

	Scope of Work	Camden Power Station
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1 Description of the Services

1.1 Executive overview

The contract is for the provision of the overhauling, maintenance, inspection and commissioning of all types and brands of electrical Actuators used at Camden Power Station, as per the service Information. Services rendered are for the duration of the contract, from the start date to the completion date.

1.2 Employer's objectives and purpose of the Service

The services are applicable to all Camden Power Station and associated facilities for overhaul, maintenance, inspection and commissioning of all Actuators. The works is for all current and future installations which shall include all routine Actuator, inspections & cleaning, support services, emergency breakdown services and defect correction during normal and abnormal plant condition or operation, to ensure the integrity of the electrical plant at Camden Power Station.

1.3 Operating Philosophy

Camden Power Station operates on a 24-hour basis, 7 days per week in continuous load following mode. It is envisaged that Camden Power Station will be De-commissioned in November 2025.

The Employer's operations and maintenance philosophy is a time-based and condition based maintenance philosophy.

1.4 Maintenance Philosophy

The Contractor provides all Actuator services, specialized tools and Equipment, specialist personnel, and all associated services to accomplish and execute the requirements of the Service Information. Provide technical consulting services, which support the optimum and continuous operation of the Employer's assets.

The works are performed on existing and new installations and complies with good engineering and maintenance practices and standards for fossil fuelled power plants. The Services conforms to the legal, environmental and other Eskom specifications, procedures, standards and conditions prevailing at the Site.

In these terms the contractor shall maintain and issue all legal and required certification to ensure compliance.

Refer to "Business Excellence Quality Management Manual for Refurbishment, Engineering, Manufacturing, and Maintenance Works for Camden Power Station", Document 004/11187

Services will be carried out in the following categories:

1.4.1 Corrective Maintenance

The maintenance shall be carried out after a failure has occurred and is intended to restore an item to a state in which it can perform its required function.

1.4.2 Preventive Maintenance

Is the maintenance carried out at pre-determined intervals, or corresponding to prescribed criteria, and intended to reduce the probability of failure, or the performance degradation of an item.

1.4.3 Planned Maintenance

This is work performed during a planned (scheduled) outage of the specific plant or generating unit.

1.4.4 Routine Maintenance

This is a time-based maintenance work that is performed with the plant either on or off load.

1.4.5 General Overhaul

During every outage all plant having no redundancy is overhauled to ensure reliable and safe operation.

During every GO's, actuator's torque values must be verified and be recorded.

As per the detailed engineering Scope of Work, identified actuators will be removed from the plant and a thorough inspection be done on all of them. A detailed inspection report with recommendation shall be presented to the system engineer before any actuator can be send away for repairs. The finalising of any actuators to be sent for repair will be with the responsible engineering department and the Service manager. Services and repairs will be detailed and executed as per the OEM recommendations

NB: A detailed Engineering Scope of work will be issued for every outage (GO). Note that the frequencies of GO's are subject to change at any stage due to Eskom maintenance philosophies.

Draft a standard list of actuators to be send for repairs during outage

A detailed list of requests from mechanical department for removal of actuators to work on valves.

1.4.6 Mini General Overhaul (MGO)

During every MGO, only the following interventions will be attended to:

- a) Those plant items with no redundancy and which will not remain reliable up to the next General Overhaul.
- b) Inspections of suspect plant items.
- c) All defects, Notifications on SAP, Inspections and Maintenance requests as per the SAP/Flip system, and Engineering Scope of Work for the unit.

NB: A detailed Engineering Scope of Work will be issued for every outage MGO. Note that the frequencies of GO's are subject to change at any stage due to Eskom maintenance philosophies.

1.4.7 Opportunity Repairs.

These are short outages between Overhauls to enable essential repairs and inspections to be executed.

For a detailed description, refer to Planned Maintenance Philosophy and Strategy (Outages), Document 004 / 6081rev.4

1.5 Legislation and Site regulations

The contractor conforms to all prevailing legal requirements of the Republic of South-Africa, Eskom SOC Limited and Camden Power Station Site legal requirements.

With special reference but not limited to the following: (Note that latest revisions apply before and during contract period.)

- a) Occupational Health and Safety Act 85 of 1993 as amended and its regulations.
- b) Compensation for Occupational Injuries and Diseases Act 130 of 1993 as amended.
- c) Compliance and registration with CIDB minimum grade level 6 relevant for this type of maintenance work.
- d) National Environmental Management Act 107 of 1998 as amended.
- e) National Environmental Waste Act 59 of 2008 as amended.
- f) National Water Act 36 of 1998 as amended.
- g) Eskom procedures and safety requirements set out in Safety, Health and Environmental specifications, Document 004 4830.
- h) Eskom procedure 32-95 in regards with the management of safety, health and environmental incidents.
- i) Eskom vehicle safety specification: Doc No: 32-345
- j) Occupational healthy safety risk assessment procedure. Doc No: 32-520
- k) Annexure B: Acknowledgement form for Eskom SHE rules and requirement. Template No: 240-43921804.
- l) SHEQ Policy. Doc No: 32-727
- m) High Risk/ Construction project (Technical Service Contract). Doc No: 240-147937026.
- n) Lifesaving rule, Doc No: 240-62196227
- o) Employer's policy for waste management on Site, policy. 229/12295.
- p) QM 58 Quality management manual 240-105658000
- q) Business Excellence Quality Management Manual for Refurbishment, Engineering, Manufacturing, and Maintenance Works for Camden Power Station", Document 004/11187
- r) Safety health and Environmental Specification 004-4682
- s) 004 10852 QMS strategic approach
- t) Actuator maintenance manuals
- u) Any other act or procedure deemed necessary or applicable if the work includes some toxic and/or hazardous substances during normal and routine

maintenance activities stipulated in this document. In this case the Contractor handles such hazardous substances in accordance with the applicable regulations and procedures and is disposed of by the contractor in accordance with the applicable law.

1.6 Plant Safety regulations (PSR)

- a) The contractor ensures that all required employees (refer to KPI's , site supervisors, technicians) under his/her control are authorised in terms of Eskom Plant Safety Regulations (PSR) for the entire duration of the contract. The contractor's staff shall be authorised within 3 months from the start date of the Contract. Penalties shall apply in case of non-adherence.
- b) The contractor supervises and manages the health and safety of his/her own employees and gives access to other parties on plant and equipment under the contractor's control in terms of PSR.
- c) The contractor maintains records of authorised employees; manages re-authorisation and report the statistics on monthly site report.

1.7 Plant Labelling

1.7.1 Actuator Labelling

The contractor adheres to the requirements stipulated in document 004/4682, inspects and reports on all labelling of equipment and plant under his control to ensure the following:

- a) All electrical plant shall be correctly labelled as per document 004/4682.
- b) All non-labelled or defective labelling shall be reported to the Employer.
- c) The employer will provide new labelling which shall then be affixed to the equipment identified.
- d) The contractor ensures that the labelling is affixed to replacement part of any piece of equipment or part that is removed or replaced.

1.7.2 Maintenance of actuators

Authorization and training

- a) The contractor must be authorized in terms of plant safety regulation to be able to perform the following activities covered in a scope of work. Failing will result in 15% deducted on monthly gross labour charged effective after three months when the contract is in place/signed.
- b) It's the responsibility of the contractor to provide training for his employees on safety, health, environmental and quality management. It's the responsibility of the contractor to train its employees/have trained qualified employees on all types and brands of actuators at Camden within the period of three months after awarding the contract.

1.7.3 Daily inspection and maintenance

- a) Minimum 2 production units' actuators must be inspected per day.
- b) Day to Day Maintenance & Repair
- c) PSR or flip permits to work system to be utilised during any inspection and maintenance to be conducted.
- d) Conduct day to day plant inspections, identified defects to be corrected immediately.
- e) FLIP/SAP systems to be used to raise defects for any defective plant to be attended.
- f) No defective plant shall be attendant to without notifications loaded on FLIP/SAP system
- g) Attend to breakdowns and callouts on daily basis, ensuring that work is executed under a PTW.
- h) Perform actuator PM's and complete actuator defects as scheduled.
- i) Visit unit controllers at each control desk twice a day (morning and before knock off time) for actuator problems.
- j) Contractor should use their advanced expertise to correct any problem in the plant as soon as reasonably safe and feasible.
- k) On completion of planned maintenance, the PM/CM document to be signed and handed over to the Eskom contract manager for verification before it can be submitted to the planners for close out.
- l) All defects/ notifications to be prioritised based on the severity and criticality of the plant in taking safety and production into consideration.
- m) All priority 1 defects to be attended to and completed on the same shift, if it does not require outage or half load opportunity.
- n) A detailed risk assessment is to be conducted at all times when a service or maintenance work to done Camden Power Station.
- o) If it's not safe to work, stop the task and report immediately to the Eskom supervisor.
- p) Spares to be used or ordered must be permitted by the Eskom contract manager.
- q) Job observations shall be conducted on work to be performed.
- r) All maintenance and outage work requires ITP (inspection test plan), and only approved plans must be used.
- s) All prescribed meetings to be attended on time with proper feedback.
- t) Monthly reports shall cover the following: work done, training, call outs, safety, state on plant, man hours, recommendations, and areas of concerns.

1.7.4 Monthly inspections and maintenance

Detailed visual inspections shall be done on actuators, as per the available inspection sheets, any deviations from the norm shall be attended to and repaired to the original functional state of the equipment in question. Visual check shall not be limited, but include the following:

- a) Any visible oil leaks

- b) Excessive vibration
- c) Noise level
- d) Gearbox sweating
- e) Temperature of actuator
- f) Temperature of gearbox
- g) Check that all the relevant fasters are in position
- h) Remove spindle cover tube
- i) Check for excessive wear on the valve spindle
- j) Check for adequate lubrication on the valve spindle
- k) Report where spindle covers are missing
- l) clean actuator
- m) Lubricate actuator using the right grease or oil
- n) Top up actuator oil.
- o) Check & repair electrical and control cable glands.
- p) General appearance of the actuator.

1.7.5 Periodic inspection according to PM's (also refer to inspection sheet part 1 &2)

The following items will be checked:

- a) Any visible oil leaks
- b) Excessive vibration
- c) Noise level
- d) Gearbox sweating
- e) Temperature of actuator
- f) Temperature of gearbox
- g) Check that all the relevant fasters are in position
- h) Remove spindle cover tube
- i) Check for excessive wear on the valve spindle
- j) Check for adequate lubrication on the valve spindle
- k) Report where spindle covers are missing
- l) clean actuator
- m) Lubricate actuator using the right grease or oil
- n) Top up actuator oil.
- o) Check & repair electrical and control cable glands.
- p) General appearance of the actuator.
- q) Oil levels, oil colour
- r) Remove the electrical cable cover plate and check all the electrical connections on the actuator, all to be tight.
- s) Remove actuator cover and check all the electronic switch mechanisms for looseness and dirt's
- t) Check all electrical fuses
- u) Check that all the relevant fasters are in position; this will also be checked for tightness.
- v) Apply new grease and lubricants/ oil.

NB: PSR PTW shall be in place for the above inspections.

1.7.6 Pre outage inspection report

Prior to a planned outage or maintenance shutdown, the contractor offers a “pre-outage inspection report” which is a comprehensive document outlining which equipment’s/ actuators needs attention during the outage.

This must be done at least 3 month before outage start date.

This allows for good pre-outage planning, scope of work, financial estimates and eliminates delivery problems.

1.7.7 Periodic services

- a) Visual inspections per actuator as per PM and inspection sheet.
- b) Major actuator service during General Overhaul when required will include monthly maintenance and other activities specified by the Service manager.
- c) Pre-outage inspection report compiled by the contractor.
- d) Detailed outage engineering Scope of work

NB: Full documentation for periodic services shall be available on request.

1.7.8 Tasks executed on actuators**Actuator:**

1.7.8.1 Switch mechanism in order, inspect gears on:

- a) Open limit operational
- b) Closed Limit operational
- c) Open Torque operational
- d) Closed Torque operational
- e) Counter unit gears in order
- f) Pick-off box gears in order
- g) Potentiometer operational (4-20mA)
- h) Limit gear in order
- i) Open torque settings (NM)
- j) Close Torque Set(NM)
- k) Switch Mechanism Cover O-ring/Secure
- l) All internal connections secure

1.7.8.2 Motor

- a) Motor Phases balanced (Ω)
- b) Motor thermo switch in order
- c) Wiring harness – No visible cracks on wiring
- d) Check all electrical fuses
- e) Check that contactor or Solid-state relay in functional

Ensure that all internal fasteners are in place and secure

1.7.8.3 Plant

- a) Remove the electrical cable cover plate and check all the electrical connection are in order on the actuator supply cover

- b) Check that all the relevant fasters are in position; this will also be checked for tightness.

1.7.8.4 Apply new grease and lubricants

Gearbox/Linear:

If applicable, the following mechanical components must also be inspected, and defects reported:

- a) Gearbox sweating
- b) Temperature of gearbox (by touch)
- c) Check for excessive wear on the valve spindle (visual only)
- d) Check for adequate lubrication on the valve spindle (visual only)
- e) Linear oil seals in place
- f) Linear connection to damper arm or valve shaft satisfactory

1.7.1.5 Standard service

- a) Parts replace:

- O-rings
- Oil Seals
- Bearings
- Oil

- b) Sandblast
- c) Paint

1.7.8.6 Testing (Functional)

After the actuator has been service the following inspections and tests are Performed on the actuator: (all torque settings must be confirmed with Engineering department per the actuator specific location on the Plant)

- a) Open Torque as per OEM specifications
- b) Closed Torque as per OEM specifications
- c) Stalled Torque

1.7.9 Painting of actuators.

- a) All actuators must be painted after it is overhauled, and only where the need arose for paintwork, the actuator external paintwork must be inspected.
- b) Paintwork should be done using standard colour as per OEM specification.
- c) Paint is viewed as a consumable and as such must be supplied by the contractor.

1.7.10 Installation, commissioning and De-Commissioning

- a) Fitting and commissioning of actuators must be done during the time span specified by Camden P/S. This is crucial whenever actuators are removed during an outage.
- b) The contractor must ensure that actuators that have been overhauled are installed in the correct position in the plant. Actuators must be tagged before removal by the contractor.
- c) Where torque settings must be adjusted / set in the plant, such adjustments must be witnessed by Camden P/S C&I and QC personnel. Such changes must be approved by Eskom Engineering prior implementation. Such settings must be in accordance with the original installation values, and where assistance is required with such settings, C&I of Camden P/S must be contacted to obtain the correct value.
- d) The contractor is responsible for installing the actuator after it was repaired according to an installation plan submitted to and accepted by Camden P/S.
- e) The installation plan must be made available to Camden P/S and such installation must be done in conjunction with Camden P/S.
- f) After installation, all actuators must be checked for correct operation (with regard to settings and calibration), and such checks should be witnessed by EMD, QC and C&I in conjunction with OPS.
- g) The actuator operating direction must be checked. If necessary, the setting of limits/strokes must be demonstrated by C&I personnel.
- h) A list of actuators with special stroke settings must be obtained from C&I Maintenance in advance.

De-commissioning

- a) Once the Generating plant units is shut down, instructions shall be issued to remove actuators, and prepare such actuators for long storage periods, or as per the Station decision per the asset management process.
- b) Actuators shall be stored as per the instructions for storage from OEM.

1.7.11. Maintenance & Repair

- a) Before any Maintenance & Repair commences on an actuator, the current defect at that time must be verified by the Contract Supervisor.
- b) No maintenance & repair will commence without notification verification by the supervisor.

1.7.12 Spares

- a) No pirating of spares may take place without the necessary authorization. (If any spares from other units are to be taken without authorization, disciplinary sanctions will be implemented against such persons)
- b) Spares that are used must be according to OEM specifications, therefore approved OEM spares or otherwise approved by an Eskom representative in writing.
- c) Replacement actuators will first be verified at Camden stores, if the need arise to replace a unit, otherwise a spare will be utilised from the contractors' stock and replaced as soon as possible.
- d) If an actuator has been used in the plant from contractor's critical spares due to an urgent production risk, that actuator shall be drawn from Eskom stores the next day with the same technical specification and be issued to the service provider as replacement.
- e) All actuators must be maintained according to the philosophies & recommendations of the original equipment manufacturer and/or Eskom. Changes to the above are to be authorized by Electrical Engineering department.

NOTE:

- f) A separate spares contract is running concurrent to the Service Contract for the refurbishment of actuators, and replacement identified spares, as per the Stock on hand at Eskom warehouse.

1.7.12.1 Consignment stock holding

See details on next page

- a) The contractor shall provide a critical spares list that can influence production.
- b) In addition, the Contractor shall provide and advise on an additional spare and price lists of spares that will be required and that will influence production.
- c) The following table represent minimum quantities of actuator auxiliary spares that must be available for on Site repairs.

New Actuators (Model / Type)	
DMC59 / MC002	2 of Each
DMC59 / MC003	2 of Each
DMC120 / MC002	2 of Each
DMC120 / MC003	2 of Each
DMC120 WM	2 of each
DMC249 / MC002	2 of Each
DMC249 / MC003	2 of Each
DMC500 / MC002	2 of Each
DMC500 / MC003	2 of Each
DMC1000 / MC002	2 of Each
DMC1000 / MC003	2 of Each
DPMC319 / MC002	2 of Each
DMCR59 / MC003	2 of Each
DMCR120 / MC003	2 of Each
DMCR250 / MC003	2 of Each
DIMR59 / MC003	2 of Each
DIMR120 / MC003	2 of Each
DIMR250 / MC003	2 of Each
Serviced Actuators (Model/type)	
D..59	2 of Each
D..120	2 of Each
D..249	2 of Each
D..250	2 of Each
D..500	2 of Each
DP..319	2 of Each
Rewound Motors (Act. Model)	
D59 / DP59 -DP1599	2 of Each
D60 - D249 & D250/D500 SMALL	2 of Each
D250/ D500 LARGE	2 of Each
D1000	2 of Each

Actuator auxiliary components

Actuator Parts	
Small contactor set	10 of Each
Large contactor set	10 of Each
Solid state relay	10 of Each
003 Starter (Matic C)	10 of Each
003 Starter (I-Matic)	10 of Each
Starter top cards MC003	10 of Each
Combi Sensors	10 of Each
Switch mechanism (complete) MC002	10 of Each

Switch mechanism (complete) MC003 (Incl. Pot)	10 of Each
I-Matic 4-20mA Card	10 of Each
Local lamp indication lights	10 of Each
Fuses for starter	10 of Each
Potentiometer	5 of Each
Potentiometer Gear Set	5 of Each
Pick off Box	5 of Each
Harting plugs 1-24 Pin (Male)	5 of Each
Harting plugs 1-24 Pin (Female)	5 of Each
Harting plugs 25-48 Pin (Male)	5 of Each
Harting plugs 25-48 Pin (Female)	5 of Each
Harting plugs 6 Pin, 600V (Male)	5 of Each
Harting plugs 6 Pin, 600V (Female)	5 of Each
Harting plugs 10 Pin (Male)	5 of Each
Harting plugs 10 Pin (Female)	5 of Each
Torque Switch	10 of Each
Limit switch	5 of Each
Starter mounting pillars D59	5 of Each
Starter securing pillars D59	5 of Each
Starter mounting pillars D60-1000	5 of Each
Starter securing pillars D60-1000	5 of Each
C-Matic Top Cover D59	4 of Each
C-Matic Top Cover D120-1000	4 of Each
D..59 Handwheel (125mm)	5
D..120/249/250 Hand wheel (250mm)	5
D..500 Hand wheel (400mm)	5
D..1000 Hand wheel (500mm)	5
Motors (New)	
D..59 Motor	3 of each
DP..59/119/319 Motor	3 of each
D..120/249 Motor	3 of each
D..250/500 Motor < 2kW	3 of each
D..250/500 Motor ≥ 2kW	3 of each
Actuators Auma type (New)	
Auma Binary SA 075F10 (Eskom stock 234836)	2 of each
Auma Modulating SAR 10.1F10 (Eskom stock 234835)	2 of each

1.7.13 Removal of Actuators during General Outage

Before removing any actuator for overhaul, a detailed outage report must have been submitted to the contract supervisor, this will include a list of all the inspected actuators with detailed descriptions of all defects.

- a) The contractor must ensure that actuators are properly tagged to ensure that they are returned to the correct position in the plant. The contractor must also verify that the correct actuators are removed as stipulated in the order for overhaul work.
- b) The contractor must ensure that all bolts, nuts, keys, and other components of the actuator are kept safe after removal of the actuator. Any missing items, if lost, must be replaced by the contractor at his own cost.
- c) The actuators must be fully serviced and accompanied with individual Data Pack which includes all Failure report, Quotations (Price breakdown), Repair reports, Test reports, signed QCP's with the delivery to Site.

1.7.14 Documentation & Quotes

- d) When quotes are given, a price should be given per actuator that will be overhauled.
- e) Quotations and failure reports must be agreed upon before commencing with repairs or replacements.
- f) A detailed Price breakdown for every actuator is required, stipulating the components used with the prices.
- g) The quotes given must include the transportation costs.

1.7.15 Guarantees

- a) A guarantee for equipment is required as follows:
- b) At least a twelve (12) month guarantee when equipment is installed in the Plant.
- c) A 18 (eighteen) month guarantee must also be given on all equipment kept on hand or stores.
- d) The contractor must clearly state when the guarantee starts and when it ends.

1.7.16 Test Certificates

Provide a data pack with complete tests and Certificates after completion of any major Repairs services.

1.7.17 House keeping

- a) All work places must be kept clean at all times, Interface with other contractors to ensure compliance.
- b) The workshop and storage area's to be neatly painted and labelled accordingly.
- c) Eating room and change room shall be kept clean and orderly at all time.
- d) Correctly discard waste in allocated coloured waste bins.
- e) Ensure that plant worked on is cleaned before clearance of any permit.

1.7.18 Training

- a) The contractor provides all relevant training to his personnel in order to render Eskom with the required services (Technical).
- b) The service provider must also make provision for basic training to Eskom personnel: Maintenance, engineering and operating staff as and when required.
- c) All relevant courses must be attended as required on contractor's account, except PSR.

2 Completion Communication

- a) Contractor informs and gives feedback on progress and completion of every task to supervisor
- b) The contractor submits month end reports on all services carried out.

3 Meetings

Refer to Document 229/12149, Code of Conduct for Meetings. The contractor shall adhere to the requirements as stipulated and ensure that:

- a) All relevant meetings must be attended;
- b) Attends other meetings as required and directed by the Service Manager;
- c) Attends Monthly scheduled contract meeting.

4 Specialized Tools and Test Equipment.

- a) Contractor must provide all required tools to execute the requirements;
- b) All tools that need certificates must have valid certificate to comply with safety requirements.

5 Integration with the Employer's organization

The contractor provides the services in an integrated manner at Camden Power Station with the inclusion of the following minimum expectations:

- a) Attends to breakdowns, until completed, unless otherwise agreed with the Contract Manager; Call outs will be according to SAP priority. Priority 1- safety related, and load loss or unit trip. Response time for emergencies is immediate or within 45 Min on call outs basis. For scheduled breakdowns is per SAP compliance schedule.
- b) The employer requires on-site maintenance during normal working hours. Standby & call out service, is required after working hours.
- c) Provides personnel on standby on a 24 hour basis, in accordance with his conditions of service. The contractor ensures that there is an emergency Standby team at all times.

6 Providing access to and interface with others

If other contractors are working or located in the same area with your team, the Contractor co-ordinates his work and planning with other Contract Managers to maintain harmonious working conditions on Site.

During the progress of the works the Contractor provides access to others who also perform work in the same area, on an as and when required basis.

The Contractor makes his own assessment of the problems and difficulties which may be encountered for providing access to and interfacing with others (this includes access difficulties experienced during outages or commissioning phases).

7 Management meetings

- a) Regular meetings of a general nature may be convened and chaired by the Contract Manager as when they are required.
- b) All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting.
- c) Monthly contractual meetings will be scheduled.
- d) Daily morning feedback meetings to discuss production outcomes
- e) Monthly Statutory Safety meetings
- f) Planning meetings to schedule work.
- g) Trip actions and investigation meetings.
- h) Any other Forums.
- i) Any other meetings as required by Camden management team.

8 Documentation control

All contractual communications will be in the form of properly compiled letters or forms attached to e mails and not as a message in the e mail itself.

Monthly Maintenance reports to be submitted to the employer, this will include a list of all maintenance done, spares and consumable used.

Monthly Report on State of plant (condition of Actuators – Report will include inspections on actuators done, time, date & what was inspected.)

9 Safety Management

The contractor adheres to all site safety regulations at all times. This shall include OHSA 85 of 1993, all relevant SANS and Eskom safety regulations.

10 Safety Health and Environmental Requirements

The contractor will comply with the following:

- a) Camden Power Station Health and Safety Standards as per Camden Power Station Contractors Safety manual. This manual will be handed over on contract award.
- b) Adhere to the Occupational Health and Safety Act 85 of 1993 with special reference to Section 44 of this Act.
- c) National Environmental Management Act 107 of 1998.
- d) Mine Health and Safety Act 29 of 1996 (Where applicable).
- e) Eskom / Camden Policies and Procedures.
- f) Compensation for Occupational Injuries and Diseases Act of 1993 (COID).

- g) All staff will undergo Safety Induction training before site occupation.
- h) Adhere to Eskom and Camden Power Station's zero tolerance for non-compliance to any of Eskom's and/or Camden Power Station's safety rules and regulations.

11 Eskom Lifesaving rules

- a) Open, Isolate, Test, Earth, Bond and/or Insulate Before Touch;
- b) Hook up at Heights;
- c) Buckle Up;
- d) Be Sober;
- e) Ensure you have a permit to work;
- f) Wear the correct PPE

The Contract Manager shall be entitled to request the Contractor to stop work, without penalty to the Employer, when the Contractor's personnel fail to conform to acceptable health & safety standards or contravene the health and safety sections and regulations.

The Contract Manager must be informed as soon as possible but not later than the end of the shift about any injury or damage of property or any equipment by means of a flash report.

The Contractor must perform job observations on critical tasks as identified, as well as Near Miss reporting and provide proof to the Contract Manager.

12 Invoicing and payment

Within one week of receiving a payment certificate from the Contract Manager in terms of core clause 51.1 of the NEC document, the Contractor provides the Employer with a tax invoice showing the amount due for payment equal to that stated in the Contract Manager's payment certificate.

The Contractor shall address the tax invoice with the Assessment to:

Invoices Eskom local: Invoiceseskomlocal@eskom.co.za

The following must be included on each invoice the following information:

- a) Name and address of the Contractor and the Contract Manager;
- b) The contract number and title;
- c) Contractor's VAT registration number;
- d) The Employer's VAT registration number 4740101508;
- e) Description of service provided for each item invoiced based on the Price List;
- f) Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.

13 People

13.1 Minimum requirements of people employed on the Site

- a) All personnel should have a Minimum of 3 years' experience in the Industrial field or Power Station Environment.
- b) The training and certification requirements shall be valid for the duration of the contract.

- c) 1 X Site supervisor shall have National Diploma/National N Diploma in Electrical Engineering studies as minimum qualification and driver license, with 3 years' experience in the field of Drehmo and Auma actuators.
- d) 3 X Artisans shall have Grade 12/N3 and Electrical trade test as minimum qualification with 3 year experience in a field of Drehmo & Auma actuators and driver's license.
- e) 3 X Semi-skilled with minimum qualification of Grade 10/Std 8 or ABET level 3 with an ability to read & write and also potential to be technical developed.
- f) 1 X General worker with minimum qualification of Grade 10 or ABET level 3.
- g) NOTE****the contractor shall also provide human resources to attend to OUTAGES at Camden Power Station, on an "As and When" required basis.
- h) Technical competence valid certificates to service and maintain actuators are required from the Contractor. This will include proof of courses done to be qualified to work on the type of actuator stipulated above.
- i) Maintenance personnel will be available for standby 7 days a week; if the specific artisan is not available the contractor will provide an alternative technician.
- j) Standby crew reaction time in emergencies should be as quick as possible (within 45 min). The contractor will provide the employer with a standby roster with the contact details of the persons on standby.

13.2 BBBEE and referencing scheme

Eskom supports B-BBEE and gender equity.

14 Subcontracting

14.1 Subcontractors

Contract with subcontractors are back-to-back with the main contract, using the NEC conditions of the contract and are subject to acceptance by the Service Manager prior to such contracts being entered into by the contractor.

14.2 Subcontract documentation, and assessment of subcontract tenders

Copies of every order issued by the contractor to his Subcontractor or by his Subcontractor to his suppliers are submitted to the Service Manager for his assessment of the amount due, within the assessment interval. Prices are required to be shown on such orders and in all respects the copies are true copies of the original order to the subcontractors.

Prices are not allowed to be escalated or inflated, and must align with Eskom Procurement Policies 32-1034 rev 4, and National Treasury requirements.

Handling fees of Suppliers will be listed in the NEC3 TSC and agreed upon during negotiation stage.

14.3 Limitations on subcontracting

The Employer may require that the Contractor must subcontract certain specialised work, or that the Contractor shall not subcontract more than a specified proportion of the whole of the contract.

15 Plant and Materials

15.1 Contractor's procurement of Plant and Materials

Service Manager may direct the contractor to procure materials, where the contractor shall submit original quotations for approval.

Handling fees of Suppliers will be listed in the NEC3 TSC and agreed upon during negotiation stage.

15.2 Spares and Consumables

The employer will provide spares as per the contract agreement.

16 Employer's Site entry and security control, permits, and Site regulations

16.1 Site entry requirements

The Contractor applies for access permits (Contractor's permit) at the Security gate on the start date of the contract. The Contractor personnel shall be required to be in possession of an access permit at all times.

In order to assist Protection Services with the issuing of permits and the identification of personnel on site the contractor is to supply a list of all personnel that he intends using on site, at least 72 hours prior to entry of the Security Area. This list must be delivered to Protection Services. The list, identified with the Contractor's name, is to contain the following information:

- a) Employee name;
- b) Employee ID Number;
- c) The Employer's Safety Coordinator's signature;
- d) Electrical Maintenance Manager signature;
- e) Copy of the ID book for every employee of the Contractor.

Access permits must be returned to protection services when the worker/s leave the site, either after completion of the services, or upon earlier termination of service of a worker during the contract period.

To speed up the process of gaining access to the site, the Contractor must compile detailed lists of all tools and equipment (including serial numbers where applicable) to be taken on site before arriving at the Power Station Security gate. An authorised copy of this list must be retained by the contractor - to be used again when the tools and equipment are removed from site after the completion of the services.

Any additional tools or equipment brought to site, or any tools or equipment removed during the contract period must be reported to protection services and all lists amended likewise. Gate release permits will not be issued for the removal of any tools or equipment not specified on the tool list.

The Contractor's visitors and all personnel shall conform at all times to the security arrangements in force at the site. Application forms for visitors must be filled in by the

Contractor's Site Manager and approved by the Contract Manager, one day before the visit and submitted to the Employer's Protection Services office. Visitors will not be allowed on site if the necessary forms are not in the possession of the security staff.

The Chief of Protection Services may, with valid cause, remove any, of the Contractor's personnel from the site, either temporarily, or permanently. He may deny access to the site to any person whom, in the opinion of the said Chief of Protection Services, constitutes a security risk.

No unauthorised vehicles will be allowed on site. Only Contractor's Vehicles with displayed Contract Vehicle Permits disks will be allowed on site. Contract Vehicle Applications should be directed to the Service Manager.

The Contractor will be restricted to the working areas associated with his place of work. The Contractor is forbidden to enter any other areas, and must ensure that his employees abide by these regulations.

16.2 Restrictions to access on Site, roads, walkways and barricades

Contractors are to adhere to all the rules, Legalities and site regulations.

16.3 People restrictions on Site; hours of work, conduct and records

Restrictions and hours of work may apply on some Sites. It is very important that the Contractor keeps records of his people on Site, including those of his Subcontractors which the Contract Manager or Supervisor have access to at any time. These records may be needed when assessing compensation events.

Lunch time is between 12:00 until 12:30. Knock off time is 16:30 from Monday to Thursday and 12:15 on Friday.

Timesheets and attendance registers will be current, and kept for monthly assessment.

All call-out forms will be completed at the Power Station EOD desk at arrival of a call-out, and signed –out before departure. These records shall be made available for assessment and payments.

16.4 Publicity and progress photographs

Contractors are to adhere to all the rules and site regulations.

17 Contractor's Equipment

Contractors must keep records of Equipment on Site including whether it is owned or hired. The records will include safety testing, load testing, calibration etc.: it will be utilised for site clearance and audit purposes.

The contractor is liable for his own tools and equipment, and must ensure the safe storage and use of such items. The employer is not responsible for any loss or damages.

18 Equipment provided by the Employer.

The Employer provides critical spares as predetermined.

Consumables which are stock items shall be provided by the Employer, except any kind of PPE.

Where the contractor is required to make use of Category 2A, and Category 4 ARC Flash protective wear, such as entering and working in Electrical Substations, or where there is a danger of an Electrical Flashover or Arc to occur, or to check electrical Isolations, the service provider shall provide such category Arc flash overalls to their employees. It is the responsibility of the contractor to maintain such equipment in a good condition in line with Eskom requirements.

19 Potable Water

The contractor may utilize water points on site. Where no supply is available, the contractor may use the nearest water supply points available.

20 Electrical Power

Existing 3 Phase 380V and single phase 220V power on site may be utilised by the contractor upon engineering approval. Where no supplies are available the contractor supplies his own source. The employer does not guarantee uninterrupted supply.

21 Sanitary Facilities

Centralised permanent facilities to serve the Power Station terrace are provided by the employer.

22 Waste Removal

Household waste removal to the bins, as provided on the Site by the employer, is the responsibility of the Contractor. The contractor complies with Employer's policy for waste management on Site, policy. 229/12295.

The Employer will provide and empty special colour coded bins for refuse disposal.

The Contractor will be responsible for refuse bins for his own site.

The Contractor ensures that all workers under his control strictly adhere to the correct use of refuse bins:

For the full duration of the services, the Contractor is responsible to keep the work area clean of any rubble, and to place all refuse into the bins provided.

23 Telecommunication

Connections are available. The contractor applies via the Contract Manager for a connection. Connection fees and calls are for the contractor's account.

The contractor shall provide everything else necessary for the work.

24 Excavations and associated water control

In areas up to 1 m and greater is required to be excavated, an excavation permit will be required. The need for any excavation requires an Application for excavation permit, and the scanning of underground Services.

25 Commissioning

The contractor shall avail his team for all station commissioning activities at any time of the day and night.

26 Access given by the Employer for correction of Defects

Defects shall be attended to as per works management guidelines.

27 Fire precautions

Any tampering with the Employer's fire equipment is strictly forbidden and is a criminal offence.

All exit doors, fire escape routes, walkways, stairways, stair landings and access to electrical distribution boards must be kept free of obstruction, and not be used for work or storage at any time. Firefighting equipment must remain accessible at all times.

In case of a fire, report the location and extent of the fire to the Electrical Operating Desk at extension 3471.

Take the necessary action to safe guard the area to prevent injury and spreading of the fire.

Do not use elevators in the case that there is a fire.

28 Reporting of Accidents

The Employer follows an accident prevention policy that includes the investigation of all accidents involving personnel and property. This is done with the intention of introducing control measures to prevent a re-occurrence of the same incidents. The Contractor is expected to fully co-operate to achieve this objective. The Contract Manager must be informed immediately of any incidents and any damage to property or equipment must be reported within the same shift.

NOTE! This report does not relieve the Contractor of his legal obligation to report certain incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

29 Accommodation and catering

The Contractor will be responsible for the provision of accommodation to his personnel – the Employer does not provide accommodation.

The Contractor or any of his employees or subcontractors will be allowed to use the Employer's dining facilities.

The Contractor or any of his employees or subcontractors may also buy take away meals from the fast foods outlet on Site. Lunch time is from 12:00 to 12:30.

30 Provided by the Contractor

The contractor shall provide accommodation, reliable and sufficient transport to transport all employees to and from work on daily basis and on standby, equipment, standard PPE and all required measures to render required services. The Contractor has to ensure own cleaning of Protective Clothing. The Contractor also has to provide own cleaning of the workshop premises, offices, kitchen and stores in the Workshop area.

31 Control of noise

Full PPE shall be worn at all times when entering the plant.

32 Hook up's to existing works

- a) Eskom Live saving Rules shall apply;
- b) Contractor shall provide safety harnesses;
- c) Tests and inspections;
- d) Description of tests and inspections;
- e) Safety equipment shall be tested/ calibrated and inspected before use by the Contractor, a record/ certificates shall be kept by the contractor and available upon request.

33 Key Performance Indicators (KPI's)

The contractor shall be measured on performance on the following criteria:

- a) PSR authorisation – target 75%
- b) PSR compliance and audits – target 100%
- c) Call out response time – 45 Min reporting to EOD
- d) Quality and Safety audits – 100%

Under Works management section the following criteria will be met:

- a) Electrical UCF – above 85% (unit availability to generate power)
- b) Electrical UCLF – below 10% (unit unavailability to generate power, including load losses and trips)
- c) Electrical OCLF – 0 % (external factors leading to unavailability, lightning strikes, cable theft causing trips)
- d) Electrical TRIPS – 2 PA, target 0 (unit unavailability due to any electrical failure or trip)
- e) Electrical PCLF – below 4% (planned electrical work where unit is required to be off load or opportunity outage)
- f) Schedule Compliance – 100% (execution of PM's on time versus submitted plan to execute. 4 week plan)
- g) PM Compliance – 100% (close out of PM's scheduled)
- h) Statutory Violations – 0 violations (statutory PM's executed on time if any)
- i) QC Compliance – 100% ITP's for critical tasks
- j) Rework Report – 0 Rework in 90 day cycle

NCR – Non Conformance Report

A NCR report will be raised leading to an investigation and close out for non-adherence to the KPI criteria. A total of 4 NCR reports raised in a financial year will lead to automatic contract cancellation.