

	Scope Of Work	Generation
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1. Introduction

This document defines the generic technical scope of work for the establishment of a four-year service contract for the maintenance and servicing of boiler emissions gas analysers, including the spares required for the service for both the South and North stacks at Arnot Power Station. It outlines the quality assurance requirements, deliverables, specifications, defect correction procedures, procurement and testing of Plant and Materials, and cataloguing obligations, as well as the minimum personnel requirements, BBBEE and preferencing considerations, and compliance with national growth initiatives.

The document further addresses working conditions on the affected property, site access and security controls, health, safety and environmental requirements, cooperation with other parties, management of equipment and site services, control of noise, dust and waste, and integration with existing works. In addition, it defines testing and inspection regimes, applicable drawings and responsibility matrices, and establishes the Service Level Agreement (SLA), including response times, key performance indicators (KPIs), non-performance remedies, and the applicable commercial and contractual conditions to ensure reliable, compliant, and efficient operation of the emissions monitoring systems.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of the document is to:

Define and formalize the technical requirements for appointing a contractor to:

1. Full Service and maintain the boiler emissions gas analysers installed on both the South and North stacks.
2. Cover a contract period of four (4) years.
3. Ensure compliance, reliability, and continuous operation at Arnot Power Station.

It serves as the technical foundation for a service contract between the power station and a maintenance/service provider.

2.1.2 Applicability

This SOW applies to all Continuous Emission Monitoring (CEM) gas analysers for gaseous emission measurement on the North and South Smokestacks to measure SO₂, NO_x, CO, CO₂ and O₂ gases. This document shall apply throughout Arnot Power Station.

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2.1.3 Effective date

This document is effective from the date of authorisation.

2.2 Normative/Informative References

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

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] 240-56242363: Emissions Monitoring and Reporting Standard
- [3] 240-105658000: Supplier quality management: specification.
- [4] 240-84513751: Material Specification and Certification Guideline for Power Generation Plant
- [5] 240-86546783: Procurement Standard for Material Certification Requirements Applicable to Metallic Products Used on Low and Medium Pressure Applications
- [6] 240-54820279: Receive Materials
- [7] 240-72273656, Power Generation Asset Criticality Classification Standard
- [8] 240-60725304: Asset Management Policy
- [9] 240-54818977: Storage of Materials
- [10] 240-53499108 Process Control Manual (PCM) for Perform Coal Power Plant Boiler Engineering
- [11] VDI 3950: Calibration of Automatic Emission Measuring Instruments.
- [12] BS EN 15259: Requirements for Measurement Sections.
- [13] BS EN 14181: Quality Assurance of Automated Measuring Systems.
- [14] BS EN 15267: Certification of automated measuring systems.
- [15] SABS ISO 14001 – Environmental management Systems – Requirements with guidance for use.
- [16] Notice 893 (Nov 2013): Listed Activities and Associated Minimum Emission Standards identified in terms of Section 21 of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).
- [17] Eskom Integrated Risk Management Procedure, 32-391.
- [18] Environmental Performance Indicator Reporting Standard, 32-249.
- [19] Atmospheric Emission Management Policy, EPL 32-419.
- [20] Eskom Climate Change Policy, 240-77569976.
- [21] Field Instrument Installation Standard 240-56355754.

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[22] Notice 831 (Nov 2013 or latest): Declaration of a Small Boiler as a Controlled Emitter and Establishment of Emissions Standards in Terms of the National Environmental Act: Air Quality Act, 2004 (Act No. 39 of 2004)

2.2.2 Informative

[23] Occupational Health and Safety Act (OHS Act) No. 85 of 1993 Definitions

[24] National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

[25] Eskom Power Station Atmospheric Emissions Licences.

[26] IEC 60721-3-1: Classification of environmental conditions – Part 3-1: Classification of groups of environmental parameters and their severities – Storage.

[27] IEC 60721-3-2: Classification of environmental conditions – Part 3-2: Classification of groups of environmental parameters and their severities – Transportation.

[28] IEC 60721-3-3: Classification of environmental conditions – Part 3-3: Classification of groups of environmental parameters and their severities – Stationary use at weather protected locations.

Definition	Description
Approved Inspection Authority	An Inspection Authority approved by the Chief Inspector of Machinery in terms of the Occupational Health and Safety Act 85 of 1993
Inspection	Activities, which by means of examination, observation or measurement, determine the conformance of material, parts, components etc., to predetermined specifications and quality requirements and compliance to the design code
Testing	All activities required determining the actual performance or condition of an item

2.2.3 Disclosure Classification:

Confidential: the classification given to information that may be used by malicious/opposing/hostile elements to harm the objectives and functions of Eskom Holdings Limited.

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2.3 Abbreviations

Abbreviation	Meaning given to the abbreviation
PCM	Process Control Manual
SHEQ	Safety, Health, Environmental & Quality
SOW	Scope Of Work
OEM	Original Equipment Manufacturer
CEM	Continuous Emission Monitoring
NEMAQA)	National Environmental Management: Air Quality
SOx	Sulphur oxides
NOx	Nitric oxide
CO	Carbon monoxide
O ₂	Oxygen
CO ₂	carbon dioxide
ERIC	Eskom Directive and Innovation Centre
AST	Annual Surveillance Test
DCS	Distributed Control System
CM	Corrective Maintenance
PM	Preventative maintenance
TSC	Term Service Contract
QA	Quality Assurance
QCP	Quality Control Plan

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OHSACT	Occupational Health and Safety Act
LCO	Local Control Office
C&I	Control and Instrumentation
TSC	Term Service Contract
PPE	Personal Protective Equipment
RA	Risk Assessment

2.4 Roles and Responsibilities

2.4.1 Eskom buyers and all people sourcing and procuring

Are to ensure that:

- proper procurement specifications, including material specification and certification requirements, are used to control technical quality of products throughout the manufacturing and refurbishment value chain with sound traceability through the procurement value chain.
- No order should be placed without confirming with the system engineer or technical governance workgroup lead that the procurement specification includes materials specification and certification requirements as per this guideline. They should also ensure the materials certificates were reviewed and accepted by the Engineers before accepting the material and activation of payment.

2.4.2 Plant System Engineers

Are responsible to:

- Compile or facilitate workgroups to assist with compilation of procurement specifications and the enforcement thereof. These include detailed material specifications with certification requirements according to this Guideline for procurement of plant and plant components under their control.

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- Assist with development of correct specifications and implementation of good technical controls (i.e. technical evaluation of suppliers, inspection and test plan development, and sign-off) and decision making (to handle deviation/concession requests, accept material and certification) during the procurement and offsite refurbishment processes. This is a critical process for non-off the shelf items but is also applicable to ensuring the correct level of certification is obtained for off the shelf items which are used in low and medium pressure areas”
- Engage the commercial process (procurement/buying) to ensure technical requirements are met for all suppliers.
- Control all records in official Eskom systems and keep them for the life of the plant. This will require loading these onto the relevant electronic systems (e.g. HyperWave and Sharepoint)

2.4.3 Engineering Managers

Are responsible to supply resources (i.e. system engineers) to:

- Compile detailed procurement specifications, which include material specifications with certification requirements.
- Engage with procurement and control technical product quality according to the procurement specifications during the procurement process.

2.4.4 Material Management (Stores)

Are responsible to:

- Ensure that C&I Engineering, Maintenance and Outages department completes the required quality control documents and sign off all relevant documentation prior to booking any spare into the stores.

2.4.5 C&I Maintenance Service Manager

Are responsible:

The Service Manager administers the contract on behalf of the Employer and exercises the functions stated in the contract.

- **Programme and Progress Control**
 - Monitor the Contractor's progress against the Contractor's Plan and the Completion Dates.
 - Inform the Contractor when it becomes apparent that the Contractor will not complete the service or any part of the service in accordance with the Contractor's Plan and where such failure is due to the Contractor.

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- Receive, review, and monitor the Contractor's **plan of action** submitted to address delays and review the Contractor's **daily progress reports** on the effectiveness of such plan.
- **Coordination and Prioritisation of Work**
 - Liaise with the work scheduler and relevant parties to ensure that **high-priority work** is given preference over normal planned work, in accordance with the Service Information.
- **Meetings**
 - Convene or attend specialist meetings as required by the Service Information or, where not specified, as agreed between the Parties.
 - Receive records and minutes of meetings within five days of the meeting and use these records to monitor progress and performance of the service.
- **Records, Reports and Access**
 - Specify the **format, content, frequency, and method of submission** of records and reports required from the Contractor, including records demonstrating delivery against the **ASGI-SA performance criteria**.
 - Have **access at any time** to records kept by the Contractor relating to the Contractor's people and Subcontractors working on the Affected Property.
 - Use such records where required for the assessment of **compensation events**.
- **Payment Administration**
 - Issue **payment certificates** in accordance with **Core Clause 51.1**.
 - Receive and review the Contractor's **tax invoices**, ensuring that the invoiced amount is equal to the amount stated in the payment certificate.
- **Incidents, Injuries and Damage**
 - Receive immediate notification of incidents.
 - Receive reports of damage to property or equipment within **12 hours**.
 - Receive reports of injuries or damage to property or equipment within **24 hours** and ensure that appropriate contractual actions are taken.
- **Performance Monitoring**
 - Receive, review, and assess the Contractor's reports on actual performance against the stated **service performance criteria**.
 - Monitor compliance with the Scope and Service Information and take action in accordance with the contract where non-compliance is identified.

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- **Contractor's Yard and Facilities**

- Receive the Contractor's **written request** for a yard and associated storage, office, and workshop facilities, indicating locality and area requirements, submitted as soon as possible after the **Contract Date**.
- Coordinate with the Employer regarding the provision and allocation of the site provided for the Contractor's use.

2.5 Process for Monitoring

- Not Applicable.

2.6 Related/Supporting Documents

- Relevant approve NEC Contract

3. Scope Applicability And Service Requirements

Service and Maintenance of the South and North stack

The Service and Maintenance to be carried out shall include but not limited to the following:

Carrying out full calibrations on the gas analysers with certified gases every two weeks in accordance with Eskom's Emissions Monitoring and reporting standard (240-56242363) issued by Eskom Generation Environmental Management Department).

All the calibration test gases should first be delivered to Eskom, where the gases must be checked against standard gas that has been verified by the National Metrology Institute of South Africa (NMISA, in accordance with this directive. Copies of Certificates of conformance for the calibration gases should be handed over to the Contract Supervisor at ARNOT together with calibration certificates for each calibration visit for the stacks.

Providing a full service and maintenance on the gas analysers in accordance with manufacturer's specifications and applicable standards, this will include but not limited to the MONTHLY PM (preventative maintenance).

The Contractor shall be responsible for carrying out all the works during calibration in accordance with the latest revision of Eskom's Emissions Monitoring and reporting standard (240-56242363), or its latest replacement when available. Copies of these documents will be available from Eskom upon request through the Contract Supervisor. The Contractor shall comply with any other standard from Eskom and any legislation promulgated by Government from time to time to the extent to which these analysers shall be affected by the legislation.

A written status report shall be delivered or emailed to the Employer not more than three days after each system visit by the Contractor, outlining the purpose of the visit, actions performed, results of calibrations, and any other pertinent facts that need to be brought to the Employer's attention.

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In addition, a log will be maintained by the Contract Supervisor and kept with Arnot C&I maintenance. It will be a record of each visit, purpose of visits and any pertinent actions taken on each gas analyser.

Terms of calibration visits

The end user expects the service provider to arrange on his/her own cost should s/he not complete calibration during the contractual calibration visit.

Terms of monthly calibration payments

The service provider shall ensure that all analysers worked at are fully operational for payment to be processed.

OR

The service provider visited the site but could not perform calibration due to end user mishaps/problems.

3.1 The required Spares for the service and maintenance of the gas analysers

Description	Part No
Procal CEM P2000 Process Lens	3-0039
Procal CEM P2000 Main Lens	3-0005
Procal CEM P2000 Sample mirror	3-0040
Procal CEM Gasket for P2000 in-situ heater	3- 0104
Procal CEM Gasket for P2000 Mounting flange	3-0102
Procal CEM Gasket for P2000 lens inner seal	3-0033
Procal CEM Gasket for P2000 lens outer seal	3-0035
Procal CEM Gasket for P2000 end mirror (3 tie rod)	3-0036

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Procal CEM Gasket Clamp Ring (6 hole)	3-0037
Procal CEM Gasket for tie Rod	3-0034
Procal CEM Pressure transducer assembly	1-0005
Procal CEM PCB assembly 2-1180J00	2-0003E
Procal CEM Sinter assembly 500mm SS	1-0001
Procal CEM IR source for P2000	1-0007E
Procal CEM AVU Coil	8-0153
Procal CEM AVU Valve seal	12-0026
Procal CEM AVU Valve 15mm N/C	8-0089
Procal CEM AVU Valve 15mm N/O	8-0090
Procal CEM Input Module 2-1103-00	2-0016C
Procal CEM Output Module 2-1190-00	2-0017C
Procal CEM Comms chips 5-1584-83	6-0138
Procal CEM Opto-isolators	6-0221
Procal CEM Input output Unit (32 input board replacement	1-0229
Procal CEM In-situ Heater 1,8 m	1-0032
Procal CEM Gasket for O2 analyser blanking plate	3-0109
Procal CEM Ceramic Filter Assembly	8-0259
Procal CEM Replacement detector element for ZFK8 230V	8-0331

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(50L) Gas Cylinder O2	OXYGEN; PURITY: 0.5 PCT; CONTAINER: 50 L
(50L) Gas Cylinder (NO+CO2)	PURITY: 600 TO 1200 PPM NO AND 12% TO 13.5% CO2 PCT; CONTAINER: 50 L; GAS MIX: 600 TO 1200PPM NO AND 12 TO 13.5 % CO2 BALANCE IN N2 IN 50 LITER CYLINDER INCLUDING NMISA CERTIFICATION
(50L) Gas Cylinder (SO2+CO)	PURITY: 1200 TO 1350PPM AND 800 TO 900 PPM CO BALNCE N2 PPM; CONTAINER: 50 L; GAS MIX: 50 LITER CYLINDER INCLUDING NMISA CERTIFICATION
Moxa RS-232 Serial Converter	TCC-100I
Procal CEM P2000 Insitu IR Multi component gas analyser	1-0032
Procal CEM CO2/SO2/CO/NO/ H2O Sensors	17-0003
IOU Retro Fit Kit	1-0229
100W Power Supply Unit	6-0308
60W Power Supply Unit	6-0307
100W Power Supply Unit Case	8-0220
60W Power Supply Unit Case	8-0118
Procal CEM 2000 Computer	
Dome nuts	3-0241
Procal CEM Ametek Thermox WDG - 210/insitu	
Procal CEM DC Filter wheel 1	1-0008

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3.2 Calibration

- Only an authorised supplier or contractor is allowed to provide maintenance and calibration services to the equipment installed. The Contractor is to provide proof of authorisation when requested by the Employer through the Contract Supervisor.
- The Contractor obtains verification and certification of calibration bottles from the National Metrology Institute of South Africa (NMISA, in accordance with this directive. The Contractor to submit signed copies of certificates of conformance for the calibration test gases to Contract Supervisor for filing. The Contractor provides the results of each calibration to the Contract Supervisor.
- The Contractor to provide a maintenance report on the condition of the analyser status before and after repairs. This should be sent digitally (in pdf format) to the Eskom Contract Supervisor.
- The Contract Supervisor shall be responsible for the distribution of these reports to the internal stakeholders in Eskom.

Description of the service

The Contractor shall carry out full calibrations on the gas Analysers with certified gases every two weeks in accordance with the Eskom Directive (GEM10_L153 of 15 July 2010 issued by Eskom Generation Environmental Management Department),

All the calibration will be checked against standard gas that has been verified by the **National Metrology Institute of South Africa (NMISA)**, in accordance with this directive. Copies of Certificates of conformance for the calibration gases should be handed over to the Contract Supervisor at ARNOT together with calibration certificates for each calibration visit for the stacks.

Providing a full service and maintenance on the gas Analysers in accordance with manufacturer's specifications and applicable standard.

The Contractor will also be available for the following activities:

- **Emergency breakdown maintenance as and when required after hours including weekends and public holidays.**
- **Call out duties during normal hours as well as for afterhours including weekends and public holidays.**

Requirements for the programme:

The Contractor must submit the qualifications of the competent people that will be carrying out the works information as stipulated in this contract, to the Employer, for acceptance, with all the relevant references as and when required.

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The Contractor must submit the project implementation programme at the start of this contract. The program must include but is not limited to the following:

- A safe work procedure must be submitted at the commencement of the contract
- Safety file within the first week of the contract start date
- Names of the possible /potential candidates/employees assigned for Arnot Power Station
- List of all required consumables and spares which shall include all specifications/part numbers, supplier's name and all relevant information as deemed necessary to ease the procurement process. This list must be submitted to the Employer's Representative at the start of the contract.
- No work shall commence without all employees having done safety induction and medical checks prescribed by the Employer. The Contractor must at all times comply with Employer's safety regulation

3.3 Management strategy and start up.

The Contractor's plan for the service

- The Contractor shall provide the Employer with their Contractor's plan. The Contractor must submit the Contractor's plan at the inception of this contract.

The Contractor's plan must include but is not limited to the following:

- Quality management system implementation programme.
- A Quality Control Plan (QCP) for each Task Order with a hold, witness and verification point for the Employer to check and monitor progress.
- Safety plan including implementation programme
- Staff Qualifications and experience and/or time frame for appointment of staff
- A programme and resource schedule for the service and for each Task Order.
- Bar charts or other reporting formats, as may be required by the Employer, are provided for all task orders indicating start, inspection and completion dates, resources and costs.
- Names of the possible /potential candidates/employees. Any staff replacement should be accepted by the Employer and the replacement must meet the conditions stipulated above.
- Programmed maintenance will be carried out during the Contractor's working hours and as required in terms of the 24 hour standby provision. In case of any major breakdowns, a repair plan of action must be submitted to the Employer within 12 hours. Repair work must commence no later than the time agreed between the Employer and the Contractor on his plan of action.
- The following reports are required as supporting documentation to the program:

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- Time analysis print-out
 - Critical activities report
 - Key event report
- Planning and scheduling meetings will be held when necessary and the Employer will inform the Contractor of the format and time of these meetings.
- The Contractor submits every two weeks progress reports with copies of daily occurrence sheets attached. The daily occurrence sheet records all events, which may affect the compensation events. The Contractor may under no circumstances see or use, the submission of daily occurrence sheets and progress reports, as an early warning or compensation event notification, in terms of the Term Services Contract (TSC).
- The Contractor commences with the work in accordance with the Contractor's plan and completes the service not later than the completion dates indicated on the Contractor's plan.
- If the Contractor fails to complete any part of the service according to the Contractor's plan or it becomes apparent to Service Manager that the service not to be completed according to the Contractor's plan and if such failure is due to the Contractor then the Contractor submits his plan of action to the Service Manager to deal with the delay and the Contractor reports daily on the success of his plan of action.

Management meetings

Regular meetings of a general nature may be convened and chaired by the Supply Manager as follows:

- Title and purpose, approximate time & interval, Location and relevant attendance list of necessary stakeholders.
- Risk registers and compensation events discussed, on an every two weeks basis, when the contractor comes on site for the calibration - meeting held at C&I Workshop by employer & the Contractor, other stakeholders may be invited at the discretion of the contracts manager.
- Overall contract progress and feedback to also be discussed monthly when the contractor comes on site for the calibration – at C&I Workshop by Employer & the Contractor
- Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the service. Records of these meetings shall be submitted to the Service Manager by the person convening the meeting within five days of the meeting.
- All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the conditions of contract to carry out such actions or instructions.

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3.4 Contractor's management, supervision and key people

- Not applicable for this contract.

3.5 Provision of bonds and guarantees

- Not applicable for this contract.

3.6 Documentation control

- The Contractor will ensure that the following documentation is kept in the Employer 's documentation centre and captured on the SAP system (by the Contractor) for record and trending purposes:
- Works procedures (QA packages)
- Generic procedures to use test equipment.
- Feedback and test results into SAP PM
- PMs for all mechanical equipment
- History to be recorded on all of maintenance done
- Contractor to supply status on notifications and service cards if and when required.
- Check isolations and signs for plant safety permits as a responsible person.
- Ensures effective communication with customers.
- Maintain records and statistics.
- Advice and design changes with relevant drawing on sequencing trip conditions if necessary.
- Liaises with the work scheduler/service manager to ensure that high priority jobs get preference over normal planned work.
- Liaises with the originator of the deviation to get clear understanding of what is required to minimise delays and prevent confusion or rework.

3.7 Training workshops and technology transfer

- The Service provider will make them-selves available to provide "on-the-job" type training on maintenance of gas analysers when required by Eskom

3.8 Management of work done by Task Order

- Work is to be done in accordance with the written Task Order issued by the Employer.
- All work done is valued in accordance with the Price List unless otherwise specified.
- Actual quantities will be determined where applicable based on the requirements of each Task Order. The Contractor provides all necessary information required by the Employer to determine the cost at the assessment date for monthly costs and for each Task Order.

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3.9 Health and safety risk management

The Employer is responsible for access permits cost.

Safety Induction must be attended by all Contractors' staff. PPE must be worn at all times. The Contractor must adhere to all Eskom safety regulations as well as Eskom lifesaving rules for safety. Cost of Contractor 's medical examination, safety induction are for the Contractor 's account.

Contractor is responsible for supplying his staff with Personal Protective Equipment (PPE) which is SABS approved, and equipment should be in accordance with the Occupational Health and Safety Act (OHSACT) and site-specific requirements, including the use of this equipment's.

The Contractor must submit a safety plan which complies to safe working procedures, and it must be approved by the Project Manager/Contract Manager. The Contractor will also be responsible for the safe keeping and repairs of the tools in the event of any loss or damage to the tools. This will include the safe handling of the tools and the areas that the Employer makes available to the Contractor.

The Contractor is responsible for reporting any incident that occurs to his employees when performing the works on site to the Employer before leaving site.

Safety notification Arnot Power Station GMR 2.1

The following serves as a compliance and notification instruction with reference to the OSHACT, Act 85 of 1993 and any amendments thereto; BCEA and LRA of South Africa

.

- All safety related incidents (Category A, B&C; Fire Incidents; Usage of Fire Extinguishers and Near misses) shall be immediately notified to the ARNOT Power Station Safety Risk Management Personnel.
- All Category C incidents shall be immediately notified to the service Manager, either telephonically or in person.
- All personnel are allowed to wear Safety Harnesses whilst walking through plant or whilst in a lift (passenger/goods) only if they are secured properly onto the person and no loose sections of the harness drags onto floors, gratings, etc. where it can get caught and restrict a person's movement.
- During working on elevated positions all personnel, including scaffolders to use Safety Harness, which they shall attach onto Lifelines or secure as per the Contractors Fall
- Protection Plan, which each Contractor shall have written and available on site for perusal, as and when required.

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- All Safety Harnesses shall comply with: SANS EN 362:1992; 363:1992; 362:1992; 365:1992, 364:1992 Codes of Practice
- In terms of Section 16.1 of the OSHACT, "Every chief executive officer shall as far as is reasonably practicable ensure that the duties of his Employer as contemplated in this Act, are properly discharged." Basically, every employee, permanent/ temporary/ part-time/ sub-contracted onto the ARNOT Site shall be treated as an "employee" in terms of the Act whilst under your "direct supervision and care".
- All employees as stated in 5 above have a right to "free issue" safety equipment, which shall be supplied to them prior to commencement of work. The equipment shall comply to the relevant SABS standards and shall be in proper working condition, clean and undamaged whilst working on the ARNOT Site.
- In terms of the BCEA and LRA all employees shall be afforded a fair minimum wage, including allowances for meals and transport, if not provided, which has been agreed and set by the relevant Bargaining Councils, which form part of the Acts.
- All employees shall be granted 3 breaks during the course of a 12-hour shift (1x 15 minute break in the morning; 1 x 30-minute lunch break midday; and 1 x 15 minute break in the afternoon). Refreshments or meals shall be provided or be the responsibility of the Contractor (Employer). Employees cannot be allowed to work without having proper meals or refreshments.
- All Contractor employees entering the ARNOT Power Station site shall be medically fit. A full medical examination shall have been carried out by a Registered Occupational Health Worker who shall issue a certificate confirming the medical fitness of the employee. The examination shall consist of an eye test, heart function, lung function, chest x-ray, blood pressure, hearing function, previous occupational injuries, epilepsy, allergies, asthma and verification of work in elevated/confined spaces. Basically, a full evaluation (a Red Ticket) shall be done and only those that pass these examinations shall be allowed to work on ARNOT Power Station.
- In terms of Section 8.2 & 18.3 of the OSHACT, Employers shall ensure that employees working at ARNOT Power Station are trained in the hazards associated with the tasks and the precautionary measures are taken in the interest of health and safety. The responsibility of shall include compliance and adherence to the Eskom Plant Safety Regulations, Permit to Work System and Emergency Care.
- All Contractor s to ensure that the ARNOT Emergency Alarm is activated for serious injuries and the injured shall not be 'moved' by the Contractors staff unless in a condition which threatens the injured or other parties' life. Movement of injured persons (employees) shall be done by a trained First Aider, who shall always be at the site during the work phase.
- All Contractors shall send a Safety Officer/Representative to all Safety Meetings arranged by the Power Station.
- Safety Officers shall be at site or as reasonably practical to ensure that all hazards' risks are identified and corrective action is taken.
- All Employers shall ensure that any employee disregarding a safety instruction is not allowed to be a risk to the Contractor, ARNOT Power Station or other parties

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whilst on this site. The appropriate disciplinary action shall be taken against these employees.

- The Contractor shall have daily Toolbox talks, periodic site inspections, job observations, risk assessments, safety equipment checks and safety talks with all employees.
- Safety Induction will be done by the Power Station on prior arrangements but is not the minimum requirement. Induction and hazards training shall be done by the Contractor.
- In term of Section 37.2 of the OSHACT, you the Contractor will ensure compliance with all requirements of the OSHACT and any instruction/notification that enhances those requirements.
- All Contractors to ensure that a Safety Manual is completed prior to working on site and the relevant appointees are fully conversant with their responsibilities are trained and competent in those requirements, training proof is available, and appropriate re-training is done.
- Contractors to ensure that all staff, whether permanent/non-permanent/supplied by Labour Broker are competent in their relevant disciplines that they are employed/contracted in and all proof of training, experience, etc. is available and is current. Appropriate re-training shall have been done.
- Due to all staff being under the “direct supervision and control” of yourself, they shall and will be treated as an ‘employee’, as defined in the OSHACT, Act 85 of 1993.

Hard hats Specification

In the case of contractor employees:

- For working at height and ground level, hard hats fitted with a three-point chin strap that meets the requirements of the SANS standard must be used.
- In the case where hearing muffs are required to be worn and to ensure proper fit, a hard hat fitted with a single chin strap, made from non-elastic material, will be required.
- Hard hats must display the applicable emergency number or the applicable local emergency number. This must be clearly displayed on the back of every hard hat.
- The use of zero-harm stickers and the display of the emergency number to be of the same type as above
- Contractors should place their own company logo and not an Eskom logo in the front of the hard hat.
- The colour coding for the hard hats shall be according to contractor’s internal procedures.

In the case of any **visitor** entering an area where a hard hat is a requirement at any Eskom site,

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He or she shall wear a hard hat fitted with at least a single chin strap, unless such a person needs to

Enter an area involving heights. This information must be communicated to visitors prior to them visiting a site. A proper **risk assessment** shall be conducted to establish the need for hard hats and to identify.

The type of hat to be purchased e.g., hard hats for work at heights must have a short peak.

Minimum requirements for hard hats

- a) All hard hats used shall bear the SABS mark in accordance with SANS 1397:2003.
- b) The hard hat shall include a shell, a harness, and a chin strap.
- c) All hard hats shall have electrical insulation of at least 440 VAC (volts alternating current).
- d) The hard hat shall be made of durable quality material that has no sharp edges or material known

To cause health effects and can withstand exposure to sun, rain, cold, dust and vibrations.

Medical Facilities

Ambulance and first aid facilities are available at the PowerStation.

Safety and Accident Prevention

The Contractor will be familiar with and comply with Arnot Power Station's safety policies and procedures. Furthermore, the Contractor will comply with the provisions of the Occupational Health and Safety Act, and particularly the provisions of the Construction Regulations.

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 recurrence of the same incidents. The Contractor is expected to fully co-operate to achieve this objective. The Contractor will report any incident and accidents to Arnot Power Station within 24 hours.

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.

Compliance to 5 identified lifesaving rules:

Rule1: Open, Isolate, Test, Earth and create equipotential zone before touch

(That is, any plant operating above 1 000 V)

No person may work on any electrical network unless:

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- He/she is trained and authorised as competent for the task to be done.
- A pre-task risk assessment to identify all risks and hazards has been conducted prior to any work commencing.
- An equipotential zone is created for each worker on the job site by earthing, bonding, and/or insulating according to approved procedures.
- All conducting material is connected, all staff on site wear electrical safety shoes, and insulating techniques are applied according to standards; and
- The authorised person (team leader) has certified and shown all team members that the apparatus is safe to work on.

Rule 2: Hook up on heights

Working at height is defined as any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to a fall from or into.

No person may work at height where there is a risk of falling unless:

- A pre-task risk assessment to identify all risks and hazards has been conducted prior to commencing any work at height.
- He/she is appropriately trained.
- He/she is appropriately secured during ascending and descending and
- He/she is using an approved fall arrest system where applicable.

Rule 3: Buckle up.

No person may drive any vehicle on Eskom business and/or on Eskom premises unless the driver and all passengers are wearing seat belts.

Rule 4: Be Sober

1 No person is allowed to work under the influence of drugs and alcohol.

2 "Under the influence" means the use of alcohol, drugs, and/or a controlled substance to the extent that

He individual's faculties are in any way impaired by the consumption or use of the substances;
or

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The individual is unable to perform in a safe, productive manner; or

The individual has a level of any such substance in his/her body that corresponds to or exceeds accepted medical/legal standards; or

The individual has a level of alcohol in his/her body that is greater than 0.02% blood alcohol concentration.

This includes any level of an illegal substance in the body, irrespective of when the substance was used.

Rule 5: Ensure that you have a permit to work.

Where an authorisation limitation exists, no person shall work without the required Permit to Work (PTW), which is governed by the Plant Safety Regulations, Operating Regulations for High Voltage Systems (ORHVS) etc.

No plant is to be returned to service without the cancellation of all permits on that plant in accordance with procedure.

NB: In the case of live work, a "live work declaration form" is to be completed by the authorised person who is the person responsible for the safe execution of work according to relevant standards and procedures.

Please ensure that these rules are understood and communicated with the urgency that they deserve. If any of these rules are unclear or the consequences not understood, please do not hesitate to discuss it with Eskom.

We would like to continue our current partnership and therefore urge your support in the implementation and upholding of these rules.

The Contractor shall comply with the health and safety requirements mentioned above to this Service Information.

Rule 6: Ensure safe live working.

- Ensure all live work basic principles are adhered to, as outlined (for the method being used) in the High Voltage Live Working Standard for the respective division.
- Observe and maintain the minimum approach distance (MAD).
- Only perform live work (never mix live and dead work on the same site at the same time)

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3.10 Environmental constraints and management

The Contractor shall comply with the environmental criteria and constraints as per National and Eskom standards and guidelines prescribed for the SHEQ file. This may from time to time be updated and will be always adhered to for the duration of the contract.

3.11 Quality assurance requirements

The Contractor will comply with the Employer's Quality Requirements – ARNOT Business excellence Quality Standard. Quality requirements include visual inspection by the Employer, who will be entitled to witness the activities at any time. The Employer shall also have the right to stop work and re-instruct the Contractor to redo the work at no cost to the employer, such instruction will be given by the appointed Contract Supervisor and the Contractor shall comply with the requests.

The Employer may, by arrangement, inspect completed work. If in the opinion of the Employer, the work does not comply with the quality requirements expected from the Contractor, the Employer shall instruct the Contractor to rectify the faults. The Contractor will comply with these instructions

3.12 Deliverables

3.12.1 Specifications

3.12.2 Correction of defects

All defects shall be corrected within a period of 24 hours

3.12.3 Contractor's procurement of Plant and Materials

The contractor must provide all the spares required for the service and maintenance as per the scope requirements.

3.12.4 Tests and inspections before delivery

Materials are to be inspected and tested before delivery (Provide formal proof

3.12.5 Plant & Materials provided "free issue" by the Employer

All plant and material in stock at Arnot PowerStation stores will be free issued.

3.12.6 Cataloguing requirements by the Contractor

Not applicable to this contract

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3.13 People

3.13.1 Minimum requirements of people employed

The contract shall ensure that they have **at least two people to execute the work on site.**

3.13.2 BBBEE and preferencing scheme

The Contractor must be BEEE compliant. The copy of the certificate will be required.

3.13.3 Accelerated Shared Growth Initiative – South Africa (ASGI-SA)

Not applicable

3.14 Plant and Materials

3.14.1 Specifications

3.14.2 Correction of defects

All defects shall be corrected within a period of 24 hours

3.14.3 Contractor's procurement of Plant and Materials

The contractor shall supply all the spares which are non-stock items in our local stores as per the price list

3.14.4 Tests and inspections before delivery

Materials are to be inspected and tested before delivery (Provide formal proof

3.14.5 Plant & Materials provided “free issue” by the Employer

All plant and material in stock at Arnot PowerStation stores will be free issued.

3.14.6 Cataloguing requirements by the Contractor

Not applicable to this contract

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3.15 Working on the Affected Property

3.16 Employer's site entry and security control, permits, and site regulations

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 always in the possession of an access permit.

To assist Protection Services with the issuing of permits and the identification of personnel on site the successful contractor is to supply a list of all personnel that He/she 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 Contractors name, is to contain the following information:

- Employee name
- Employee ID Number
- The Employers Safety Coordinators signature
- Control and Instrumentation Maintenance Manager signature
- Copy of the first page of the ID book of every employee of the Contractors, photocopied.

Access permits must be returned to protection services when the workers leave the site, either after Completion of the services, or upon earlier termination of the service of the worker during the Contract

To speed up the process of gain access to the site, the Contractor must compile detailed list of all tools and equipment 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 the 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 ant tools or equipment not specified on the tool list.

The Contractors visitors and all personnel shall always conform to the security arrangements in force at the site. Application forms for visitors must be filled in by the Contractors Site Manager and approved by the Service Manager, one day before the visit and submitted to the Employers 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 Contractors personnel from the site, either temporarily, or permanently. He may deny access to the site to any person whom, in the security staff.

No unauthorised vehicles will be allowed on site. Only Contractors vehicles with displayed Contract vehicle Permits disks will be allowed on site. Contract vehicle Applications should be directed to the Service Manager.

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The Contractor will be restricted to the working areas associated with his/her place of work. The Contractor is forbidden to enter any other areas and must ensure that his employees abide by these regulations'. No recruiting of casual labour may be done on the Employers premises, including the area outside the Power Station Security Gate.

Fire Precaution

Any tampering with the Employers fire equipment is strictly forbidden. All exit doors, fire escape route, walkways, stairs, stairs landings and access to electrical distribution boards must be kept free of obstruction and not be used for work storage at all times. Firefighting equipment must always remain accessible. In case of a fire, report the location and extent of the fire to the **LCO** at extension **5035**.

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 Reoccurrence of the same incidents. The contractor is expected to fully co-operate to achieve this objective. The Service Manager must be informed immediately of any incidents and any damage to the property or equipment must be reported within 12 hours.

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.

Barricading and Screens

The Contractor will provide and install barricades and warning devices to ensure that equipment and persons are not exposed to danger or to prevent access to dangerous areas.

All welding, flame cutting and grinding work shall be properly screened to protect persons from any injuries. All gratings shall be covered with the adequate protective screening when welding or flame cutting in the vicinity.

Speed limit

All vehicles must be driven with due consideration for personnel and property. A maximum speed limit of **40km per hour** will be always adhered to on the premises.

3.17 People restrictions, hours of work, conduct and records

The Contractor is informed of the access procedures through Site regulations and that such procedures may change depending on the prevailing security situation. All vehicles must be driven with due consideration for personnel and property. A maximum speed limit of 40 kilometres per hour will be always adhered to on the premises.

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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 recurrence of the same incidents. The Contractor is expected to co-operate fully to achieve this objective. **The service Manager must be informed within 24 hours of any injuries or damage to property or equipment.**

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. The Contractor will be required to work the same hours as the Employer's employees. Monday to Thursday 07h00 to 16h15 with a necessary required lunch break. Fridays we work from 07h00 to 12h00. If these times change the Contractor will be required to adjust as well.

The Contractor keeps records of his people working on the Affected Property, including those of his Subcontractors. The Service Manager shall have access to them at any time. These records may be needed when assessing compensation events.

3.18 Health and safety facilities on the Affected Property

Medical facilities are available on site for emergencies only.

- The Contractor provides a First Aid service to his employees. In the case where these prove to be inadequate, as in the event of a serious injury, the Employer's Medical Centre and facilities will be available.
- Outside the Employer's office hours, the Employer's First Aid Services will only be available for serious injuries and life-threatening situations.
- The Employer shall be entitled, however, to recover the costs incurred, in the use of the above Employer's facilities, from the Contractor

3.19 Environmental controls, fauna & flora

Not applicable to this contract

3.20 Cooperating with and obtaining acceptance of Others

Not applicable for this is a Service Contract.

3.21 Records of Contractor's Equipment

Any equipment brought onto site by the Contractor, must be declared with Security

3.22 Equipment provided by the Employer

Not applicable for this Service Contract.

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3.23 Site services and facilities

3.23.1 Provided by the Employer

A site for the Contractor's yard is provided by the Employer. A written request, indicating the Contractor's requirements in locality and area of storage, office and Workshop sites is submitted to the Service Manager as soon as possible after the Contract Date.

Potable water

Water supply is provided by the Employer.

Meals

Meals on site for Contractor's personnel are not available.

Sanitary Facilities

Sanitary facilities are provided by the Employer.

General

The Contractor is to comply with all Site regulations and instructions. The onus is on the Contractor to ensure his familiarity with the Employer's Site regulations and inspections.

Fire Protection

The Contractor is to comply with requirements of Eskom Standard NWS 1494 Revision 4 "Fire prevention and protection of Contractor's premises on Engineering Sites" and of Site Regulations pertaining fire protection.

Fire Precautions

Any tampering with the Employer's fire equipment is strictly forbidden. All exit doors, fire escape routes, walkways, stairways and stair landings must be kept free of obstruction, and not to be used for work or storage at any time. Firefighting equipment must always remain accessible.

Plant Safety Regulations

The Employer shall on request from the Contractor isolate required plant from all sources of danger as described in the Plant Safety Regulations. The Contractor shall conform to all rules and regulations applicable to Plant Safety and shall complete the Workman's Declaration Book prior to working on the plant.

Induction training to employees

No person will be issued with an access permit without proof that the person did attend the local Arnot Power Station induction course.

A one-day access permit will be issued for persons attending the induction course. It is the Contractor's responsibility to arrange with the Project Manager one week in advance for a course booking.

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3.23.2 Provided by the Contractor

Not applicable for this contract

3.24 Control of noise, dust, water and waste

Contractor to follow SHEQ Procedures

3.25 Hook ups to existing works

Working at height is defined as any work performed above a stable work surface or where a person puts himself/herself in a position where he/she exposes himself/herself to a fall from or into.

No person may work at height where there is a risk of falling unless:

A pre-task risk assessment to identify all risks and hazards has been conducted prior to commencing any work at height.

He / she are appropriately trained.

He / she is appropriately secured during ascending and descending; and

He / she are using an approved fall arrest system where applicable

3.26 Tests and inspections

3.26.1 Description of tests and inspections

Contractor must supply QC report.

3.26.2 Materials facilities and samples for tests and inspections

Not applicable for this Service Contract

4. List of drawings

4.1 Drawings issued by the Employer

Not applicable for this Service Contract

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4.2 Responsibility Matrix (RACI)

Table 1: RACI Table

Activity	Arnot PS (Eskom)	local Agent	OEM
Technical specifications	A	R	C
Provision of spares as required for the service and maintenance	A	R	C
Inspection and diagnostics	A	R	C
Maintenance	C	R	C
Testing & recertification	A	R	C
Installation support	A	R	C
Quality audits	A	C	-
Warranty & OEM support	C	R	A

R – Responsible | A – Accountable | C – Consulted

5. Service Level Agreement (SLA)

5.1 Response and Turnaround Times

Table 2: Response Time

Service Type	Response Time	Turnaround Time
Emergency breakdown	≤ 24 hours	As agreed per SOW
Planned maintenance	Every 2 months	As per outage schedule
Technical support	≤ 48 hours	N/A
Spare parts supply	As per OEM lead time	N/A

5.2 Key Performance Indicators (KPIs)

- On-time delivery ≥ 95%.
- First-time quality acceptance ≥ 98%.
- Zero OEM compliance deviations.
- Full compliance with Arnot HSE requirements

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5.3 Non-Performance and Remedies

- Performance deviations shall be managed in terms of Eskom contract conditions as per approved NEC contract.
- Corrective actions shall be mandatory for repeat failures.
- Eskom reserves the right to suspend or terminate services for material non-compliance

5.4 Commercial And Contractual Conditions

- All services shall be executed under an approved Eskom contract or term agreement.
- Pricing shall be in accordance with approved Eskom rate schedules.
- Variations shall require written approval in line with Eskom DoA.

6. Acceptance

This document has been seen and accepted by:

Name	Designation

7. Revisions

Date	Rev.	Compiler	Remarks
February 2026	Rev 0		First Scope of Work
February 2026	Rev 1		Changes: <ul style="list-style-type: none">• Title change: Service and Maintenance of boiler emissions gas analysers for both south and north stack at Arnot power station for a period of 5 years.
April 2026	Rev 2		<ul style="list-style-type: none">• Changed period from 5 years to 4 years as per remaining station life.• Changed Bi-weekly to every two weeks, and Bi-Monthly to every two months.• Added more details of spares on table 3.1.

8. Development Team

The following people were involved in the development of this document:

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