's removed, to be kept on side, so that they don't interfere in access to other equipment's/ create safety hazards.

7. All the waste oil /grease / consumables collected during the maintenance jobs should be collected and disposed as per the management control procedure as applicable.
8. In case of maintenance jobs on critical equipments, the job should be completed on the same day, unless an approval is sought from engineer-in-charge to break and continue with the work on following day.
9. After completion of the job, the work place should be cleared of tools / tackles / consumables / waste oil etc. with complete housekeeping and the same should be reported to the engineer in charge and permit to be returned to Engineer in Charge.
10. DM plant storage area to be maintained in good condition by doing regular housekeeping and segregation of consumables.
11. The contractor shall be responsible to for maintaining and enhancing 5S of the areas.

**Quality: -**

1. Contractor to offer quality that is consistently dependable for the entire duration of the assignment in whatever jobs are done under the scope of the contract.
2. Contractor to demonstrate and give reliable services to avoid repetitive defects of the same nature.
3. All the jobs shall be carried out to the satisfaction of the engineer in-charge and his decision shall be final and binding on the contractor.
4. Contractor should have technical support of professional experts in the field from their HO's for handling defects which cannot be diagnosed / rectified through site staff.
5. Contractor shall have all the required technical skills to carry out various kind of jobs mentioned in the scope of work and will make all reasonable efforts to complete the job without any outside assistance. However, if Tata Power Co. deems it necessary to call an outside assistance to complete a highly specialized job, Tata Power Co shall bear all such expenses. Decision of Tata Power Co to call the experts is exclusive and reserved and binding on contractor.
6. Contractor engineers should have good fact finding / problem solving and troubleshooting aptitude.
7. All maintenance jobs should be carried out as per the best maintenance practices available and all the specific steps as per the OEM's recommendation or experience should be included in the job plans, to avoid maintenance instruction being overlooked.
8. All the equipment after overhauling or breakdown maintenance shall have one-year warranty for workmanship. Any failure attributable to workmanship shall be attended free of cost at contractor's account (including cost of spares).
9. All the work done by contractor shall be certified by Engineer In-Charge.
10. Contractor shall maintain the stage-wise inspection records for overhauling of critical equipments.

**Progress Report & Meeting: -**

1. Contractor's site in charge and engineers shall be required to participate in monthly review meeting with Tata Power Co. and comply with all the actions in the agreed time.
2. Contractor will provide detailed monthly report which shall mainly include (but not limited to) the details of maintenance works carried out during the month, statistics about the work order raised during the month, work orders completed during the month, work orders pending at the end of the month with reasons. The report should cover major jobs done during the month, major equipments not available, spare parts required, suggestion for improvements at site, area wise condition monitoring report, list of equipments in fair condition, equipment corrected based on CM, etc.

### **TOOLS & EQUIPMENT BY CONTRACTORS:**

1. All the general tools and tackles shall be provided by the contractor. Any job delay due to unavailability of general tools shall be attributable to the contractor and is subject to penalty.
2. The general tools cover, not limited to all kind of spanners, Hammer, chisel, files, calipers Pliers, screw driver, portable drilling machine, Micrometers and calipers, Radius /Pitch/Depth gauge, pneumatic grinding machine and grinding machines suitable for different sizes of wheel etc. All tools brought on the site need to be approved by Engineering-charge fit for use. And to be electrically tested.
3. All the tools shall be in good working condition and inspected regularly by the contractor nominated engineer. The Tools inspection report shall be enclosed with the monthly report, which separately indicates inspection of GPEC & Contractors tools. Note:-1. All lifting tools e.g. Slings, Chain Blocks, Eye Bolts, D-shackles etc. shall be certified by competent person and Form-11, shall be available at site. Regular testing and valid certification with tracking shall be produced whenever asked. 2. For all measuring instruments valid calibration certification shall be available. Also, regular certification and tracking shall be shall be produced whenever asked. 3. Tools issued from Tata Power Co. stores shall be issued in the name of the Contractor as and when required and the same should be returned back by the contractor after completion of the job. If any such tool is damaged /lost due to improper use / carelessness of the contractor employees, contractor shall be responsible for the repair / replacement or else the cost of the same shall be debited to Contractors account.

**CLAUSE VII EXCLUSIONS:** 1. Major Shutdown 2. Electrical and C&I related job (except extension of support for scaffolding, welding & gas cutting if required at their end, vehicle movement for shifting of material etc. and other small jobs) 3. Earth Excavations to attend a leak.

### **SPECIAL TERMS AND CONDITIONS**

1. Short term and Long-term planning for spares and major maintenance activities will be done by contractor with the concerned maintenance engineer.
2. Inventory action plan to be submitted on quarterly basis with proper record tracking sheet.
3. Knowledge required: - Multistage pumps overhaul, Knowledge of Sump pumps overhaul, Knowledge of compressors, air blowers, centrifugal fans, reciprocating pumps and vacuum pumps, Knowledge of high pressure dosing pumps overhaul, High pressure valves, chemical handling, vertical pump.
4. The service provider shall deploy adequate number of experienced and qualified manpower's (millwright fitters, riggers) along with supervisors exclusively for the work as per the instructions of M/s TPCL engineer. In case of multiple jobs which require additional Millwright fitter, then vendor to arrange for an additional Millwright fitter to avoid any job delay.
5. The service provider shall maintain the day to day progress and quality records of the work. Read the contract safety management guidelines and follow the guidelines. Any safety violation will lead to penalty as well as cancellation of contract.
6. Organogram to be submitted by vendor well in advance.
7. Contractors shall timely mobilize at site ensuring toolbox talk & safety oath by qualified safety officer.
8. Contractor should carry third party audit of Safety inspection of tools and tackles on quarterly basis and submit report to M/s Tata Power Concerned Engineer.

9. Contractor should maintain proper upkeep of company's tools any damage to the company tool to be compensated at free of cost by the contractor.
10. All tools and tackles including chain pulley blocks, wire ropes, DE shackles, jacks, slings, measuring equipment's like Vernier, master level, micrometer are in contractor's scope. All measuring equipment's needs to have valid calibration certificate from competent authority.
11. All tools and lifting devices/ fixtures required for overhaul, running maintenance and daily routine jobs shall be arranged by service provider and they all are tested and made available before any work schedule.
12. Form-11 of all lifting tools and tackles to be maintained at site. All lifting tools and tackles should be of IS3832 standard. All chain blocks to be used at site should have locking latch.
13. 440v welding machine each with sufficiently long cable and industrial plug to fix to the sockets permanent located in powerhouse premises. All electrical tools should be certified by our EMD dept.
14. All PPE's required for safe working to be arranged by contractor. Specifications of PPE's to be taken from Tata Power Safety dept. in writing.
15. Contractor shall assist to display along with Hazards at different locations.
16. Contractor should display emergency safety action plan mentioning hazards and control measures.
17. Electrical tool inspection report/checklist and tracking sheet. All electrical tools and tackles to be tested and should have tested OK tag given by TPC competent authority.
18. PPE safety inspection checklist and tracking sheet.
19. Housekeeping & Litter control tracking sheet (inclusive of Dustbins management)
20. Tool inspection report tracking sheet.
21. Hot work inspection report tracking sheet.
22. Confined space inspection report tracking sheet.
23. Daily review of Hira and JSA.
24. List of trained First Aiders.
25. Daily housekeeping report and tracking sheet.
26. Following Consumables are in contractor's scope:  
All cleaning consumables required for cleaning and buffing activity. Buffing & grinding wheels should be of reputed make. (Norton, Hitachi, Grind well, Bosch, Corborundum). Industrial gases (Argon, Acetylene, Oxygen, and Nitrogen) Rustolene Emery papers, scrappers, wire brushes, paint brushes, hacksaw blades. Cotton Waste and Waste cloth. Empty bags for collecting ash, dust etc. Mulmul Cloth for bearing cleaning works. General Purpose Electrodes of reputed make (ADOR, D&H, L&T).
27. 24 volt lighting transformers along with hand lamps/bulbs and cables of sufficient length & extension boards, torches as per site requirement for proper illumination at site.
28. Shifting of spares, special tools materials and equipment from stores/ workshop to and from site. Any failure in return or damage to company tools shall be back charged from the contractor.
29. Shifting and disposal scrap/ash created at work has to be carried out by contractor, at the end of every shift to a place designated by the Company within the Company's premises.
30. Return of good material to stores and shifting of scrap to the scrap yard at the location shown by our supervisor with in the company's premises on completion of the work.
31. Contractor to carry out housekeeping at the end of every shift prior to start of next shift to remove scrap, unwanted material, debris, structural steel, ash, insulation, etc. Failure to do so will attract penalty as per standard terms mentioned in Contractor Safety code of conduct. (Appendix 5: CSM-F4, page 11).

**TATA POWER SCOPE** 1. Assistance in machining work will be provide by Tata Power and the entire spares requirement will be raised by contractor in advance to avoid time delay. 2. All spares for the job will be supplied by Tata Power. 3. Transport vehicles like Truck, Pick and carry, Hippo, Crane, Forklift will be provided as per job requirement on prior intimation. 4. All scaffolding services wherever required will be provided by Tata Power. 5. Civil assistance will be given as per requirement taking into consideration nature of the job. 6. Tata Power will ensure timely work permits, material issue and inspections to ensure timely completion of job. 7. Sealing compounds like RTV-Silastic, Hylomer, Holdtite, Loctite, M-seal, Pen-Oil, Belzona, O-rings, gaskets & gland packings, sealing ropes, paints for application. 8. Fasteners, Structural steel, plates, pipes, fittings. 9. Welding electrodes (except 6013 and 7018 which are in contractors scope) and filler wires for only alloy and stainless steel welding. 10. 440/230V supply will be provided at nearest designated points. 11. Fire water hoses as per job requirement. Contractor has to maintain tracking sheet for the same. 12. Removal and restoration of thermal insulation will be arranged by Tata Power.

### **Annexure-1 MAJOR CATAGORIES OF EQUIPMENT**

**Raw Water Booster Pump** (Gawan Pump) Make: KBL Type: BHR-28, Single stage self-water lub. Capacity: 262 m3/hr Head: 18.35 m Speed: 1450 rpm Input: 16 KW Quantity: 2 Nos.

Make: KBL Type: BHR-3-30, Single stage self-water lub. Capacity: 250 m3/hr Head: 70 mwc Speed: 1490 rpm Input: 17.62 KW Quantity: 1 No.

**Raw water Pump** Make: Johnson Type: CCR65-160B1S2L3 Capacity: 75 m3/hr Head: 35 m Speed: 2900 RPM Input: 12.5 KW Quantity: 2 Nos.

Make: Chemo Type: CHP-MT Capacity: 81 m3/hr Head: 38 m Speed: 2900 rpm Input: 12.5 KW Brg.(R) 6309 Brg.(T) 3309 Quantity: 2 Nos.

**Service Water Pump** Make: KBL Type: DSM 100/36 Capacity: 1230 m3/hr Head: 160 m Speed: 1475 rpm Input: 40.46 KW Quantity: 3 Nos.

Make: Chemo Capacity: 130 m3/hr Head: 30 m Speed: 2900 rpm Input: 40.46 KW Quantity: 3 Nos.

**DM Transfer Pump** Make: Chemo Capacity: 66 m3/hr Head: 30 m Speed: 2900 rpm Quantity: 4 Nos.

Make: Chemo Capacity: 60 m3/hr Head: 30 m Speed: 2900 rpm Quantity: 4 Nos.

**RAPH Wash Pump** Make: KBL Type: BHR-35-18 Capacity: 111.1 LPS Head: 181.3 m Speed: 1483 Input: 244 kw Quantity: 2 Nos.

**Degasser Pump** Make: Johnson Type: CCR-50-200 R6M2L3 Capacity: 50 m3/hr Head: 35 m Speed: 2900 Input: 7.5 kw Quantity: 8 Nos. Degasser Air Blower Make: Vishwakarma Capacity: 23 m3/hr Speed: 440 rpm Input: 1.5 kw Quantity: 8 No. Alum Dosing Pump Make: Milton Roy Type: GS402 Capacity: 170 LPH Pressure: 5 kg/cm<sup>2</sup> Input: 0.37 kw Quantity: 4 Nos.

PSP Dosing Pump Make: Milton Roy Type: GS402

Capacity: 170 LPH Pressure: 5 kg/cm<sup>2</sup> Input: 0.37 kw Quantity: 2 Nos.

**Sulphide Dosing Pump** Make: Milton Roy Type: SR-141-60 Capacity: 5.8 GPH Pressure: 100 psi Input: 0.55 kw Quantity: 2 Nos.

Make: Milton Roy Type: GS401 Capacity: 70 LPH Pressure: 5 kg/cm<sup>2</sup> Input: 0.37 kw Quantity: 2 Nos.

**Ammonia Dosing Pump** Make: Milton Roy Type: MBH16125PDCBE1T35T11DD22 Capacity: 15.4 GPH Pressure: 575 psi Input: 0.5 HP Quantity: 2 Nos.

**Phosphate Dosing Pump** Make: Milton Roy Capacity: 23.19 GPH Pressure: 3200 psi Quantity: 2 Nos.

Also, **Sump pumps**- Quantity: 4 Nos., back pullout pumps: Waste water recovery pump, Kitchen pumps, Brine solution preparation pump - Quantity: 1 Nos. each Air Blower Quantity: 5 Nos.

**Fire hydrant Pumps** Make: KBL Type: DSM615 Head: 105 m Flow: 75.83 LPS Speed: 1480 S. No.: 06/MAH/100/1364 Quantity: 3 Nos.

Make: CG Type: 6/8 2STO MED

Head: 105 m Flow: 273 m<sup>3</sup>/hr Speed: 1480 S. No.: 861075/13/1 Input: 125 kw Quantity: 3 Nos.

**Fire Deluge Pump** Make: CG Type: 6/8 2STO MED Head: 105 m Flow: 273 m<sup>3</sup>/hr Speed: 1480 S. No.: 861075/13/1 Input: 125 kw Quantity: 1 Nos.

**PSP pumps** Type: 10 UP 3M 17 Head: 84 m Flow: 187.5 LPS Speed: 1480 S. No.: 097140056IF Quantity: 1 Nos.

Make: Mather & Platt. Type: 8/10 DME Head: 82 m Flow: 675 m<sup>3</sup>/hr Speed: 1486 S. No.: 861181/H/1 Input: 230 kw Quantity: 1 Nos.

**Jockey Pump** Make: Mather & Platt. Type: ET ISO.8 Head: 107 m Flow: 30 m<sup>3</sup>/hr Speed: 2900 rpm S. No.: 81206550/30 Input: 22 kw Quantity: 2 Nos.

Make: Mather & Platt. Type: ET ISO-4

Head: 107 m Flow: 10.8 m<sup>3</sup>/hr Speed: 2900 rpm Input: 15 kw Quantity: 3 Nos.

**Diesel Pump** Make: Mather & Platt. Type: EP ISO-32 Head: 105 m Flow: 273 m<sup>3</sup>/hr Speed: 1500 rpm Input: 173 kw Quantity: 1 Nos.

Make: Mather & Platt. Type: ET ISO-4 Head: 105 m Flow: 273 m<sup>3</sup>/hr Speed: 2309 rpm Input: 152 kw Quantity: 1 Nos, Fire Booster Pump - Quantity: 2 Nos.