

## **Description of the service**

### **1.1 Executive overview**

This contract covers the provision of manpower service for Welding shop at Matimba Power Station (24hrs service for Core crew)

### **1.2 Employer's requirements for the service**

#### **1.2.1 Chutes and tilling maintenance**

The scope of work details the inspection, repairs and replacement of tiles ,skirting rubbers and chutes casing within the coal and ash plant conveyors and stacker machines' chutes. The chute lining is replaced, based on the condition established from monthly inspections. This will include any missing, worn through or broken liners and chute casing. Liners include weld on ceramic tiles, stick on ceramic tiles of 12mm & 25 mm thickness and ultra-high density polyethylene. The supply of these components is provided by Eskom.

#### **Product / Scope of Work / Works Information Knowledge:**

Monthly off load Inspection and replacement of chute lining for the following chutes:

- S1 - S5 (5 conveyors) head end discharge chutes and tail end receiving chutes
- Coal Stacker Reclaimer bypass chute and reclaimer chute
- T1 – T6, A and B (12 conveyors) head end discharge chutes and tail end receiving chutes
- T7 and T8, A – F (12 conveyors) head end discharge chutes and tail end receiving chutes
- Unit 1 – 6, A – G mill bin conveyor head end discharge chutes and tail end receiving chutes
- Conditioned ash conveyors 1 – 3, A & B (6 conveyors) head end discharge chutes and tail end chutes
- Coarse ash conveyors 1 – 6, A & B (12 conveyors) head end discharge chutes and tail end chutes receiving chutes below flopper gates
- Transverse 11 & 21 conveyors head discharge chutes end and all 36 receiving chutes
- Cross 12 & 22 conveyor head end discharge chutes and tail end receiving chutes
- Overland 13 & 23 conveyor head end discharge chutes and tail end receiving chutes
- Extendable 14 & 24 conveyor head end discharge chutes and tail end receiving chutes
- Shift able 15 & 25 conveyor head discharge chutes on ash stacker and spreader end and tail end receiving chutes
- Spreader boom and link chutes
- Stacker boom and link chutes

- Visually inspect the chute for normal wear and tear and damage
- Visually inspect the chute and deflector plates for normal wear and tear and any other damage
- Visually inspect the skirting rubbers for wear and tear and any other damage
- Take measurements
- Inspection of missing ,damaged tiles and install
- Replace the chute liners
- Refurbishments of chute
- Replace the chutes deflector plates
- Inspect the chute liners (steel and ceramic)
- Replace the skirting rubbers
- Ensure that work is performed as per the Eskom welding standard
- Report back to Matimba maintenance quality control personnel

### **1.2.2 Workshop services**

The scope of work details the inspection and use of workshop, machineries, equipment to fabricate and repair components for maintenance and outage purpose based on samples, components and drawings.

- Visually inspect of welding workshop machine, equipment and tools for oil leaks and any other damage and report
- Safely operate boiler making machineries (guillotine, shear machine, cropper ,bending machine, straight line cutter, profile cutter and rolling machine, pipe bender,CO2 and Plasma Cutter)
- Operate over head crane, fork lift
- Do bill of material and modifications of components as specified
- Fabricate items from engineering drawing and plant
- Do welding (SMAW,MIG,TIG,GTAW)
- Perform welding of HP components and on structural steel
- Ensure that work is performed as per the Eskom welding standard
- Report back to Matimba maintenance quality control personnel

### **1.2.3 Auxiliary plant, office block, turbine, ACC fans, idlers, car ports maintenance**

The scope entails the inspection of damaged plant components and do repairs on them

- Repair damaged structure and pipe
- Manufacturing of pipe drawing as per drawing or sample
- Take measurements and develop the required item
- Visually inspect the grating for wear and tear
- Replace the damaged gratings
- Inspect pipes(carbon steel and stainless steel) for any wear and tear and do repair
- Visual inspect checker plates and do repairs

- Ensure that work is performed as per the Eskom welding standard
- Report back to Matimba maintenance quality control personnel

#### **1.2.4 Structural inspection and repairs at Matimba power station**

The scope entails the inspection and repairs of all the structural steel at Matimba power station as per the South African Steel Construction hand book

##### **Matimba power station structures**

1. Hand rail pipe at the outside plant and units,
  2. S1 tension weight structure
  3. All cat ladders at Matimba power station
  4. Coal stacker Bucket wheel structure
  5. T8A-T8F tension weights structures(8 tension weights)
  6. Ash spreader structure
  7. Ash tension weight structure
  8. Ash stacker structure
  9. ACC Fans structure from unit 1 to unit 6
  10. Precipitators structure from unit 1 to unit 6
  11. Control bin structure
- NB All the structural inspection and repairs at Matimba power station must be done according to the South African Steel Construction hand book

#### **1.3 Outage work Scope**

The scope of work details how the inspection on all the, bunkers, pf pipes, air heaters, HP piping, drought group, turbine, acc fans shall be carried and work is carried out as per the signed outage scope of work provided to workshop services.

##### **1.3.3 Maintenance of outage components from the plant**

- Fabrication/ repairing of damaged DHP components as per drawing or sample
- Fabrication/ repairing of damaged SSC components as per drawing or sample
- Fabrication/repairing of damaged Air heaters components as per drawing or sample
- Fabrication/repairing of Turbine damaged components as per drawing or sample

##### **1.3.4 Refurbishment of chute during outages**

The scope of work details the inspection and the refurbishment of chutes on an outage unit

- Unit 1 – 6, A – G mill bin conveyor head end discharge chutes and tail end receiving chutes
- T7 and T8, A – F (12 conveyors) head end discharge chutes and tail end receiving chutes

- Conditioned ash conveyors 1 – 3, A & B (6 conveyors) head end discharge chutes and tail end chutes
- Coarse ash conveyors 1 – 6, A & B (12 conveyors) head end discharge chutes and tail end chutes receiving
- Visually inspect the chute for normal wear and tear and damage
- Take measurements
- Visually inspect the chute and deflector plates for normal wear and tear and any other damage
- Replace the chutes deflector plates
- Inspect the chute liners (steel and ceramic)
- Replace the chute liners
- Refurbishments of chute
- Visually inspect the skirting rubbers for wear and tear and any other damage
- Replace the skirting rubbers
- Ensure that work is performed as per the Eskom welding standard
- Report back to Matimba maintenance quality control personnel

#### **1.4 General requirement of contract:**

- Safety file and environmental file to be presented to Matimba safety and environmental office for approval

##### **1.4.1 Re- commissioning**

All the equipment isolated for maintenance intervention shall be re-commissioned after start up and recorded in history on SAP-PM.

##### **1.4.2 Skills Requirements**

The contractor is required to provide suitable qualified personnel with relevant experience and medical fitness to perform maintenance on Matimba Power Station as per Technical evaluation.

##### **1.4.3 Tools and Equipment**

The contractor should assess the SOW and provide all the necessary tools and equipment required to successfully execute the scope of work beside the below written equipment tools and machines. The contractor shall ensure that the equipment's are fully serviced, reliable and support the timeous completion of the maintenance and outage task at all times. Eskom will provide the below written tools, equipment, machineries, material and consumables

- Eskom will provide 380 volts welding machines
- Eskom will provide welding and fabrication machines(Guillotine, Powers saw, Bending machine, Rolling machine, Cropper machine, Pedestal drilling machine, Profile cutter ,straight line cutter
- Welding consumables
- Cutting consumables

- Cutting torch trolleys
- All material will be supplied by Eskom, example angle irons, flat bars etc
- Gas Cylinders
- Stick on ceramic tiles of 12mm & 25 mm thickness and ultra-high density polyethylene.
- Skirting rubbers

The contractor to ensure that all the Eskom tools, equipment, machineries are well maintain and looked after and any proven negligence, loss, theft or damage to Eskom tools, equipment, machineries under the control of the contractor, the contractor shall be held liable and accountable to ensure that the tool, equipment or machinery is either replaced or fixed and shall pay the total service amount to the contractor/service provide that replaced /repaired the equipment, tool or machinery as appointed by Eskom.

#### **1.4.3.1**

The contractor must provide a double cab van to transport goods and employee to different work locations in and around the station.

The van will also be used for standby purpose.

The contractor to provide the following tools and equipment successfully complete the job

- Two welding portable inventors
- Two 4 inch grinders(Small grinders)
- Two four pound hammers
- Two 19 flat spanners
- Two 24 flat spanners
- Two Stanley knives
- Four 30 metres extensions
- Three scrabbers
- One 19 inch grinder(Big grinder)
- Two 19 and 24 ratchet spanner
- Three Welding helmets
- Eight Face shield
- Two safety hardness
- Two size 14mm hollow punch

#### **Contractor:**

1. The Contractor to provide technical support and advice on constant failure trends of the equipment
2. Ensure that the application and implementation of appropriate maintenance tools and innovative techniques

3. To provide adequate resources capabilities to carry out maintenance and outage work and that support the Employer's objectives
4. No work no pay principle shall apply if it happens that the contractor does not report to site due to contractor negligence, any breach of contract clause, NCR and safety violations or any other violations.
5. The core crew employees to work shifts if and when required at no extra cost
6. The contractor to adhere to all Employer's health and safety requirements and procedures on site
7. All maintenance and outage activities to be performed in accordance with the relevant procedure and specification where applicable
8. Contractors to do maintenance projects without any additional cost using the core crew
9. The contractor shall use the same maintenance crew to fully execute both maintenance activities and outage work without additional cost or manpower
10. The contract manager is responsible for the management of all personnel, effective resource scheduling and pre-job planning to ensure that no delays to Eskom's scheduled maintenance and outage activities.
11. The contractor to ensure that there is no slow progress on work done and keep monitoring measures in place and corrective measures for such acts to subordinates
12. The contractor to ensure that A class welders are tested as per Eskom Welding rule book and maintain their status failure will be in penalties and an NCR being issued
13. Proof of qualifications is to be supplied to the Employer.
14. The contractor shall record and report to the Employer the following
  - a) All incidents and equipment failure to be reported to the Employer within the same day.
  - b) The contractor must provide monthly overall system performance report.
  - c) To adhere to all Employer's health and safety requirements and procedures on site.

## **Roles and Responsibilities**

### **Contract Manager:**

1. Co-ordinating and manage contract budget and expenses
2. Ensure that the contractor operates within the budget
3. Holds monthly meeting with the contractor
4. Communicate technical interface between Eskom and the contractor
5. Ensure that all work performed complies with the OHS act regulation and quality requirements

6. Review, verify, and approve receipt of services/deliverables from the contractor
7. Manage and maintain contract records and correspondence between the employer and the contractor
8. Ensure that the contractor compliance with the conditions of contract.
9. Ensure that core crew employees are utilised fully and or reduce the number of members if underutilised
10. Resolving any deviations and breaches in relation to the agreed conditions of the contract
11. Contracts manager must keep the original copy to file for history purpose

### **Informative/Normative references**

Parties using these documents shall apply the most recent edition of the document listed in the following paragraphs.

#### **2.1.4 Normative**

- ISO 9001 Quality Management Systems.
- EN ISO 5817 for structural steel
- EN 764-5: Pressure Equipment – Part 5: Inspection Documentation of metallic materials and compliance with the materials specification
- EN 10216: Seamless steel tubes for pressure purposes – Technical delivery conditions – Part 1-5.
- EN 10204: Metallic Products – Types of inspection documents
- ASTM A106/106M: Seamless Carbon Steel Pipe for High-Temperature Service
- ASTM A178/178M: Electric-Resistance-Welded Carbon Steel and Carbon-Manganese Steel Boiler and Superheater Tubes
- ASTM A192/192M: Seamless Carbon Steel Boiler Tubes for High-Pressure
- ASTM A209/209M: Seamless Carbon-Molybdenum Alloy-Steel Boiler and Superheater Tubes
- ASTM A210/210M: Seamless Medium-Carbon Steel Boiler and Superheater Tubes
- ASTM A213/213M: Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat Exchanger Tubes
- ASTM A335/335M: Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service
- BS EN 12952: Water-tube boilers and auxiliary installations
- BS EN 13480: Metallic industrial piping
- 240-56239129: High Energy Pipework Standard for Power Generation Plants
- VdTÜV WB560/2 (03.2009) - VM 12
- VdTÜV WB547 (06.2003) – DMV 347 HFG

Note: In all cases the latest version of the code/standard/procedure shall be applicable

### **Informative**

- VGB Specification VGB-R 109
- VdTÜV WB511 (03.2009) - *for X10CrMoVNb9-1 and T/P 91 impact properties only*
- EPRI Guideline: Best Practice for Manufacturing and Construction of Grade P91 Steel Components (Report No: 1023199)
- Eskom Integrated Risk Management Procedure 32-391
- ISO 9001:2015 Quality Management Systems

- GGR 0992- plant Safety Regulations
- Occupational health and safety Act 85 of 1993
- Act no 102 of 1980-National Key Point
- SANS 962-1 Mechanical Fasteners for conveyor belts

**Technical KPIs**

Item	KPI	Targets
1	No of P1-P4 Overdue	0
2	No of PM 'S Overdue	0
3	Rework	0
4	Number of parked invoices	0
5	PM:CM ratio (World Class Maintenance Standards)	≤ 6:1
6	NCR (Technical, Safety or Environment)	<3
7	Employees weekly utilization	≤ 40 hours
8	SD@L	100%
9	PSR Authorisation for all skilled employees	100%
10	Safety Findings	1M
11	Utilisation	100%
12	Weld repair rate	<3 %

**SHEQ KPIs**

Item	KPI	Targets
1	LTI	0
2	Environmental Excursions	0

**Turn-around and response time**

- The contractor must be based on site during normal working hours
- The contractor will start work at 07:00 in the morning until 16:30 from Monday to Thursday and 07:00 to 12:00 on Friday.
- Lunch time 12:00 to 12:45 Monday to Thursday
- The contractor shall provide a standby team for any breakdowns or call outs for after hours (16:30 to 07:00 the following day on the week days, Fridays from 12:00 to 07:00 the following Monday and these also apply on holidays.
- All the call outs shall be made through EOD and at all the times a notification to be created and a work order issued (No work order, No work principle shall apply)
- Three employees will be required to be on standby as per the standby roster
- The contractor is expected to report to EOD within 30 minutes after the call out was made.
- The contractor will be required to attend to emergency work
- P1,P2,P3 and P4 work order must be executed as per RWM procedures

- Maximum turnaround time for NCR is 7 working days

### **Quality control standards:**

Quality control plan shall be produced, maintained and implemented per task as agreed by the employer. The QCP must be discussed with the employer for approval. This QCP shall comply with ISO 9001:2015 standards. Any amendments to the QCP shall be discussed with the employer for approval.

### **Eskom Policies**

The contractor's employees shall comply with Eskom's policies and site regulations, including but not limited to the use of cell phone while driving, restricted areas, adherence to Eskom's lifesaving rules, smoking policy, etc. these requirements will be discussed in details during induction training process.

### **Records**

1. Every official meeting will have an attendance register and meeting minutes recorded and kept in a file.
2. Minutes of the meeting shall be signed by all parties
3. All communications must be recorded in an email and kept in a file.
4. Any records developed will remain property of Eskom Matimba Power Station

### **General:**

1. Housekeeping must always be good and follow proper stacking standards
2. Contractor must consider local skills and local to Lephalale and Waterberg region
3. Employees must be provided with proper accommodation at least with water, lights and sanitation. (evidence required)
4. Contractor will provide own PPE, branded with contractors name. No Eskom PPE to be used by the contractor.
5. Contractor will attend meetings as required
6. Assessments to be submitted on the 25<sup>th</sup> of every month, failure to submit will lead to NCR being issued.
7. The contractor is encourage to consider Eskom learners that were not absorbed after finishing their trades
8. Contractor should not conduct any work in the plant without a work order.
9. The contractor to do both maintenance and outage work with these core crew members and no additional resources

The contractor must ensure that all the members of the core crew are available at all the times