

	SCOPE REQUIREMENTS TEMPLATE	Scope
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1. INTRODUCTION

This document relates the user requirements for the provision of diesel generator, UPS maintenance service and diesel supply with Gauteng Cluster.

2. SCOPE

2.1 PURPOSE

The purpose of the document is to record the scope requirements for the provision of diesel generator, UPS maintenance service and supply of diesel within Gauteng Cluster, as and when required basis.

The scope of work includes:

- Execution of planned, unplanned and emergency maintenance of diesel generator, UPS, and supply diesel with Gauteng Cluster, as and when required basis
- Provision of maintenance service record (includes inspections/ test results, etc) as and when required.
- Execution of maintenance scope/ service must comply with all Engineering Standards, Health and Safety Regulation, as and when required basis
- Provision of compliance documents on all infrastructure as and when required basis
- Provision of on-site supervision for emergency works as and when required.
- Provision of all consumables and materials for maintenance, as and when require basis.
- The Supplier must ensure that provision of maintenance service is in compliance with engineering standards and safety requirements

2.2 APPLICABILITY

This document is applicable to the works/ service related to the provision of diesel supply and generator and UPS maintenance service at Gauteng Cluster.

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2.3 SCOPE REQUIREMENT

Diesel Generator & Storage Tanks

Inspection and minor service

- Check fan belt condition and tension
- Check that radiator passages are clean and fit for operation
- Check that radiator hoses and clamps for wear and tear
- Add water conditioner
- Drain radiator/system and refill
- Drain oil and refill
- Change fuel filters
- Change oil filters
- Change water conditioner filters
- Change air filters
- Check seal faces of elements, air cleaner, hoses and clamps for dust ingress
- Check thermos heater operation and temperature
- Check all guards in position and secure
- Check battery charger
- Check batteries, lugs, clean and tighten
- Battery test:
 - a. Check hydrometer
 - b. Check casing condition
 - c. Check terminals
 - d. Note Volts
 - e. Note Amps
 - f. Compile battery report
- Start engine
- Check for any leaks
- Check charge alternator operation
- Take oil pressure gauge reading
- Take engine temperature gauge reading
- Check low radiator level
- Check low fuel level
- When engine has stopped, top up with oil
- Check alternator coupling
- Check air vents on alternator
- Check fuel system
- Drain water trap
- Check all pipes and fittings
- Check exhaust, manifold, silencer and pipes
- Check base and anti-vibration mounts
- Run plant on load
- Clean plant and equipment

Annual service

The annual service includes all the items listed in above for the bi-annual inspection and service in addition to the following items:

- Drain radiator

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- Refill with new water conditioner
- Drain oil
- Supply and fit new oil filters
- Refill with new oil
- Remove and replace fuel filters
- Remove and replace air filter
- Run the set up to temperature and top up all levels afterwards
- Check entire panel operation
- Fuel system
- Air intake system
- DC electrical system
- Engine
- Lubrication service
- Cooling system service
- Air intake service
- Servicing and testing Starting batteries
- Cleaning batteries
- Checking specific gravity
- Checking electrolyte level
- Checking dampers bi-annually

DIESEL STORAGE

Annual Service Pressure tanks

- Pressure test of diesel tank.
- Test for loss and leaks including a written report

Service Diesel tank & Diesel fuel testing

- Visual inspection of the fuel system.
- Checking the filters, tanks, fillers and site tubes.

Bi-annual Service Bioscience test

- Bioscience Fuel-stat test and written report.

Annual Service Filtration & Additives

- The diesel in both tanks will be filtered and polished if no filtration system is installed including additives added.
- The "Fuel Right" method to be utilised

Service Fuel supply

- Supply of 50ppm diesel to fill up tank.
- Proof of purchase to be submitted. Mark-up % to be added to cost of fuel

Service Hot water storage tank

- Hot water storage tank shall be thoroughly inspected and monitored during the summer period for any signs of leaks.
- Repairs and/or recoating of the hot water storage tank shall be carried out during summer period.

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Electrical and UPS System

Service

- The checking of the mechanical soundness of all parts.
- The checking of the semi-conductor power devices, transformers, filter elements and the like
- The checking and, if necessary, adjusting of the voltage of the DC circuitry.
- The checking and, if necessary, adjusting of the output voltage of the AC circuitry.
- The checking and adjusting of all electronic regulating circuits.
- The cleaning of the UPS system
- The checking of the DC caps.
- The checking of the AC filters caps.
- The checking of all Fan operations.
- Visual checking for Hot Spots (Hot Spots are discolouring of power wires and main bus bars)
- The checking of batteries for loose connections, hot spots and terminal corrosion.
- The checking of load currents and voltages.
- The checking of environmental temperature and ensuring that it is within the UPS operational specifications.
- The checking and recording on a log sheet of the voltage of each battery block.
- The cleaning of the batteries.
- Conduct a battery discharge test using the s existing load connected to the Equipment to determine the capacity of the battery.
- The checking of sufficient lighting.
- Should the Technician find any problem during the inspection
- Submit the detailed service report will be handed to site personnel directly after completion of the service
- Where after arrangements to correct these faults can be made

Main and Sub Electrical Distribution Boards All Blocks

Service

- The Contractor shall be responsible for the cleaning, service, maintenance and repairs to all Main and Sub Electrical Distribution Boards and Control Equipment.

Switches, Change-Overs, etc.

Service

- Main incoming supply, main switches, change-over systems, bus bars and the supply up's to each of the local isolators for each individual piece of equipment.

Charger and Batteries

Battery Tripping Unit

Service

- Clean off any acid from battery terminals
- Check water levels on all cells

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- Check all connections
- Check load circuits on battery
- Check supply voltage
- Check battery voltage
- Test all single cell internal battery resistance (Test conducted per battery)
- Test all single cell battery voltage (Test conducted per battery)
- Check all indication functional
- Compile test report according to Charger specifications

Battery Testing Service

- Check hydrometer
- Check casing condition
- Check the water
- Check terminals
- Note Volts
- Note Amps
- Compile battery report
- Checking of input and output terminations
- Installation of batteries in battery cabinets or onto stands.
- Checking of battery connections
- Complete mechanical check of the UPS system.
- Electrical and calibration check of the UPS system
- Testing of all UPS alarm functions including Remote Alarm Panel (RAP) if supplied
- Mains failure test, using existing load, to prove correct operation of UPS system
- Explanation of UPS operation and alarms to customer
- Hand-over acceptances.

Certificate of Compliance

Service

- Issue the certificate of compliance as electrical regulation.

Earthing and Bonding

Service

- Must be done as per earthing and bonding regulation

OTHERS

Other elements of storage tanks and generator systems not detailed in the scope that may be required shall be included in all requirements, on an as and when required basis.

3 NORMATIVE/INFORMATIVE REFERENCES

The following references are included:

3.1 NORMATIVE REFERENCES

- Not Applicable

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INFORMATIVE REFERENCES

- Eskom Real Estate Standards
- Occupational Health and Safety Act 85 of 1993
- Manufacturer Operation and Maintenance Manuals
- National Building Regulations and Building Standards

4 DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Classifications:

Public domain: published in any public forum without constraints (either enforced by law, or discretionary).

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

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.

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

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

ABBREVIATIONS

Abbreviation	Description
GC	Gauteng Cluster
ERE	Eskom Real Estate
Dx	Distribution
URS	User Requirements Specification

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5 PROCESS FOR MONITORING

Document revisions will be marked in ascending numeric order. Final copy approved by Regional Manager to be stored accordingly.

6 RELATED/SUPPORTING DOCUMENTS

Not applicable







7 COST BENCHMARKING

To be confirmed by appointed QS

8 RECORDS

All records to be managed in compliance to the Eskom records management policy.

9 DEVELOPMENT TEAM

Name	Designation	Signature
Mdu Ndawo	Regional Manager	
Phumzile Mlangeni	Facility Manager (Acting)	
Maikaelelo Mabilo	Facility Manager	
Judith Skosana	Snr Technical Supervisor	
Andries Phofane	Technical Supervisor	
Andries Pretorius	Technical Supervisor	

10 ACKNOWLEDGEMENTS

Not applicable

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