

	SCOPE OF WORK	Camden Power Station
---	----------------------	-----------------------------

Title: **Camden Power Station - Occupational Hygiene Laboratory Services and Instrument Calibration/Repairs**

Document Identifier: **229-T2304**

Alternative Reference Number: **N/A**

Area of Applicability: **Camden Power Station**

Functional Area: **Camden Power Station**

Revision: **01**

Total Pages: **14**

Next Review Date: **May 2026**

Disclosure Classification: **Controlled Disclosure**

Compiled by	Supported by	Functional Responsibility	Authorized b
			
M. Mapeka Occupational Hygienist	N. Mabunda Senior Advisor Occupational Hygiene	L. Makhubo OHS Manager	J. Bore General Manager
Date: 16/05/2023	Date: 16/05/2023	Date: 22 May 2023	Date: 24/05/2023

Content

	Page
1. Introduction.....	2
2. Supporting Clauses	2
2.1 Scope.....	2
2.1.1 Purpose.....	2
2.1.2 Applicability	2
2.1.3 Effective date.....	2
2.2 Normative/Informative References	2
2.2.1 Normative.....	3
2.2.2 Informative.....	3
2.3 Definitions	3
2.4 Abbreviations	4
2.5 Roles and Responsibilities	5
2.6 Process for Monitoring.....	5
3. Scope of work.....	6
3.1 General requirements.....	7
3.2 Accreditation Requirements.....	7
3.3 Purchasing services and supplies	8
3.4 Service to Eskom Camden Generation Division	8
3.5 Complaints	8
3.6 Improvement	8
3.7 Corrective action	8
3.8 Preventive action.....	8
3.9 Accommodation and environmental conditions.....	8
4. Test and calibration methods.....	9
4.1 4.4 Handling, Transportation and storage	9
4.2 Equipment.....	100
4.3 Result turnaround time	100
4.4 Reporting the results	111
5. Acceptance.....	122
6. Revisions.....	122
7. Development Team	122
8. Acknowledgements.....	12

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

1. Introduction

Camden Power Station is in the process of implementing and maintaining SANAS and ISO 17020:2012 system with the aim of maintaining SANAS AIA certification. The systems require an organisation to identify general requirements for the competence to provide reliable calibration, measurement, sampling, testing, verification, and inspection infrastructure for Eskom, this will assist the business unit in putting in place appropriate measures to ensure compliance and achieve ZERO HARM.

2. Supporting Clauses

2.1 Scope

The issued scope of work is applicable to Camden Power Station Generation Division.

2.1.1 Purpose

2.1.1.1 To identify and determine a reliable contractor that provides laboratory services (supply occupational hygiene sampling media, transportation of samples between the laboratory and Camden Power station; analysis of HCA samples and maintenance of OH instruments). The contractor must make sure the laboratory is SANAS accredited and should meet the requirements for supplying HCA sampling media and analysing samples taken at Camden Power Station. The identification and evaluation of SANAS compliance will focus on the principles and requirements as set out in the SANS 17020 and SANS 17025 standards.

2.1.1.2 To identify and determine a reliable contractor that provides calibration and/or repairs of occupational hygiene instrument, transportation of occupational hygiene instrument between the laboratory and Camden Power station. The contractor must make sure only SANAS accredited laboratory is used for Calibrations (for the following instruments i.e., Sound Level Meter, Gilibrator, Indoor Air Quality Meter and ANAB/ILAC Accredited (for Heat Stress Meter and Lux Meter)

2.1.2 Applicability

This document shall apply to Camden Power Station Generation Division.

2.1.3 Effective date

This document shall be effective on 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.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

2.2.1 Normative

- [1] ISO 9001 Quality Management Systems
- [2] ISO 45001:2018 Occupational health and Safety Management Systems
- [3] ISO/IEC 17020, General requirements for the competence of testing and calibration laboratories
- [4] ISO/IEC 17025:2005, General requirements for the competence of testing and calibration laboratories.

2.2.2 Informative

- [5] Occupational health and Safety Act 85 of 1993, Hazardous Chemical Agents Regulation as framed under the OHSAct

2.3 Definitions

Accredited Inspection Authority (AIA): An inspection authority accredited by the chief inspector of the Department of Employment and Labour with respect to the due service only.

Audit: A planned, independent, and documented assessment process to determine whether agreed upon requirements are in conformance with requirements; for example, to SANS 17020, SANS 17020 an audit of the Occupational Hygiene AIA.

Competent: means a person who has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and is familiar with the Act and with the applicable regulations made under the Act.

Partner/Contractor: a person or firm that undertakes a contract to provide materials or labour to perform a service or do a job at Eskom.

Dust: a solid particle generated by handling, crushing, grinding, rapid impact, detonation and decrepitating of organic or inorganic materials such as rock, ore, metal, coal, wood, and grain

Gravimetric: pertaining to measurement by weight.

Eskom: refers to Eskom Camden Power Station.

Hazardous Chemical Agents (HCA): refers to any toxic, harmful, corrosive, irritant or asphyxiant substance or, a mixture of substances, including dusts, fumes, gases, mists and vapours, that may produce adverse health effects in individuals when exposed to sufficient quantities.

Monitoring: a continuing program of observation, measurement, and judgement

Non-Conformance: Failure to meet or fulfil a specific requirement

Occupational Hygienist (ROH): a person by virtue of his training in occupational hygiene hazard measurement /techniques is certified competent by the Eskom AIA, to carry out occupational hygiene monitoring and is registered with SAIOH.

Respirable particles: particles which are present in the breathing zone of an individual, and of a size capable of reaching parts of the respiratory tract where they may elicit a toxic response.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

Sampling: a process consisting of the withdrawal or isolation of a fractional part of a whole.

Sampling Media: a substance or material used to collect/ capture samples from atmosphere and surfaces.

Sampling Train: The order of sequence in which personal health sampling equipment parts are assembled to complete the cycle of assimilated breathed atmosphere that a person is exposed to during the working time.

South African National Accreditation System (SANAS): the sole national accreditation body for conformity assessments in South Africa.

Sub-contractor: a firm or person that carries a portion of a contract from the principal contractor or from another subcontractor.

Verification: the process of confirming the accuracy and representativeness of any measurement results by means of independent examiner or demonstration of any statement, procedure, program, figures, calculations, and references by an accredited party.

Workplace: Any physical location in which work related activities are performed under the control of the organisation

2.4 Abbreviations

Abbreviation	Explanation
MAM	Manual of Analytical Methods (NMAM)
SANS	South African National Standard
SANAS	South African National Accreditation System
ISO	International Organization for Standardization
ICP-AES	Inductively coupled plasma atomic emission spectroscopy
IR	Infrared (IR) spectroscopy
TD	Analytical thermal desorption
GC	Gas chromatography
OH	Occupational Hygiene
SAIOH	South African Institute for Occupational Hygiene
BU	Business Unit
DPM	Diesel Particulate Matter
VOC	Volatile organic compound
NIOSH	National Institute for Occupational Safety and Health
MDHS	Methods for the Determination of Hazardous Substances guidance

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

2.5 Roles and Responsibilities

2.5.1 The Client

- Contact the contractor for service required as per the scope of work
- Manage the contract and ensure that work is carried out as per the issued scope of work
- Monitor contractor compliance to legal and other requirements
- Audit the contractor facilities from time to time to fulfil compliance requirements

2.5.2 The Contractor

- To comply with the contract requirements and deliver a quality service to Eskom Camden Power station.
- To comply with any requirements stipulated in the scope of work.
- To comply with the terms and conditions as stipulated in the contract

2.6 Process for Monitoring

Compliance to this document shall be verified via internal audits.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

3. Scope of work

The scope of work will cover the following but not limited to:

- Supply of sampling media i.e., 37mm Pre-weighted PVC filters, 25mm MCE Filters with a Black Grid including support pads, sorbent tubes, filter cassettes;
- Transportation of samples from the laboratory to Camden PS and from Camden PS to the Laboratory as and when required;
- Analysis of samples for alpha quartz, volatile organic substance;
- Analysis of bulk samples to determine the presence of asbestos;
- Compilation of sample analysis reports as and when required;
- Calibrating of the following instrument:
 - Calibrating sound level meter and acoustic calibrator, including noise dose meters on an annual basis
 - Calibrating gilian gilibrator on an annual basis
 - Servicing of Phase contrast microscope on an annual basis
 - Repairs of damaged instruments as and when required
 - Calibrating lux meters once every two years
 - Calibrating heat stress meters on annual basis
 - Calibrating indoor air quality meter on an annual basis
 - Calibrating hot wire anemometer on an annual basis
- Transportation of occupational hygiene instruments for calibration from the calibration laboratory to Camden PS and from Camden PS to the calibration laboratory

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

Required sampling media:

Pre-weighed 37mm PVC filters, MCE 25mm Filters with a black grid, sorbent tubes, filter cassettes etc.

Transportation of samples:

Transportation of samples from between the laboratory and Camden Power station monthly or as when and when required.

Analysis required:

Analysis of alpha quartz (crystalline silica), volatile organic substance, monthly or as when required. The contractor must ensure that Analysis report from the SANAS Accredited laboratory is made available to Camden Power Station (As and when required)

Maintenance required:

Maintenance, servicing, calibration and repairing of OH instrumentation for Camden Power Station Generation Division as and when required.

Compliance Requirements

3.1 General requirements

The contractor must ensure that laboratory shall comply with regulatory and safety requirements on the operation of laboratories not covered by ISO 17025.

The contractor must ensure that laboratory shall operate a quality management system for their testing and calibration activities that meets the principles of ISO 9001.

The contractor must ensure that laboratory is in possession of valid certification in terms of ISO 17025 and ISO 9001

3.2 Accreditation Requirements

The contractor must ensure that the services is provided in such a way as to meet the requirements of SANS 17025 as well as to ensure only SANAS accredited laboratory and to satisfy the needs of Camden Power Station as specified in this scope of work.

The contractor must have policies and procedures to ensure the protection of Eskom's confidential information and proprietary rights, including procedures for protecting the electronic storage and transmission of results pertaining to the contract between the contractor and Eskom Camden Power Station

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

3.3 Purchasing services and supplies

The laboratory appointed by the contractor shall ensure that purchased supplies and reagents and consumable materials that affect the quality of tests and/or calibrations are not used until they have been inspected or otherwise verified as complying with standard specifications or requirements defined in the methods for the tests and/or calibrations concerned, and such records shall be made available to Camden Power Station Contract Manager.

3.4 Service to Eskom Camden Generation Division

Communication in large assignments or projects should be maintained throughout the work. The contractor should inform the Camden Power station contract manager of any delays or major deviations in the performance.

3.5 Complaints

The laboratory appointed by the contractor shall have a policy and procedure for the resolution of complaints received from Eskom or other parties. Records shall be maintained of all complaints and of the investigations and corrective actions taken by the laboratory.

3.6 Improvement

The contractor shall continually improve the effectiveness of its management system using the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review.

3.7 Corrective action

The contractor shall establish a policy and a procedure and shall designate appropriate authorities for implementing corrective action when nonconforming work or departures from the policies and procedures in the management system or technical operations have been identified.

The procedure for corrective action shall start with a root cause investigation, selection and implementation of corrective actions, Monitoring of corrective actions and

3.8 Preventive action

Needed improvements and potential sources of nonconformities, either technical or concerning the management system, shall be identified. When improvement opportunities are identified or if preventive action is required, action plans shall be developed, implemented and monitored to reduce the likelihood of the occurrence of such nonconformities and to take advantage of the opportunities for improvement.

3.9 Accommodation and environmental conditions

The contractor must ensure that the Laboratory facilities for testing and/or calibration, including the environmental conditions, shall be such as to facilitate correct performance of the tests and/or calibrations.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

4. Test and calibration methods

The contractor is required upon request to supply Camden power station with sampling media monthly or as indicated in the service level agreement.

The contractor is required to supply Camden power station with prepared sampling media (i.e., tubes, cassettes and assembled sampling heads, pre-weighed 37mm PVC filters, 25mm MCE Filters with a black grid plus support pads).

The contractor must provide maintenance of OH instruments as and when required and according to the service level agreement.

The contractor must ensure that the performance of pre and post weighing of sampling media should be done at a SANAS accredited laboratory.

4.1 Handling, Transportation, and storage

The contractor shall have procedures for the transportation, receipt, handling, protection, storage, retention and/or disposal of test and/or calibration items, including all provisions necessary to prevent contamination or deterioration, to protect the integrity of the test or calibration item, and to protect the interests of the laboratory and Eskom.

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

4.2 Equipment

The contractor shall ensure that the laboratory is equipped with all equipment required for the correct performance of the tests and/or calibrations (including sampling, preparation of test and/or calibration items, processing, and analysis of test and/or calibration data).

Equipment and its software used for testing, calibration and sampling shall be capable of achieving the accuracy required and shall comply with specifications relevant to the tests and/or calibrations concerned.

The laboratory shall have an established programme and procedure for the calibration of its equipment to ensure all equipment used for tests and/or calibrations having a significant effect on the accuracy or validity of the result of the test, calibration or sampling are calibrated before being put into service.

The contractor shall ensure that all calibration certificates for all equipment that requires calibration are made available to the Camden Power Station contract manager and shall further form part of the analysis report submitted to Camden Power Station.

4.3 Result turnaround time

The contractor shall honour the agreement with Eskom by adhering to the turnaround time specified for each method or test performed. The turnaround period shall be clearly stated on the quotation provided by the laboratory.

Analysis should be carried out by the contractor and the report to be presented within 7 – 10 working days. The contractor shall notify the Eskom contract manager of any occurrence that may possibly result in a delayed report date resulting in failure to comply with the turnaround time of 7 – 10 working days.

Turnaround time shall form part of KPI for the contractor and failure to meet the KPI will result in NCR.

Calibration of equipment should be done within 3 weeks after date of collection from Camden Power Station

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

4.4 Reporting the results

The contractor must ensure that results of each test, calibration, or series of tests or calibrations carried out by the laboratory shall be reported accurately, clearly, unambiguously, and objectively, and in accordance with any specific instructions in the test or calibration methods.

The results shall be reported in a test report or a calibration certificate and shall include all the information requested by Eskom and necessary for the interpretation of the test or calibration results and all information required by the method used.

In the case of tests or calibrations performed in a written agreement with Eskom, the results may be reported in a simplified way. When the test report contains results of tests performed by subcontractors, these results shall be clearly identified.

Final test reports shall contain, at a minimum, the information outlined below.

Eskom may request additional information to be included in the report. Along with the final test report, the laboratory shall maintain a sample case file or be able to assimilate the sample case information described in this document for a period of at least five years after the final test report is issued.

Each report shall include at least the following information:

- a) Title, e.g., “Test Report”, or “Report of Results” or “Laboratory Results”;
- b) Name and address of laboratory, location where the analysis was carried out, if different from the address of the laboratory, and name and phone number of contact person for questions;
- c) Unique identification of the report (such as serial number) and of each page, the total number of pages, and a clear identification of the end of the report;
- d) Name and address of customer, where appropriate, and project name if applicable;
- e) Description, condition, and clear identification of the analysed samples;
- f) Date of receipt of the sample(s);
- g) Identification of the validated analytical method used;
- h) Any deviations from, additions to, or exclusions from the analytical method, and any other information relevant to a specific analytical method, such as environmental conditions including the use of relevant data qualifiers;
- i) Identification of the standard(s) or specification(s) relevant to the test (when required by customer);
- j) Where necessary, a statement of compliance/non-compliance with requirements and/or specifications;
- k) Analytical test results, supported by tables, graphs, sketches, and photographs as appropriate, with units of measurement; and any failures identified; and identification of the quantitation limit and reporting units (such as mg/kg with identification of whether data is calculated on a dry weight or wet weight basis);
- l) A signature and title, or an equivalent identification, of the person(s) accepting responsibility on behalf of the laboratory for the content of the report (however produced), and date of issue

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

5. Acceptance

This document has been seen and accepted by:

Name	Designation
N/A	N/A

6. Revisions

Date	Rev.	Compiler	Remarks
May 2023	01	M. Mapeka	New Document

7. Development Team

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

- a) Manare Mapeka
- b) Ntshuxeko Mabunda

8. Acknowledgements

Ntobeko Sikhakhane – Kusile Power Station

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.