




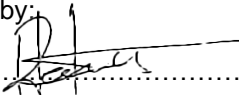
Signed-off Scope of Work

Title: Domestic Electrical Circuits and Filter Maintenance Contract at Tutuka Power Station

Document type:

Signed-off scope of work

Signed-off by:
Sign 

Approved by:
Sign 

Accepted by:
Sign 

Name: Godfrey Seipone

Name Ryan Hector

Name Ntombifuthi Ngcobo

Date 04/10/2023

Date 19/10/2023

Date 23/10/2023

Engineer

Electrical Engineering Manager

Engineering Manager

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1. PURPOSE

To propose and approve a Contracting Strategy for Domestic Circuits and Filter Maintenance contract at Tutuka Power Station.

2. SCOPE OF WORK

Executive overview

To maintain and repair / replace Light, plugs circuits and HVAC FILTER Maintenance as required at:

1. Boiler and Boiler Auxiliaries.
2. Turbine and Turbine Auxiliaries.
3. HVAC FILTER Maintenance – all Tutuka Plant:

Employer's requirements for the service

The Maintenance (Repairs / Replacement) of Lighting and Plugs socket outlet scope of work (SOW) consists of

- Lighting circuits, i.e., all components on the circuit from isolator load point e.g. Isolators at switchgear rooms, Fuses, cables, circuit breakers, DB wiring and all components inside light fittings, etc.
- 220V plug socket outlets, 380V plug socket outlets, i.e., all components on the circuit from isolator load point e.g., Isolators at switchgear rooms, fuses, cables, circuit breakers, DB wiring and all components inside plug socket outlets, etc.

The Aircon and CT chamber filter maintenance SOW consists of

- Monitoring the pressure gauges on primary and secondary filters and reporting concerns.
- Removing dirty filters and install clean or new filters where needed.
- Washing of dirty filters, stack on dry rack to dry, and once dry, store filters for future use.
- Remove and replace damaged filter gaskets and filter clips.
- Check for air leaks and repair.
- Disposal of old filters as per *Employer's* disposal requirements.
- Plenum floors need to be washed monthly.
- Plant rooms floors needs to be washed monthly.
- Aircon Condenser to be cleaned as required.

Plant

Tutuka Power Station, amongst others

- All associated electrical equipment related to Units 1 to 6: Turbine, Boiler, Auxiliary Plants and buildings,
- All Aircon and ventilation systems and CT Chamber plants: filter maintenance

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Activities

Preventative maintenance, Corrective maintenance, Routine maintenance as per PM and *Employer's* instruction applicable to below

- The Lighting and Plug socket outlet Scope of work is for lighting, 220V plug socket outlets, 380V plug socket outlets. This includes the complete circuit repairs from Isolator fuses in LV room to DB to end point of circuit, e.g. light / socket point including cable repairs
- The Aircon and CT chamber filter maintenance SOW consists of Monitoring the pressure gauges on primary and secondary filters and reporting concerns, Removing dirty filters and install clean or new filters where needed, Washing of dirty filters, stack on dry rack to dry, and once dry, store filters for future use, Remove and replace damaged filter gaskets and filter clips, Check for air leaks and repair, Disposal of old filters, Plenum floors need to be washed monthly, Plant rooms floors needs to be washed monthly, Aircon Condensers to be cleaned as required
- Do monthly inspections and report all defects to the *Service Manager*.
- Assist with implementation of modifications and projects on an "as and when required" basis
- Ensure all plant labelling e.g., sockets outlets, circuit breakers, distribution boxes and cables must be in line with the latest *Employer's* drawings
- All the *Employer's* drawings must be up to date with the relevant plant, if not; it must be reported to the *Service Manager*.
- Repair and replace LV cables including cable joints for lights and plugs circuits.
- All cable glands to be secure
- Maintenance, repairs and inspections on all lights, plugs and cables.
- *Contractor* to arrange COC certificates on 220 V and 380V circuits on an "as and when required" basis.
- Distribution Boards to be cleaned on a regular basis.
- Distribution boards to be replaced when necessary
- Before a Unit is declared to be on Outage, all lights and plug socket outlets must be in order (Detailed inspection list to be provided of plant status).
- *Contractor to replace* all faulty components such as Isolators, Circuit Breakers, Earth Leakages, Relays, Connector Blocks. The *Employer* to supply all spares.
- All Distribution boards' doors hinges, seals must be in order and doors must be closed at all times.
- Earth leakage Statutory work PM and Other PM tests to be carried out as per PM schedule. All earth leakage registers to be up to date
- Connecting Distribution boxes on an as and when required basis. It can only be connected when Supplier of the Distribution boxes provides proof of COC done
- 380 V welding sockets junction boxes to be locked at all times (locks will be supplied by the *Employer*) deviations in this regard must be reported to the *Service Manager*.
- All other electrical work not specified above, to be also carried out as and when required; relevant training will be provided by the *Employer* where applicable.
- Ensure all earths on equipment are intact according to the *Employer's* procedures
- Ensure all maintenance power supply boxes.

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Tests Requirements

The following tests shall be performed as and when required:

- Voltage on-no-load test,
- Earth leakage test,
- Earthing continuity test,
- Elevated neutral,
- Insulation Resistance,
- Loop Impedance test,
- Earthing Resistance test,
- Luminance test
- Pressure measurement (relevant to aircons)
- Polarity test
- Prospective Short circuit test

General Requirements

- Overtime, on “as and when required” basis.
- Perform electrical maintenance work according to the *Employer’s* requirements with the use of the *Employer’s* Notification, Work Orders and or other systems.
- All personnel will be available and on site during normal working hours:
Monday to Thursday 07:00-16:15
Friday 07:00-12:00
- All PPE required to be provided by *Contractor* e.g. arc flash PPE (category – specific 8 cal/cm²), acid retardant PPE, safety harnesses, Face shield, Gum Boots, dust masks and for any weather / working conditions.
- Working hours is the *Employer’s* working time and overtime might be required depending on the workload and urgency thereof.
- All specialized training required will be provided by the *Employer*
- Daily time sheet must be kept up to date. The *Employer’s Contractor’s* time sheets to be used.
- All overtime to be specified on time sheets as well on support documentation
- Attendance of meetings as and when required by the *Employer* or *Contractor*
- Purchasing of spares or materials will go through the *Employer’s* procurement process
- The *Employer’s* SHEQ requirements, meeting, and regulations to be adhered to
- All Documentation required must be returned with the tender document
- Spares and materials list kept up to date
- *Contractor* to collect spares at stores to be used at plant
- All testing equipment supplied and used by *Contractor* to be calibrated and kept in good working condition as per the *Employer’s* requirements and Certificates must be handed in to *Service Manager*
- If the *Contractor* replaces personnel under his control, it must be approved by the *Service Manager*.
- *Contractor* to provide plan on how his personnel will be divided to attend training and go on leave to be agreed with *Service Manager*.
- All new staff to be appointed in writing by *Service Manager*.
- All new staff to do the *Employer’s* induction training and to be inducted annually.
- All new staff to be approved by *Service Manager* before entering the site or commencing work
- All new staff must hand in all qualifications and relevant documentation to the *Service Manager*.
- When changing personnel, a new access to work form to be completed by the *Contractor*
- Only required specified approved amount of personnel to be allowed on site, pre-arrange with *Service Manager*.
- All overtime worked must comply with the *Employer’s* rest period requirements.
- The *Employer’s* conditions of service to be adhered to
- Non – performance of employees, including absenteeism concerns, will be monitored – NCR/PIR

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- will be issued accordingly
- Letter of good standing must be valid at all times
 - All vehicles to comply with the *Employer's* vehicle standards.
 - These vehicles or similar must always be available for the duration of this Contract
 - Risk assessments must be completed before each task as per *Employer's* standard.
 - The *Employer's* Lifesaving rules to be adhered to.
 - *Contractor* shall comply with the *Employer's* Quality Standards.
 - *Contractor* shall comply with the *Employer's* (WWM) work week management system.
 - Good housekeeping to be maintained at all times.
 - All telephone accounts are at *Contractor's* account.
 - All cabins and LV equipment shall comply with the *Employer's* standards, including COC.
 - *Contractor's* site to comply with *the Employer's* regulations and standards in terms of SHEQ and shall be inspected by the *Employer*.
 - Quality control plan and contract Quality plan approval process standards as per QM 58 to be used.
 - Audit on *Contractor* will be done on a frequent basis.
 - *Contractor* to make use of the *Employer's* ablution facilities
 - Transport for *Contractor's* employees to be provided by *Contractor*.
 - The *Employer's* transport procedures and requirements to be adhered to.
 - SHEQ policies (Eskom Zero harm policy) to be adhere to.
 - *Contractor* shall be required to maintain good housekeeping at all times.
 - CIDB Certificate must be valid at all times if required.
 - All work to be done under a Plant safety permit to work at all times.
 - *Contractor* to provide all necessary tools, equipment, and test equipment to perform work according to the scope of work.
 - Tools must include rubber mat and Safety harness, Ladders that must be made of aluminium.
 - All ladders must be inspected regularly according to statutory requirements, and inspection sheets must be filed and available at any given time when requested by the *Employer* or Auditors.
 - All light tubes to be disposed at all times according to the *Employer's* procedure.
 - *Contractor* to provide its own power tools. Minimal power tool requirements are 2 x drilling machines (Industrial type) and 4 x electrical blowers and 1 x small angle grinder.
 - *Contractor* to provide its own Test equipment such as meggers (Insulation testers), Multi meter, Earth Leakage Tester, Amp probe (ammeter / clamp-on meter) and must be calibrated at least 3 yearly or when found to be inaccurate or after test equipment repairs. Test equipment to be repaired / replaced within one week, but *Contractor* to have additional test equipment in order to always be able to carry out work, *Contractor* must be trained on cranes and have crane licence
 - *Contractor* to be trained and licensed to operate aerial platforms at the *Employer's* site.
 - *Contractor* staff to be Authorised and found competent in writing to work at heights within first month of start date.
 - All work and Activities to be done under a plant permit to work or lock out system at all times, whichever is applicable as per PSR.
 - When working on ladders two-person rule to be followed
 - In the event where the *Contractor* cannot perform the requested duty / activity the *Employer* will use other alternative on the *Contractor's* (Contract Holder) costs.
 - Site clarification meeting to be attended by all
 - Experience / Knowledge must have qualification / certificate / reference of where and when this was gained
 - *Contractor* to provide its own fire extinguishers on *Contractors* own costs for site offices.
 - Contract change management:
 - Where the *Contractor* does Name Changes, Mergers, Acquisitions, and Cessions the *Employer's* procedure must be followed. (Eskom Procurement and Supply Management Procedure)
 - In a case where one *Contractor* takes over from another *Contractor*, the Site Service Manager must be notified in writing immediately.
 - The *Contractor* does not cede, delegate, or assign any of its rights or obligations to any person without the written consent of the *Employer*.

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Breakdown maintenance

- Breakdowns during normal working hours will be handled as soon as faults are reported.
- A contact number will be supplied by *Contractor*, and contact person's name, if required.
- Any fault will be reported to the *Employer's* Supervisor and documented using the WWM process.
- A formal report on the breakdown will be provided to the *Employer's* Supervisor, with the following information:
 - Time breakdown occurred,
 - Plant conditions at time of breakdown,
 - Components that failed,
 - Probable cause and
 - Actions taken
- Breakdown plant will be brought back to service (in healthy state) ASAP

Spares

- A spare list is drawn up and submitted to the *Employer*. This is a complete list of all vital spares necessary for the plant.
- The spares will be purchased by the *Employer*,
- All spares will be provided by the *Employer* and the normal procurement procedure will be used
- All Consumables will be provided by the *Employer*

AVAILABILITY OF PLANT

- The *Service Manager* or the *Employer's* Supervisor will inform *Contractor* of outage dates
- The preliminary outage program will be forwarded to *Contractor*
- The *Service Manager* or the *Employer's* Supervisor will forward any changes to the outage program

REPORT WRITING

The *Contractor* must provide the *Employer's* Supervisor and the *Service Manager* with the following information:

- It must state the work done on the relevant equipment serviced or repaired from a breakdown.
- Include a summary of condition of plant.
- Any recommendations (if applicable)
- The list must also indicate YTD service which was done

Outage Work

- Before a Unit is declared on Outage all, Lights and plug socket outlets must be in order.
- A detailed inspection list to be provided before and after an Outage, of plant status which must be signed by both parties.
- The detailed inspection relating to the state of plant regarding the electrical works must be signed off by both parties.

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Test Equipment

- meggers (Insulation testers)
- Multi meter,
- Earth Leakage Tester
- Amp probe

3. MAN-POWER PLAN

- 6 X Electrical Artisans
- 16 X Semi-skilled
- 1 X Supervisor with / Installation Electrician (IE)

For this contract at all times