

	<p align="center">Scope Of Work</p>	<p align="center">Generation</p>
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Title: **The Provision of maintenance (Preventative & corrective, removal, installation and repairs), continuous operating and monitoring of all heating, ventilation and air conditioning (HVAC) systems (including filter maintenance and pressurizing fans) at Kriel Power Station for a period of five (5) years**

Unique Identifier: **MTS0055**

Alternative Reference Number: **N/A**

Area of Applicability: **Maintenance**

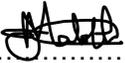
Documentation Type: **Scope of Work**

Revision: **1**

Total Pages: **30**

Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

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CONTENTS

	Page
1. INTRODUCTION	3
2. SCOPE OF WORK / SPECIFICATION	3
2.1.1 Work to be performed by <i>the Contractor</i> for the works	3
2.2 EMPLOYERS OBJECTIVES AND PURPOSE OF THE SERVICE	7
2.2.1 Employers requirements for the service	8
2.2.2 Applicability	13
2.2.3 informative	13
2.3 DEFINITIONS	13
2.3.1 Disclosure Classification	13
2.4 ABBREVIATIONS	13
2.5 ROLES AND RESPONSIBILITIES	14
2.6 PROCESS FOR MONITORING	14
2.6.1 Documentation Submission And Recording	15
2.6.2 Plant Codification	15
3. AUTHORISATION	15
4. REVISIONS	15
5. DEVELOPMENT TEAM	15
6. ACKNOWLEDGEMENT	15
7. ANNEXURE A - LIST OF AIR CONDITIONERS	ERROR! BOOKMARK NOT DEFINED.
8. ANNEXURE B - LIST OF SPARES	ERROR! BOOKMARK NOT DEFINED.

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1. INTRODUCTION

The contract is for the Provision of maintenance (Preventative & corrective, removal, installation and repairs), continuous operating and monitoring of all heating, ventilation and air conditioning (HVAC) systems (including filter maintenance and pressurizing fans) at Kriel Power Station for a period of five (5) years

The contractor provides qualified and competent personnel to perform preventative maintenance (PM), corrective maintenance (CM), and continuous operating and monitoring of all employers heating, ventilation and air conditioning (HVAC) systems at Kriel Power Station and immediate surroundings and Kriel outside plants

The contractor shall be based on-site and report for duty during employers normal working hours.

In addition, the contractor provides a standby service after hours with weekends and holidays included.

The contractor ensures that the number of personnel provided is sufficient and able to manage all works on-site to the employer's satisfaction.

This will include adequate management and supervision, along with suitable qualified technicians, artisans and lower task level employees for work such as filter cleaning.

Kriel Power Station has a large, established site with HVAC equipment comprising of production related plant and non-production plant and equipment.

2. SCOPE OF WORK / SPECIFICATION

2.1.1 WORK TO BE PERFORMED BY *THE CONTRACTOR* FOR THE *WORKS*

The table below is a comprehensive list of the employer's plant and equipment for the contractor information so that the extent of the scope of work is understood. The employer amends the list as and when necessary as well as when new installations occur, and the contractor provides the service to all HVAC plant which the employer requires. The installation, repair, and replacement of split units in offices and buildings are the contractor's responsibility. The plant includes Kriel power station and its extended buildings (outside plant and dams). This includes all pressurisation fans in Kriel Power Station

The work scope: **The Provision of maintenance (Preventative & corrective, removal, installation and repairs), continuous operating and monitoring of all heating, ventilation and air conditioning (HVAC) systems (including filter maintenance and pressurizing fans) at Kriel Power Station for a period of five (5) years**

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Resource Requirements

Item No.:	Description	Experience Required
2.1	1 X Site Supervisor	5 years' experience; qualified & registered aircon tech
2.2	Safety Officer	1 years related experience; Matric; Samtrac
2.3	3 X Artisans (Aircon Trade Test)	2 years related experience; qualified aircon technician/artisan (trade test)
2.4	3 X Semiskilled Electrician	2 years related experience;
2.5	1 X Assistant Electrician	

List of airconditioners**All aircons that are working around the station**

Aircon name and plant	Quantity
Control unit 1	3
Old PTM offices	9
C&I workshop	5
Server Room	7
Old Control room	3
OPS support	7
Unit 4 C&I	7
Boiler Engineering	15
Unit 5 simulator	2
Unit 5 control room	2
Sootblowers	4
OPS training UP	16
Mill squad	7
Dry dust	3
Outside plant	8
Coal plant	2

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Main silo	1
civil	3
Transport & Procurement	18
MMD Offices	10
stores	11
Plattershop	5
Rigger's workshop	6
Security	13
EMD Offices	13
Maintenance training	13
Coal Lab	3
Waterplant	14
Auxillary plant	4
Cabin	1
Medical centre	6
Engineering building	21
rotho	2
outage	26
Main building	66
IT	5
EPC Centre	5
Auditorium	3
Canteen	7
Soweto Buildings	76
Total:	445

Aircons using R22 gas

Aircon name and plant	Quantity
Performance & Testing	16
Old PTM office	2
Ops support unit 4	2
Ops training up	7
Mill squad	2
Dry dust	2

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Outside plant	3
QS	6
Transport & Buying	8
MMD offices	1
Stores	4
Riggers Workshop	2
Security gate	1
Security main gate	9
EMD offices	2
Maintenance training centre	1
Auxillary plant	1
Medical Centre	2
Engineering	6
outage	12
Main building	31
IT	3
EPC Centre	5
Auditorium	2
Canteen	7
Soweto	45
AVR	
Equipment Room	13
Precipitator	2
UPS ROOM	5
Total:	182

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2.2 Employers objectives and purpose of the service

Note:

The *Contractor* must be authorized in terms of Plant Safety Regulations (PSR) (Low Voltage) to be able to perform the following activities covered in the scope of work, failing which a 10% penalty will be deducted on a monthly gross labour charge effective after 6 months when the contract is in place/signed.

This service shall include all outage work, routine maintenance, repairs, inspections & cleaning, support services, emergency breakdown services, statutory inspections and defect correction during normal and abnormal condition or operation, to ensure the integrity of the installed ventilation and air conditioning systems at Kriel Power Station.

The *Contractor* shall through execution of the services ensure that all systems are safe and operational. These will include but not limited to all systems and its sub system components.

Kriel Power Station operates on a 24-hour basis, 7 days a week

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2.2.1 EMPLOYERS REQUIREMENTS FOR THE SERVICE

- 2.2.1.1 The contractor ensures that relevant personnel are authorized as authorized refrigeration practitioners, in terms of the OHS act; pressure equipment regulations. If these personnel are not authorized at the start of the contract, then the authorization must be achieved within 6 (six) months of the contract start date
- 2.2.1.2 The contractor is solely responsible for the operation of the HVAC systems and that ensures that it works optimally and as per employers' requirements.
- 2.2.1.3 The contractor maintains repairs and replaces all plant components which form part of the HVAC system (plant spares are free issue), as and when necessary, including associated motors, compressors, fans and control circuitry (i.e., All electrical, mechanical and control and instrumentation maintenance).
- 2.2.1.4 The contractor provides the service in accordance with the original equipment manufacturers (OEM) specifications and any additional standards which the employer stipulates.
- 2.2.1.5 The contractor provides the service as per Eskom Works Management principles and the employers approved maintenance strategies. This includes to and use of the employers computer systems. The contractor provides additional inputs where necessary to improve the strategies, processes and procedures.
- 2.2.1.6 The R22, also called HCFC-22, is a banned substance in most of the developed world due to its ozone depleting potential (ODP) + classified as a greenhouse gas (GHG) which contributes to climate change – to be totally banned in South Africa by 2030, therefore replacement of units shall not be of R22 gas according to law
- 2.2.1.7 The contractor performs the service to the employers' requirements and the contractors performance is measured, on a monthly basis using work week management key performance indicators (KPI's) as indicated below. The contractor's performance is measured according to the kpi's and the level of performance required is given. Poor performance will be measured according to the service level table and applicable damages are paid by the contractor. The contractor does not receive a performance bonus

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- 2.2.1.8 The contractor is present and available on-site during the employers' working hours and suitable personnel perform standby as per an approved roster and report to site within 60 (Sixty) minutes of a call out as and when required.
- 2.2.1.9 The contractor attends to plant breakdowns immediately and until these are fully rectified and completed, unless the employer instructs otherwise, and both the contractor and employer are in agreement that the work may be re-planned for a later completion.
- 2.2.1.10 The contractor attends to complaints from clients regarding air-conditioning problems and keeps the clients informed of progress and completion.
- 2.2.1.11 The contractor provides all the necessary tools and equipment to provide the service. This includes all hand tools such as spanners, screw drivers, pliers and electrical / electronic and measuring tools / instruments including drilling machines drilling machines flukes and meggers and any additional tools we will need them to have their own welding power pack, plus bottles. Step ladders etc.
- 2.2.1.12 The contractor cleans and removes any spares, used parts, materials and debris, dust and rubble arising from work done in order to ensure that the employers' premises are left in a clean condition afterward. Waste disposal is done in accordance with the employer's site regulations.
- 2.2.1.13 The contractor conducts a monthly inspection of the plant before the end of each month, and provides a detailed, written report within 3 (three) working days thereafter.
- 2.2.1.14 The contractor ensures that supervisors, technicians, and artisans each become authorised as a responsible person (RP), in order to fulfill the employer's safety requirements for permit to work applications on HVAC plant and also safely isolating the plant. The contractor utilizes the employers computerized system for this purpose unless such system is off-line. The permitry requirements is as per the employers plant safety regulations procedure 36-687 and authorization of the contractor personnel is required within 6 (six) months of the contract start date.
- 2.2.1.15 The contractor provides cell phones and radio communication for all employees to enable prompt communication with the employer and workers without any delay.

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2.2.1.16 The employer provides all replacement plant components and spares for servicing and repairs, however the contractor is responsible to inform the employer of spares requirements (provides specifications and quantities for the employers stock holding requirements).

2.2.1.17 The Contractor ensures that there is a vehicle available for the employees to use during working hours for transportation of tools and equipment as well as for use during standby periods

2.2.1.18 The Contractor conforms to all prevailing legal requirements of the republic of South Africa, Eskom SOC Limited and Kriel Power Station Site legal Requirements, with special reference but not limited to the following:.

Number	Title	Year / revision
BIA/QA/STD/01	MPs Quality Requirements	2009 Rev 0
SERV/FIRE02	MPs Hot Work Procedure	2005 Rev 0
	Criteria For Approval Of Rigging Work	
	Working At Heights	
32-421	Life Saving Rules	2010 Rev 0
36-681	Plant Safety Regulations	2012 Rev 0
	Occupational Health And Safety Act 85 Of 1993	
SANS 10400	National Building regulations	
GGPP0592	Generation Policy: Power Station Plant Classification	
OPG 0159-02	Eskom manual: Classification Guideline.	
	Compensation for Occupational Injuries and Diseases Act 130 of 1993 as amended	
	National Environmental Management Act 107 of 1998 as amended	
	National Environmental Waste Act 59 of 2008 as amended	
	National Water Act 36 of 1998 as amended	
004 4830	Eskom procedures and Safety requirements set out in Safety, Health and environmental specifications	
32-95	Eskom procedures 32-95 with regards to the management of safety, health and environmental incidents	

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Any other act or procedure deemed necessary or applicable if the work includes some toxic and/or hazardous substances during normal and routine maintenance activities stipulated in this document. In this case the Contractor handles such hazardous substances in accordance with the applicable regulations and procedures and is disposed of by the Contractor in accordance with the applicable law.

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The contractor ensures that the number of personnel provided is sufficient and able to manage all works on-site to the employer's satisfaction.

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Kriel Power Station has a large, established site with HVAC equipment comprising of production related plant and non-production plant and equipment.

All plant and equipment have been maintained as part of a maintenance contract previously. In general, the plant comprises of items as indicated in 2.1.1 and the contractor shall perform the below scope:

- Installs, adjusts, inspects, services and repairs a variety of mechanical equipment and mechanical parts of electrical machinery utilized in the HVAC System
- Makes repairs and maintenance on chiller plant, condensers, compressors, centrifugal pumps and pump bearings.

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- Develops implements and maintains an effective program of equipment and outage maintenance work; performs equipment inspections to ensure that the equipment is safely maintained and operable; performs related testing and repair as needed.
- Tests and maintains heating, ventilating and air conditioning such as compressors, condensers, pumps, control systems, fans humidifiers, chillers and heat exchangers.
- Installs, repairs and maintain domestic air-cons
- Supervises a program of preventive maintenance of the electrical and/or mechanical equipment, structures and building of power station operation; makes regular inspections and tests of facilities to determine the overall condition of the plant
- Ensures availability of parts and supplies, by assessing jobs and determining parts that are needed for the job.
- Performing all maintenance, repairs activities related to these systems
- Provide support during operation of these systems
- Fixing of leaks during running conditions

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2.2.2 APPLICABILITY

This document is applicable to Kriel Power Station

2.2.3 INFORMATIVE

Not applicable.

2.3 DEFINITIONS

2.3.1 DISCLOSURE CLASSIFICATION

Controlled Disclosure: Controlled Disclosure to external parties (either enforced by law, or discretionary)

2.4 ABBREVIATIONS

Abbreviations	Description
AKZ	Anlagen Kenn Zeichnungs
BOQ	Bill of Quantities
C&I	Control and Instrumentation
CAD	Computer Aided Design
CoE	Centre of Excellence
PTM	Protection, Testing and Metering
EMD	Electrical Maintenance Department
HAZOP	Hazard and Operability Analysis
NDT	Non-Destructive Testing
OHSA	Occupational Health and Safety Act
PEIC	Production Engineering Integration Coal
PPE	Personal Protective Equipment
PTW	Permit To Work

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QA	Quality Assurance
QC	Quality Control
QCP	Quality control program/plan/procedure
QCP	Quality Control Procedure
RO	Reverse Osmosis
SHE	Safety, Health & Environmental
SHEQ	Occupational Safety, Health, Environmental, and Quality
SOW	Scope of Work
Unit	Description
AVR	Automatic Voltage Regulator
AC	Alternative Current
Kv	Kilovolts
HVAC	Heating Ventilation and Air Conditioning

2.5 ROLES AND RESPONSIBILITIES

Roles and responsibilities are as follows:

Senior Advisor – Compile the scope of work for the contract

2.6 PROCESS FOR MONITORING

The QCPs on incoming product and services rendered by the supplier will be done and all materials are to be signed off by the system engineer and hold/witness points should be marked to ensure the quality of the supplied goods is according to standard.

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2.6.1 DOCUMENTATION SUBMISSION AND RECORDING

The supplier is to provide the following documentation.

- Medical and induction certificates
- Safety file
- Quality Control Process files (for quality assurance)

2.6.2 PLANT CODIFICATION

Kriel Power Station uses the AKZ numbering system.

3. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
Kgosi Ntsheroa	Electrical Maintenance Department Manager
Evah Malofha	Senior Advisor Technical Support
Alex Nkadimeng	Electrical Senior Technician

4. REVISIONS

Date	Rev.	Compiler	Remarks
March 2018	0	E Malofha	Document compilation
March 2019	1	E Malofha	First revision, removed spares
June 2023	2	E Malofha	Rev 2

5. DEVELOPMENT TEAM

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

- Evah Malofha
- Alex Nkadimeng

6. ACKNOWLEDGEMENT

- None

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