



Signed-off Scope of Work

Title: Additional C&I Maintenance Services on all plant areas at Tutuka Power Station

Document type:

Signed-off scope of work

Signed-off by:


Sign

Name

Date

Supervising Manager

Approved by:

Sign 

Name 

Date 2022-05-18

C&I Engineering Manager

Accepted by:

Sign 

Name 

Date 18/05/2022

Service Manager

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Description of the service

1.1 Executive overview

- The Scope of Work entails additional C&I Maintenance Services on all plant areas at Tutuka Power Station. This includes Steam Turbine Centerline and associated equipment, Turbine Auxiliaries, Boiler Feed Water Pumps and their auxiliaries, Condensate Polishing Plant, Boiler and associated plant, Coal and Ash handling and Chemical Water Treatment plants. The team will form part of the Eskom C&I maintenance team and will be integrated into the different sections.

1.2 Employer's requirements for the service

The activities are as follow:

1. Maintenance activities

- Weekly Scheduled Preventative, Statutory & Corrective Maintenance, including any emergency/un-planned maintenance activities on C&I, C&I Control and C&I Protection systems.
- Maintenance services must be completed in the specified time by the *Contractor* as required and related paperwork must be signed off, otherwise it will be defined as rework. The *Employers* Supervisor will do the QC on the PM's.
- Reasons why defects cannot be completed in time must be done in writing (i.e. spares, plant availability, etc.) and to be sent to the *Employers* Supervisor and the C&I distribution list via email as soon as the *Contractor* becomes aware of the problem.
- Spares needed to correct defect must be specified (i.e. part/stock numbers, etc.) in writing to the *Employers* Supervisor by the *Contractor* as soon as it is identified.
- Daily feedback must be given to the *Employers* Supervisor during the morning section meeting.
- The *Contractor* must perform maintenance from the field instrument up to the control room.
- The *Employer* will give assistance when necessary, but the *Contractor* will still be responsible to complete the work.
- The *Employers* Supervisor can give instruction to the *Contractor* to do the work on any part of the plant under this contract.

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- The *Contractor* will be responsible to take out the necessary **PLANT SAFETY PERMITS** where required to safely execute the work.
- The *Contractor* representatives must be authorized under the PLANT SAFETY REGULATION. The Contractor representatives will complete the required courses and authorisations as soon as possible - Not longer than six months after commencement of contract - thereafter they shall renew their authorisation before it expires.
- When any maintenance or testing of **protection systems** became necessary, the *Contractor* personnel will inform the relevant Eskom Supervisor or Senior technician to supervise the activities and to sign off on the documentation.

- **Outages / Planned Maintenance**

- *Contractor* to be available for planned and Outage overtime on request.
- Rates during outage activities will be the same as for normal work.
- Normal working hours during outages will be applied but can be changed to ad-hoc working hours as deemed necessary by *Service Manager*.
- Night/Shift work will apply during outages when required by *Service Manager*.
- The *Contractor* must provide own transport for outage purposes that is separate from normal home-work-home and stand-by duties to prevent any response delays.

- **Standby**

- The *Contractor* will form part of the normal C&I standby crew.
- The *Contractor* will perform standby duties on all responsible plant areas included in this contract where needed.
- The standby roster will be supplied to the *Contract Employees* in advance for the normal standby duties.
- The *Contractor* must be available for any planned/unplanned and outage related activities on an as and when required basis.
- The *Contractor* must provide own transport for standby purposes that is separate from normal home-work-home and outage related transport arrangements to prevent any response delays.

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- Call out response time: *Contractor* must report to site within one hour of the call. The *Contractor* must send an email to the *Employers* Supervisor with a detailed description of what work was done after work has been completed.
- If stores items are required, the *Employers* Supervisor / Senior Technician on standby will be called out to withdraw the spares from the stores and the *Contractor* will collect all spares from the stores.
- When it is necessary for the contractor during any situation to pirate items from other plants, the *Employers* pirating procedure must be followed. The *Contractor* will be responsible to complete the necessary documentation and must ensure that the items are replaced back on the plant when it becomes available. The Pirating of any equipment is to be raised with the *Service Manager/Supervisor* prior to the completion of the Pirating Procedure.
- If additional discipline (Electrical or Mechanical) is needed from The *Employer* – Operating department can call out the relevant departments. The request will be logged in the Contractor's detail description which is sent to the *Employers* Supervisor after work is completed.
- The *Contractor* will be required to change from normal day shift with standby duties to shift work when it is deemed necessary by the *Services Manager* to maintain plant availability to nominal state.

• Safety

- The *Contractor* will be responsible for own Safety, Health and Environmental regulations as per the OHSACT and must provide required resources to accomplice the requirements to the ACT.
- The *Contractor* shall comply with all Safety, Health and Environmental regulations as per the OHSACT.
- The *Contractor* will appoint one of the onsite personnel as the Health and Safety rep in each section as per the OHSACT.
- The *Contractor* will familiarize himself with the plant and the dangers/hazards of obstacles in the vicinity, as Eskom will not be liable for any occurrence that can lead to a compensation event.
- Work Permit Risk Assessment and Pre-job briefing forms must be completed before each task.
- Application for Isolation Permit's must be requested at least one day in advance.
- All tools and electrical equipment must be inspected regularly, and records filed as per the OHSACT requirements.

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- All PPE to be provided by Contractor and must be Eskom / SABS approved as per Eskom Standard (240-).
- Arc Flash Protection PPE must be part of the PPE issued by the *Contractor* to the *Contractor* employees.
- All PPE must also be inspected on a regular basis to ensure it is still safe for use.
- Good housekeeping must always be upheld.
- The *Contractor* personnel will be responsible for good housekeeping in the workshops where they are allocated to.
- The *Contractor* must clean and remove all debris after completing a task.
- *Contractor* personnel shall request scaffolding as and when necessary to perform work safely.
- Working hours of the individual team members could be varied to have members distancing from each other due to the Covid pandemic to protect work force and continuity of services as deemed necessary by *Contractor* and Service Manager.
- The *Contractor* shall ensure that the contracted recourse have the required tools and that it is always kept in a safe and usable condition by doing monthly tool checks.
- The *Contractor* shall ensure that the contracted recourse are supplied with the required multi-meters that are re-calibrated annually, and SANAS calibration certificates are kept on record.

• Training

- The *Contractor* shall ensure that all personnel executing work on Eskom site are adequately trained in the required field. Proof of all relevant training done must be submitted during contract tendering phase as part of the tender returnables.
- The *Contractor* will ensure that all personnel are trained and authorised under Eskom's Plant Safety Regulations as soon as practically possible. Cost for Eskom internal training courses will be funded by Eskom on first attempt.
- Eskom will provide the required internal training courses to authorize personnel under the Plant Safety Regulations. This will include Fossil Fuel Firing Regulations, Plant Safety Regulations, Risk assessment, Arc Flash Protection and Key Learning Points.
- Cost for additional Eskom internal training courses required due to turn over of Contractor staff will be recovered from the *Contractor*.

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- Cost for re-training and lost time of personnel due to failure to pass Eskom internal training course evaluation test will be recovered from *Contractor*.
- Limited on-job training can be provided by current Eskom maintenance staff to assist *Contractor* to get familiarised with the plant lay out and C&I systems.
- **General**
 - *Contractor* must ensure that adequate skilled resources are always available to provide plant reliability, availability, and continuity of service on all plant areas.
 - The *Contractor* must provide proof of experience and qualifications of all personnel.
 - The *Contractor* shall ensure that all resources supplied under this contract shall meet the minimum Eskom requirements.
 - The *Contractor* shall always ensure the minimum staff availability for safe reliable continuity of the service.
 - When it became necessary, the *Contractor* shall ensure replace staff members have as minimum the same skills and competencies as the person being replaced.
 - All Assessments must be signed off and accompanied with all support documentation by both the *Contractor* and *Service Manager*.
 - The *Service Manager* will verify that the work performed as per Assessment is in fact a true reflection of work performed. Support documentation will be required from the *Contractor*.
 - Normal working hours will be from 07:00 to 16:15 from Mondays to Thursdays and from 07:00 to 12:00 on Fridays but can be changed to shifts when deemed necessary by the *Services manager*.
 - The *Contractor* will supply a biometric / Facial Recognition time keeping system's for on-site time management in each of the sections.
 - The report together with attendance register and overtime documentation will be supplied to the *Service manager* on a weekly basis.
 - The *Contractor* will be required to implement C&I modifications on related plant areas at no additional remuneration.

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- During any plant upgrade or refurbishment, the *Contractor* remains responsible for the contracted plant area. It is a requirement that the *Contractor* will form part of the commissioning and testing of the plant and new systems during the projects.
- The *Contractor* personnel shall always be in possession of their Eskom identification card and present it on request when on Eskom Plant.
- All services must be done according to the Eskom standards and procedures
- The *Contractor* is responsible for Work week management that will be 50% of *Contractors* Performance **KPI's**.
- The *Contractor* is responsible for Overtime management that will be 20% of the *Contractors* Performance **KPI's**.
- The *Contractor* is responsible for spares management that will be 20% of the *Contractors* Performance **KPI's**.
- The *Contractor* supervisor will be responsible for good housekeeping in the workshop that will be 10% of the *Contractors* Performance **KPI's**
- All special tools like programming units and calibration equipment will be supplied by Eskom.
- All documentation such as procedures and plant related information remains the property of Tutuka. Information provided by Eskom may only be used for maintenance purposes at Tutuka power station.

Minimum requirements of people employed

The *Contractor* shall always ensure a qualified skilled workforce on site. The *Contractor* must submit detailed Curriculum Vitae's, highlighting experience related to the works, certified copies of qualifications and/or certificates of its qualified staff prior to work commencing on site.

➤ C&I Mechanician Units x 9:

Must have as minimum a C&I trade test with a Red Seal certificate. At least two thirds (2/3) of the staff compliment must have a minimum of 3 years post qualification Coal Fired Power Station related experience in the C&I maintenance field. Rest of the staff compliment must have a minimum of 3 years C&I maintenance experience in non-energy related industry. Must have a valid driver's license and be able to do stand by duties as required.

- Fully competent in the following criteria's:
 - Knowledge and maintenance of Turbine centreline.
 - Knowledge and maintenance of Turbine auxiliary plant.
 - Knowledge and maintenance of Condensate Polishing Plant (CPP).
 - Knowledge and maintenance of Coal fired Once-Through Boiler plant, Tube Mills and associated equipment.

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- Knowledge and maintenance of Peabody Oil Burners.
- Maintenance, calibration, and fault finding on various field instruments – ABB, Siemens, Yokogawa, NZ, VEGA, (Hart communication).
- Maintenance, calibration, and fault finding on GEC type 7 MHME.
- Maintenance, calibration, and fault finding on Bentley Nevada 3500 MHNE.
- Maintenance and fault finding on Siemens TELEPERM C, ISKAMATIC B DCS systems.
- Knowledge of GEC Electrohydraulic Governor valve stroking and fault finding
- Knowledge of GEC Electrohydraulic Governor valve Hysteresis tests
- Knowledge of LP – Bypass hydraulic valve stroking and fault finding
- HP Bypass hydraulic valve stroking and fault finding. (Bobb & Reuther)
- RH Safety valve stroking and fault finding. (Bobb & Reuther)
- Submersible scraper conveyer hydraulic drive control maintenance and fault finding. (Hagglund)
- Set-up and stroking of Pneumatic valves and controllers Siemens SIPART, ABB TZID, Fisher, FESTO, METSO and all other brands that could be installed at Tutuka in future,
- Set-up and stroking of following type of actuators: Rotork (Old and new type), Siemens, Hopkinson, Auma, Drehmo and all other actuator brands that could be installed in future at Tutuka.
- Maintenance of conveyor belt protection systems.
- Maintenance and calibration of different types of field instrumentation.
- Plant Safety Regulations and Permit to work system.

➤ **C&I Mechanician Outside Plant x 4:**

Must have as minimum a C&I trade test with a Red Seal certificate. At least two thirds (2/3) of the staff compliment must have a minimum of 3 years post qualification Coal Fired Power Station related experience in the C&I maintenance field. Rest of the staff compliment must have a minimum of 3 years non-energy related experience in the C&I maintenance field. Must have a valid driver's license and be able to do stand by duties as required.

- Fully competent in the following criteria's:

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- Knowledge and maintenance of Water treatment plant. **(Chemical Plant)**
- Knowledge and maintenance of Condensate Polishing Plant (CPP).
- Knowledge and maintenance of Coal and Ash handling plant.
- Maintenance, calibration, and fault finding on various field instruments – ABB, Siemens, Yokogawa, NZ, VEGA, (Hart communication).
- Maintenance and fault-finding on Siemens S5 150U, S5 O10 and S7 PLC's.
- Maintenance and fault finding on various E&H, Swan, ABB, Siemens, and other types of analytical equipment.
- Set-up and stroking of Pneumatic valves and controllers Siemens SIPART, ABB TZID, Fisher, FESTO, METSO and all other brands that could be installed at Tutuka in future,
- Set-up and stroking of following type of actuators: Rotork (Old and new type), Siemens, Hopkinson, Auma, and all other actuator brands that could be installed in future at Tutuka.
- Maintenance of conveyor belt protection systems.
- Maintenance and calibration of different types of field instrumentation.
- Plant Safety Regulations and Permit to work system.