

	<b>Specification</b>	<b>Kusile Power Station</b>
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**Title: Kusile Power Station Heating Ventilation  
Air-Conditioning and Refrigeration  
Maintenance Scope of Work**

**Document Identifier: 240-105654456**

**Alternative Reference Number: 414-44-EM-SP**

**Area of Applicability: Kusile Power Station**

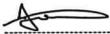
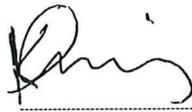
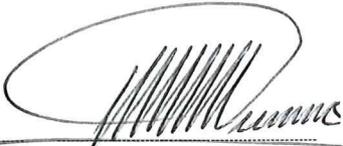
**Functional Area: Electrical Maintenance  
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**Revision: 7**

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Compiled by	Supported by	Functional Responsibility	Authorized by
			
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<b>Date: 04/09/2025</b>	<b>Date: 04/09/2025</b>	<b>Date: 08/09/2025</b>	<b>Date: 2025-09-25</b>

## **1. Introduction**

Kusile Power Station management has decided to establish a partnership with a suitably qualified, experienced and well-established contractor to perform maintenance on the HVAC and Refrigeration system. This document describes the details of the requirements, standards, scope of work and the terms and conditions of the maintenance partnership.

## **2. Supporting Clauses**

### **2.1 Scope**

#### **2.1.1 Purpose**

The purpose of this document is to define the full scope of work specified for the HVAC and Refrigeration system maintenance activities, and functional requirements for Kusile Power Station.

The station is expected to perform at 92% UCF, 6% PCLF and 2% UCLF. The specified HVAC maintenance must support this requirement.

It is therefore imperative that the successful and suitably qualified partner aligns his/her organisation fully to these specified scope activities and processes laid down in this document.

#### **2.1.2 Applicability**

This document is applicable to Kusile Power Station.

#### **2.1.3 Effective date**

This document is effective from the date of authorisation until its succeeding document has been authorised.

### **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] ISO 14001: Environmental management System
- [3] Act No 73 of 1989: The Environment Conservation Act No 107 of 1998: National
- [4] Act No. 107 of 1998: National Environmental Management Act, 1998
- [5] Act No 14 of 2009: The National Environmental Act, 1989
- [6] Act No 102 of 1980: National Key Points Act, 1980

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[17] 240-56179027 Safety Measures & Approved Personal Protective Equipment

[18] 240-70044736 Arc Flash Protective Clothing and Personal Protective Equipment against the Thermal Hazard of an Electrical Arc Specification

[19] ESKSCAAB8: Specification for corrosion protection for mechanical items of plant

[20] 240-56227516 LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and including 1000V AC and 1500V DC Standard ESKSCAA04: Standard for electronic protection and fault monitoring equipment for power systems

## 2.3 Definitions

**2.3.1 Availability:** Period when a system is operating satisfactory when used under specified conditions.

**2.3.2 Contractor:** Service provider contracted to provide a specific service to Eskom, Kusile Power Station.

**2.3.3 Employer:** Eskom, or Eskom Kusile Power Station or representative.

## 2.4 Abbreviations

Abbreviation	Explanation
AHU:	Air handling Units
AP:	Appointed Person
BOM:	Bills of Material
BMS:	Building Management System
BU:	Business Unit
HVAC:	Heating Ventilation and Air-Conditioning
NEC:	New Engineering Contract
OEM:	Original Equipment Manufacturer
OHS Act:	Occupational Health and Safety Act
PCLF:	Planned Capability Loss Factor
PPE:	Personal Protective Equipment
PM:	Plant Maintenance
PSR:	Plant Safety Regulations

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- iii. NEC contract management
- iv. Quality Management Control and Assurance procedures
- v. Plant Safety Regulation authorisation
- vi. Spares optimisation
- vii. Plant optimisation and commissioning
- viii. Procedure writing
- ix. BOM compilation
- d) Staff must meet minimum requirements of Eskom job descriptions, with additional requirements specified.
- e) All staff brought onto site in connection with this SOW should be able to fluently speak, understand and write in English.
- f) Proof of qualification is to be supplied on request by the Employer.
- g) The Contractor ensures that all staff being brought to Kusile PS site has a valid fitness for duty certificate based on the specified plant man-job specification.
- h) The Contractor shall employ in and about the execution of the works only such persons that are careful, competent and efficient in their several trades and callings and the Employer shall be at liberty to object to and require the Contractor to remove from the works forthwith any person employed by the Contractor in or about the execution of the works who, in the opinion of the Employer, misconduct's himself/herself or is incompetent or negligent in the proper performance of his/her duties and such person shall not be again employed for the works without the written permission of the Employer.
- i) Provide daily supervision of all related plant through trained and competent personnel to ensure that inspections & work activities are conducted daily.
- j) Ensures proper behaviour of personnel under his/her supervision as per the Kusile culture.
- k) Ensures training of all personnel under his/her supervision. The training required will include but not limited to Eskom safety training requirements, related plant training and Kusile culture.
- l) Ensures high morale of staff and competency.
- m) Ensures that throughout the duration of the contract, they conform and adhere to the safety, health and environment regulations as stipulated in the Kusile Maintenance URS.
- n) A comprehensive risk assessment shall be done prior to any work being carried out
- o) If a Permit to Work is required for working on plant and/or equipment, on completion of the work the relevant piece of plant/equipment shall be properly re-commissioned prior to the clearance of the Permit to Work.
- p) The Contractor shall be responsible or held liable for any defects arising from maintenance/operational faults within twenty-four hours (24 hrs.) after an intervention, provided that the equipment has been placed into service.
- q) The contractor shall be held responsible or held liable for any defects arising from poor workmanship performed by their staff or use of inferior spare parts. The contractor shall be required to correct any defect that might arise as a result of poor workmanship within 72 Hours.

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Station Services Building
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Aux Sub A
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Aux Sub B
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Sub West
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Sub East
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Compressor West
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Compressor East
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Water Treatment Plant Substation
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Water Treatment plant Building
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Water Treatment Plant Lab
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Waste Water Treatment Plant
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Fire Water Pump Building
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CPP Buildings U 1 – U6
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Coal Stockyard Office Building
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Workshop and Stores
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Access Control Building
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Administration Building
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Canteen Building
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Fire Station
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Medical Centre
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Ash Dump Workshops
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ACC Substations U1 – U6
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Turbine Hall Ventilation Fans including all levels
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West Compressor Building
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East Compressor Building
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- iv. Fan coil air handling units and filters.
- v. Motor control centres.
- vi. Network control Panel.
- vii. Motors.
- viii. Cables.
- ix. Air ducts.
- x. Electrical heaters.
- xi. Motorised control valves.
- xii. Steam humidifiers.
- xiii. Dust collectors and associated equipment.
- xiv. Air extraction systems.
- xv. Air ventilation systems.
- xvi. Measurement equipment (temp, pressure flows, etc.).
- xvii. Room types split air conditioning units.
- xviii. Cold and freezer rooms.
- xix. Electrical and control panels.
- xx. BMS system maintenance.
- xxi. Commissioning of HVAC systems after outages.
- xxii. Perform statutory tests.
- xxiii. Filter maintenance and washing.
- xxiv. Implement filter care programme to monitor filter movement and filter condition.
- xxv. Provide input on design proposal pertaining to air conditioning, ventilations and refrigerant plant including ducts as and when required.
- xxvi. Check drawing for correctness.
- xxvii. Replace major equipment such as compressor units as and when required.
- xxviii. Lubricant replacement on compressors.
- xxix. Replacement and/ or installation of domestic type air conditioners.
- xxx. Attend to breakdowns, defects and carry out fault finding and repairs.

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- o) The contractor must ensure before any work is carried out, the correct equipment and hand tools are available to his staff and that it is in a good and safe working condition and complying with all OHSA requirements.
- p) The contractor must provide proof that toolbox talks have been held and a workers register must always be available and kept on date and reported to the Employer on a required basis.
- q) The contractor must ensure that on a daily basis the agreed safety and housekeeping are upheld and that it is reported to the Employer on a required basis.
- r) The contractor must assist the Security Department by providing a name list and copies of identity documents for all the workers at least one day before site establishment.

### **3.5 Standby services**

- a) The Contractor shall ensure that staff with adequate expertise is available to manage plant issues on a 24-hour standby service.
- b) The Contractor's response time to a callout shall be one hour from the time the person on standby is officially notified until the time that person arrives on site.
- c) The Contractor's 'Technical Support Service' staff shall be available as advisory back-up to assist on instances where the staff on site is struggling to solve any technical problem.
- d) The contractor must have the ability to contract technical support to site as and when required from the following OEMs for special and routine maintenance activities:
  - I. Distech
  - II. Satchtech / John Thompson
  - III. Trane

### **3.6 Conditions**

- a) Please note that the equipment will only form part of the works once the respective area has been commissioned. The Contractor shall have to be involved in the erection, installation, commissioning, handover and maintenance activities related to HVAC equipment and plant if and when required.
- b) The contractor shall carry out the work in accordance with the works order papers supplied to him and returns all necessary documents duly completed for entry into SAP PM Module for plant history.
- c) All stand-alone reports on the work done, tests performed, or modifications carried out shall be submitted to the contract supervisor not later than 7 days after completion of the work.
- d) The contractor shall be responsible for assisting the employer in the development of the preventative maintenance program. Such assistance will include the development of work instructions, maintenance frequencies and monitoring and inspection requirements.
- e) Maintenance procedures must be consistent with best practices and must be available in an accessible format on-site for and stored in SAP PM.
- f) The contractor will be responsible for reviewing equipment requirement, leakage and spillage control on all responsible plant areas.
- g) The contractor is to complement their services to improve Plant performance by:

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- b) The Contractor to be represented at any ad-hoc meetings that may arise in order to address any production or safety related matters.
- c) Liaison meetings shall be held between the Employer's representative or his/her delegate and the Contractor's representative or his/her delegate on a monthly basis or when necessary to discuss any technical details, or concerns.
- d) The Contractor will be responsible for implementing an employee performance management system that is consistent with the Employer's management requirements

### **3.9 Quality and Documentation Control**

- a) The contractor shall submit a QCP which will be overseen by Eskom and will ensure that the relevant documentation is available on site to manage the scope and related programs.
- b) The Contractor shall ensure that all measuring and test equipment is calibrated at all times & proof thereof must be readily available.
- c) The Contractor shall adhere to all 'Quality References' and 'Standards' applicable to this SOW.
- d) The Contractor shall utilise the Employer's quality documentation management system and processes.

### **3.10 Works Implementation**

The Contractor shall supply a work implementation plan including at least the following;

- a) Site establishment.
- b) Manpower plan.
- c) Organogram.
- d) Skills required and associated cost per skill (e.g. artisan, site manager, etc.)

### **3.11 General**

- a) The contractor shall carry out all plant activities as per the Works Management Process.
- b) The contractor shall ensure that the work area is kept clean on completion of any work done.
- c) The contractor shall execute the works within the times stipulated on the works order.
- d) The employer is to schedule all maintenance tasks.
- e) The contractor shall ensure that any witness, hold points are strictly adhered to.
- f) Before work starts on site, an inaugural meeting is held with the contractor and the employer, to explain in detail all the requirements of the site regulations.
- g) The contractor will be issued with a file of current site regulations on arrival. The file remains the property of the employer.
- h) The Employer and Contractor in this SOW shall commit towards the following:
  - i. Retention of critical skills
  - ii. Continuous cost reduction
  - iii. Safety, Health & Environment
  - iv. Transfer of Operational experience and skills

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- vi. Contractor contact details
- vii. Contract Date
- b) Where appropriate the correspondence includes the Employer's reference and is delivered as a single package.
- c) All communications from the Contractor are numbered sequentially with a prefix as advised by the Employer. The Employer responds in like manner. The prefix and numbering system is decided upon at the Inaugural meeting.

### **3.13 Contractor's organisation**

The Contractor shall submit a Contractor's organogram to the employer for acceptance, indicating the contractor's and the sub-contractor's employees

### **3.14 Tender requirements**

- a) A proposal is to be submitted by the tenderer for the above-mentioned scope of work.
- b) Hereafter a contract shall be negotiated with the successful Contractor.
- c) The appointment of a Contractor is at Eskom's (The Employer) sole discretion taking into account the factors which Eskom considers relevant.
- d) The Employer shall perform evaluation based on the criteria of commercial, financial and technical evaluation as per specific applicable enquiry document.
- e) The tender prices shall be completed as per the pricing structure.

## **4. Acceptance**

This document has been seen and accepted by:

<b>Name</b>	<b>Designation</b>
Bongekile Makini	Electrical Maintenance Manager
Kunaal Dharamraj	System Engineer - HVAC
Nhlanhla Rikhotso	Senior Engineer Auxiliary Plant
Abel Vuma	Maintenance Manager

## **5. Revisions**

<b>Date</b>	<b>Rev.</b>	<b>Compiler</b>	<b>Remarks</b>
September 2025	7	S Jonase	Scope revised due to plant requirements
May 2024	6	N Ngwenya	The scope is due for revision
April 2021	5	N Rikhotso	Additional scope incorporated
May 2020	4	D Mothabela	The scope is due for revision

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