	Scope of Work	Eskom Telecomms
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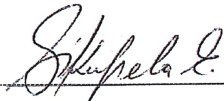

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1. Introduction

The Network Management Centre (NMC) is the entity in Eskom that is used for the monitoring and control of the Eskom Telecommunications (ET) network. The NMC houses the main Data Centre (production site), with the server room that hosts the various applications and Operational Technology (OT) systems that operate through the Eskom Telecommunications (ET) Network.

The Data Centre (DC) is currently being upgraded through the enquiry CORP 4770. The implication of this is the introduction of new equipment in the server room, which by extension implies that the cooling system and power requirements need to be prepared, to accommodate these. As a result, a need to repair the existing cooling system and Uninterruptable Power Supply (UPS), including the batteries if applicable, has been identified.

2. Supporting Clauses

2.1 Scope

The purpose of this document is to specify the scope for the repairs of the UPS, and cooling systems' equipment and associated hardware, installed at NMC Matumi Building server room. This document will be used to guide the supplier's expectations with respect to the scope requirements for repairs to the systems.

2.1.1 Purpose

2.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Divisions.

2.1.3 Effective date

This document is effective from the date of authorization.

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

None

2.2.2 Informative

- [1] ISO 9001 Quality Management Systems
- [2] 240-56360034 Stationary Vented Lead Acid Batteries Standard
- [3] TOPPE-034 Check Sheet for UPS Maintenance
- [4] MGE Upsilon STS Specification
- [5] Symmetra PX Specification

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2.3 Definitions

Definition	Explanation
Cooling System	The device(s) that facilitates the process of conditioning the air of an occupied space in order to maintain a relationship between temperature and humidity.
Uninterruptable Power Supply	An uninterruptible power supply (UPS), also known as a battery backup, provides backup power when your regular power source fails or voltage drops to an unacceptable level.

2.4 Abbreviations

Abbreviation	Explanation
DC	Data Centre
ET	Eskom Telecommunications
ERE	Eskom Real Estate
NMC	Network Management Centre
OEM	Original Equipment Manufacturer
UPS	Uninterruptable Power Supply

2.5 Roles and Responsibilities

The NMC Manager is responsible for ensuring that the repairs of the cooling system and UPS is done in accordance with this scope, and for the signoff of completed work.

Eskom Real Estate (ERE) is responsible for the maintenance and upkeep of these facilities.

2.6 Process for Monitoring

Implementation of the scope will be monitored throughout the repair process.

2.7 Related/Supporting Documents

None

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3. Scope of Work

3.1 Background

The server room is located in the Network Management Centre, Matumi Building in the Simmerpan Complex, Germiston, Johannesburg. This was constructed and populated with networking equipment and appliances in 2012 during the construction of the building. As is the case with all data centres, the server room was fitted with a cooling system and UPS to ensure heat management and humidity control, and to fulfil power requirements of the various networking equipment, respectively. This mission critical facility requires sufficient and reliable cooling and electrical power supply, to avoid any downtime or failures, as a result of overheating and/or increase in load demand of the various equipment that run on a 24/7/365 basis, to monitor the ET network. Over the years, however, the cooling system and UPS have deteriorated and therefore have since been operating without full capacity. In the case of the cooling system, a temporary solution in the form of standalone cooling cubes was implemented to avert the risk resulting from running a DC without sufficient cooling, however, with the incoming new equipment, it is an urgent requirement to have both the original cooling system and the UPS, including the batteries if applicable, operating at full capacity, in order to fulfil the cooling and load requirements of existing and future networking equipment in the server room.

3.2 Faulty Systems

Both the installed cooling system and UPS at the NMC are from the same manufacturer. The original equipment manufacturer (OEM) for these systems is "**APC by Schneider Electric**". The figures 1 and 2 below show partial images of the two systems, as currently installed at the NMC.



Figure 1: Cooling System

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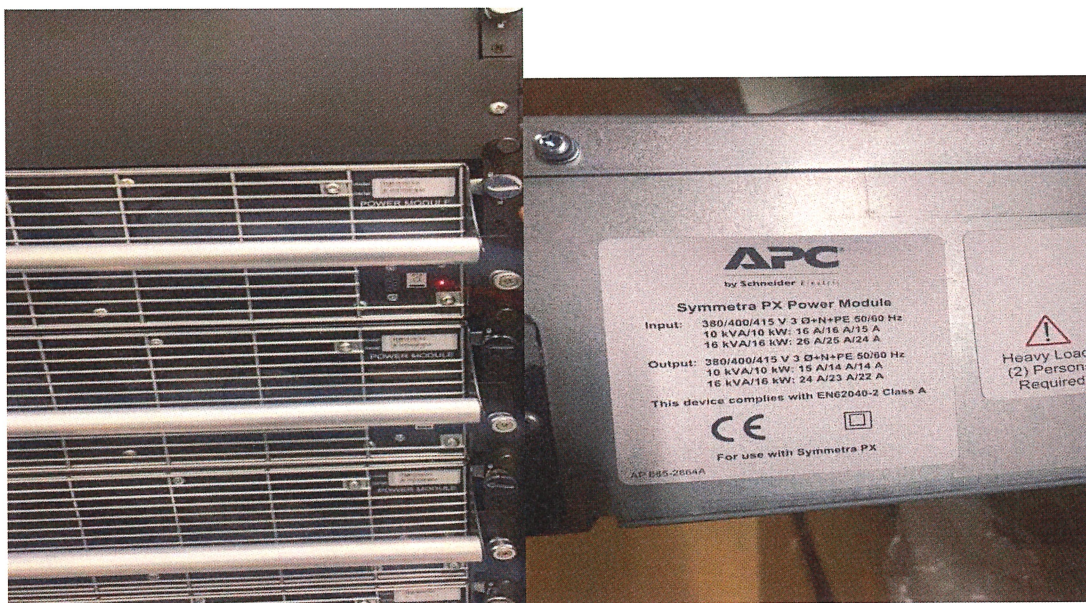


Figure 2: UPS System

3.3 Requirements

ET hereby requests the following **mandatory** scope of works to be performed on the cooling and UPS systems.

1. Supplier to provide a letter of accreditation from the OEM/distributor to certify capability to perform repairs on the "APC by Schneider Electric" cooling and UPS (including batteries if applicable) systems, or similar systems.
2. Conduct a full assessment on the current cooling system and/or UPS (including batteries if applicable) at the Eskom site.
3. Produce a full diagnostic report on the cooling system and/or UPS (including batteries if applicable).
4. Provide a quotation (Bill of Materials) for the repair/replacement of ALL faulty units or components, and associated software if applicable, for the cooling system and/or UPS (including batteries if applicable), with associated labour charges.
5. Offer a warranty with associated service-related charges, including:
 - a. Supplier to provide a standard warranty, valid for a minimum of 12 months, for all works and materials provided (included as part of repair works carried).
 - b. Supplier shall offer extended warranty for all works and materials provided (to be quoted for separately).
 - c. Supplier to provide applicable terms and conditions of both warranties (standard and extended).
 - d. Offer a swop out facility of faulty units during the warranty period within an acceptable turnaround period (please specify period).

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4. Acceptance

This document has been seen and accepted by:

Name	Designation
Joe Manyisa	Manager- Network Management Centre
Bathathu Jonga	Chief Technologist Transmission PTM&C

5. Revisions

Date	Rev.	Compiler	Remarks
February 2022	1	Oscar Ngwenya	New Document

6. Development Team

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

- Oscar Ngwenya
- Herbert Lloyd
- Leonard Moahloli
- Bathathu Jonga

7. Acknowledgements

None

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