

	Scope of Work	Medupi Power Station
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Occupational Hygiene Survey**

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## **1. Introduction**

Medupi power station is a new build coal fired power station located in Lephalale, Limpopo province, consisting of 6 electricity generating units with an output of 794 MW per unit. The station uses coal as base material obtained from the Grootegeluk mine, via an overland conveyor system to the coal stock yard then the units, where combustion takes place at the boilers and the coal combustion by-product; ash (coarse and fly-ash) is disposed of at the ash dump using machinery and overland conveyors. The process involves a variety of process until electricity is produced from the generator.

These processes have a potential to expose employees to different occupational health stress factors, and the risks associated with exposure to such stress factors must be identified, assessed, controlled, and managed. The occupational health stress factors are classified as biological, chemical, ergonomic, physical, and psychological stressors that arise from the work activities. The Medupi Power Station Occupational Hygiene and Safety (OHS) department is tasked with the responsibility of ensuring that the activities of the power station are not detrimental to the health and safety of all employees, contractors, visitors, and service providers, is maintained.

The purpose of the Occupational Hygiene Survey scope of work is to propose and approve the occupational hygiene survey management programs contract at Medupi Power Station for a period of 60 months. This document supports the overall Purchasing and Supply Chain Management Procedure (32-1034) within Eskom Holdings SOC Limited.

The implementation of this scope of work will result in the following benefits to Eskom:

- Compliance to the requirements of the Occupational Health and Safety Act, (Act No 85 of 1993) and related Regulations.
- Assessment of occupational health stressors and implementation of corrective actions thereby ensure the health and safety of employees.
- Early response to and containment of non-compliance to legislative requirements.
- Prevent or minimise the risk of occupational disease reported to the Department of Employment and Labour.
- Ensure compliance to the reporting of all stressors to the Department of Employment and Labour.

## **2. Supporting Clauses**

### **2.1 Scope**

The scope of work requires the services of an Approved Inspection Authority (AIA) in Occupational hygiene to be appointed for the period of 60 months. The services will include but not limited to the following:

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- Health risk assessment
- Occupational Hygiene Stressors monitoring and
- Training of affected employees.

### **2.1.1 Purpose**

The purpose of the document is to propose and approve the appointment of an Approved Inspection Authority (AIA) for Occupational Hygiene to conduct Occupational Hygiene Monitoring Services at Medupi Power Station for a period of 60 months and the provision of training to affected employees.

### **2.1.2 Applicability**

This document is applicable to all Medupi Power Station Generation employees and the Medupi Power Station service providers.

### **2.1.3 Effective date**

This scope of works shall be effective immediately.

## **2.2 Normative/Informative References**

### **2.2.1 Normative**

The following additional documents are attached and form an integral part of this scope of work. Copies of the relevant Employer performance standards can be made available on request.

[1] No

### **2.2.2 Informative**

Parties using this document must apply the most recent edition of the documents listed below

- [2] Occupational Health and Safety Act, Act No 85 of 1993
- [3] ISO 9001:2015 Quality Management System
- [4] ISO 45001:2018 Occupational Health and Safety Management System
- [5] 32-727: Safety, Health, Environment and Quality (SHEQ Policy)
- [6] 240-62196227 Eskom Life Saving Rules
- [7] 32-288: Policy Procurement and Supply Chain Management Standard
- [8] 32-599: Standard Procurement and Supply Chain Management Standard
- [9] SANS 10083:2021 The measurement and assessment of occupational noise for hearing conservation purposes.
- [10] SANS 10103:2008 The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication
- [11] SANS 10114:2020 Artificial Lighting for Interiors

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[12] SANS 7243:2013 Hot Environments-Estimation of the heat stress on working man, based on the WBGT-index (wet bulb globe temperature)

### 2.3 Definitions

- a) **Approved:** Means acknowledged and authorized in accordance with the authoritative governing bodies, i.e., SANS, EN and so forth.
- b) **Approved Inspection Authority (AIA):** an inspection authority approved by the chief inspector in respect to occupational hygiene.
- c) **Employee:** Any person who is employed by or works for an employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.
- d) **Responsible Manager:** The manager formally appointed and within his/her delegation of authority is overall responsible to ensure occupational health and safety within the defined area of responsibility.
- e) **Risk assessment:** Overall process of hazard identification, risk analysis and risk evaluation.
- f) **PPE:** Equipment designed to be worn or used by any person to provide adequate protection from specific hazards in the workplace, when properly used.
- g) **Properly used:** Used with reasonable care and with due regard to any information, instruction or advice supplied by the designer, manufacturer, importer, seller or supplier, as the case may be.
- h) **Medical Surveillance:** is a planned programme of risk based periodic examinations (which may include clinical examinations, biological monitoring or medical tests) of employees by an occupational health nurse or in prescribed cases, by an occupational medicine practitioner. The results from this programme act as an important indication of the adequacy of worksite health and safety control measures.
- i) **Periodic Health Screening:** a medical examination and/or tests performed on a regular basis throughout an employee's work life cycle in order to monitor their health status in relation to the specific health and safety hazards to which they are exposed.
- j) **Occupational Health Practitioner:** an Occupational Medicine Practitioner, or a person who holds a qualification in Occupational Health recognised by the Medical and Dental Board of Health Professions Council of South Africa, or the South African Nursing Council. This includes both Occupational Medicine Practitioner(s) (OMP) and Occupational Health Nursing Practitioner(s) (OHNP).
- k) **Occupational Health:** means the anticipation, recognition, evaluation and control of conditions arising from the workplace, which may cause illness or adverse effects to persons.
- l) **Occupational Risk Exposure Profile:** occupational risks that an employee is exposed to and the relevant medical examinations and their frequency that must be conducted on the employee.
- m) **Risk:** the probability that injury or damage will occur.
- n) **Employer:** Any person who employs or provides work to a person and remunerates that person, or expressly or tacitly undertakes to remunerate him/her, excluding labour brokers (Temporary Employment Service Agents) as defined in the Labour Relations Act (Act No. 28 of 1956) and in terms of section 16.2 of the OHS Act.

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- o) **Medical certificate:** A certificate issued in terms of medical surveillance and the Control of Eskom Employees, using the OREP (Occupational Risk Exposure Profile) form.

## 2.4 Abbreviations

Abbreviation	Description
AIA	Approved Inspection Authority
BU	Business Unit
CA&F	Corporate Assurance and Forensics Department
COID	Compensation for Occupational Injuries and Diseases
Department	Department of Employment and Labour
EIMS	Eskom Insurance Management Services
ISO	International Organisation for Standardisation
NIOSH	National Institute for Occupational Health and Safety
OESSM	Occupational Exposure Sampling Strategies Manual
OHNP	Occupational Health Nurse Practitioner
OHP	Occupational Health Practitioner
OHS	Occupational Hygiene and Safety
OHSLC	Occupational Health and Safety Liaison Committee
OMP	Occupational Medical Practitioner
OREP	Occupational Risk Exposure Profile
PPE	Personal Protective Equipment
SANS	South African National Standards
SHEQ	Safety, Health, Environment and Quality
WBGT	Wet Bulb Globe Temperature Index

## 2.5 Roles and Responsibilities

### 2.5.1 Contractor

- a) The Contractor shall provide the following:
- a) The service of an Approved Inspection Authority (AIA) in Occupational Health and Hygiene to conduct a walkthrough survey to identify all the stressors that the employees are exposed.

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- b) The services of an AIA in Occupational hygiene for conducting occupational hygiene stressor assessment/monitoring as per the identified stressors and relevant legislation.
- c) The services provider will be responsible for conducting OHS awareness based on the outcome of the surveys conducted as and when required.
- d) Draw an Occupational Hygiene program based on the required surveys
- e) Will use accredited methods and calibrated equipment.

### **2.5.2 Criteria:**

The following criteria will be used in the selection of the preferred service provider:

- a) Registration of the service provider with the Department of Employment and Labour as an Approved Inspection Authority (AIA) for Occupational hygiene and the schedule of accreditation from SANAS.
- b) Ability to provide a SAIOH Registered Occupational Hygiene Technologist/Occupational Hygienist to conduct the surveys
- c) Use of internationally accepted methods of measurement and assessment of the workplace occupational health stressors
- d) Proven track record and ability to conduct the project of this magnitude (Good reference sources for previous performed work)
- e) Availability of the measuring equipment and access to SANAS analytical laboratory.

### **2.5.3 Report Writing Special Request:**

- a) The report shall be typed and a clear stipulation of survey areas.
- b) Recommendations and actions required to rectify deviations should be clearly stated.
- c) Inclusion of area maps for surveyed plant will be appreciated.
- d) Survey reports of stressors that don't require lab analysis to be submitted 28 days after completion of the survey.

### **2.5.4 Occupational Hygiene Surveys:**

#### **2.5.4.1 Noise**

Personal and area noise exposure measurements shall be conducted as per the legal requirements or as when required by the station. The service provider shall assist the station in identifying the noisy machines, noise zones demarcation and developing an inventory of the noise sources and the average noise they generate.

Measurements should be conducted according to SANS codes requirements

References:

- Occupational health and Safety Act, (Act no 85 of 1993)

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- Noise Induced Hearing Loss Regulations

#### 2.5.4.2 Hazardous Chemical Agents

The hazardous chemical agents shall be assessed as per the requirements of the Regulation of Hazardous Chemical Agents of 2021. Hazardous chemical stressors include all forms in which a chemical could be found, i.e., liquid, solid, gas, vapour, mist, dust, fumes and aerosols; and will be surveyed in accordance with the approved and recognised surveying/test methods, i.e. NIOSH & OESSM.

#### 2.5.4.3 Illumination Survey

The illumination survey will include measurements of artificial i.e., Day and Night –time illumination is required for the entire plant and including also outside plants. The survey must be conducted in accordance with SANS code as referenced below, must exclude natural light influence.

References:

- Occupational health and Safety Act, (Act no 85 of 1993) Environmental Regulations for workplaces.

#### 2.5.4.4 Indoor Air Quality and Ventilation

Indoor air quality survey is required for the entire plant, administration building and include outside plants.

References:

- Occupational health and Safety Act, (Act no 85 of 1993) Environmental Regulations for Workplaces GNR1754

#### 2.5.4.4 Vibration Study and Survey

Vibration study for the Medupi Power Station is required to identify Vibration Inventories and recommendations on the exposure

#### 2.5.4.5 Hazardous Biological / Microbiological Surveys:

Bi-annual Personal and environmental swabs required for biological / microbiological monitoring. Main focus at the food handling premises (to include food sampling), **Sewage plant, Medical center, sanitary facilities (especially shower facilities), Legionella and Air conditioning systems.**

References:

- Occupational health and Safety Act, (Act no 85 of 1993) Facilities Regulations and Regulation for Hazardous Biological Agents

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#### **2.5.4.6 Ergonomics Assessment**

Ergonomics Assessment is required to determine the risk of employees to ergonomic stress related disorders, musculoskeletal strain injuries, handling and lifting of materials

References:

- Occupational health and Safety Act, (Act no 85 of 1993), Ergonomics Regulation 2018:

#### **2.5.4.7 Heat Stress Monitoring**

The thermal processes affecting the employees shall be identified and evaluated in accordance with the required legislation. The control measures should be in line with the requirements of appropriate legislation, as well as local and international standards.

- Occupational Health and Safety Act, (Act No 85 of 1993), Environmental Regulations for Workplaces and the applicable SANS standard.

#### **2.5.4.8 Laboratory analysis**

All the assessments that require chemical, microbiological and/or biological analysis must be sent to a SANAS accredited laboratory and proof of that should be shared with the reports.

#### **2.5.4.9 Occupational Hygiene Awareness & Training**

There might be a need to conduct training for all employees and/or affected employees on the results of the analysis and the occupational health and hygiene stressors assessed. The training will be conducted as and when required.

### **2.6 Process for Monitoring**

Compliance with the requirements of this scope of work shall be audited by the Quality assurance and Projects & Contract Management departments at least annually, as part of an internal review process.

### **2.7 Related/Supporting Documents**

Not applicable

## **3. Works information**

### **3.1 Employer's requirements for the service**

The successful *Contractor* will be responsible for the implementation of Occupational Hygiene Survey and Program at Medupi Power Station as referenced in requirements below:

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- a) A walkthrough Risk Assessment should be conducted to identify all the stressors and adhoc services
- b) Use of Calibrated instruments
- c) An Assistant can perform the surveys under supervision by Occupational Hygiene Technologist and/or Occupational Hygienist for Risk assessment and the Regulated stressors surveys (Proof of registration with SAIOH required)
- d) Use of internationally accepted methods of measurement
- e) Good reference sources (Previous performed work)
- f) Department of Employment and Labour and SANAS approved.

### **3.2 Reporting and Training**

- a) Submit report of conducted surveys
- b) Proof of training materials, attendance registers and calibration certificates.
- c) Conduct Occupational Hygiene awareness in all survey conducted and target group will be the exposed employees.
- d) Cost for the awareness will be per person attending the training

### **3.3 General information regarding health and safety**

The following outlines the general requirements for health and safety and details the Client's commitment to the health and safety of all persons involved in its business process activities.

- a) The Contractor must be fully committed to health and safety on the project and to the creation of an injury free working environment.
- b) Safe working is integrated into every aspect and area of our business and will never be compromised by concern for other deliverables or set targets.
- c) The Contractor must consider the Client's level of commitment to occupational health and safety during tendering and contractor discussions. No deviation from the highest level of safety standards and safe working practices will be tolerated.

### **3.4 Eskom SHEQ Policy and Life Saving Rules**

#### **3.4.1 SHEQ Policy**

ESKOM is fully committed to protecting the health and safety of employees, contractors, visitors and members of the public. Occupational health and safety is a core value in ESKOM and the belief is that all unsafe acts and incidents are preventable and this belief guides our approach to safety across our business activities.

The Eskom Safety, Health, Environment and Quality policy is available from the Medupi Occupational Hygiene and Safety (OHS) Department.

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### 3.4.2 Eskom Life Saving Rules

There are 5 lifesaving rules that have been identified by Eskom Holdings SOC Ltd. Failure to adhere to these rules by any ESKOM employee or employee of any Principal Contractor or Contractor will be considered a serious transgression. The rules were developed because they are the most prominent causes of serious injuries and fatalities within Eskom, and Eskom's intention to enforce "ZERO TOLERANCE" with respect to non-adherence to these rules, due to the potential consequences of serious injury or fatality at the workplace.

**Lifesaving rules:**

Rule 1: Open, Isolate, Test, Earth, Bond, and/or Insulate Before Touch

Rule 2: Hook Up at Heights

Rule 3: Buckle Up

Rule 4: Be Sober

Rule 5: Ensure That You Have a Permit to Work

The Medupi management Team in exercising leadership and commitment to occupational health and safety adopted the Eskom SHEQ Policy and Compliance to the Lifesaving rules is non-negotiable and the following is our commitment:

- a) Medupi Management team take a stance of zero tolerance on violation of these rules.
- b) Non-compliance to a lifesaving rule will be considered a serious misconduct and will lead to serious disciplinary action, which may include permanent access restriction to Eskom's contractor site.
- c) This is to ensure that every person who works on or visits Medupi Power Station returns home safely to his or her family.

## 4. Acceptance

This document has been seen and accepted by:

Name	Designation
Lesley Baloyi	Acting Risk Management Manager
Tendani Mukhuba	Occupational Health and Safety Manager
Ndivhuwo Tshifura	Quality and Assurance Manager
Mokgadi Dikgale	Environmental Management Manager

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## **5. Revisions**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
March 2018	0	M. Tladi	New document
April 2022	1	K Nkgoatau	Include training and OHS Awareness, update legislation and standards
July 2022	2	K Nkgoatau	Change the term from 36 months to 60 months

## **6. Development Team**

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

Tendani Mukhuba

Mapitsi Tladi

## **7. Acknowledgements**

Constance Sekhuto

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