Eskom	Scope of work	Engineering

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1. Introduction

Fire detection and protection systems are regarded as level 1 safety system that ensure life and property protection against fire hazards. Kendal Power Station is commissioned with an Aritech and Techno-switch fire detection and protection technologies and their availability and reliability is essential in ensuring compliance to SANS 10139 and other SANS standards.

The main Aritech/Techno-switch fire system monitors over 3200 fire detection points throughout the station and consists of 11 fire panels with 1 global and 1 local repeater. These points consist of Switch Monitors (Water and Air Pressure switches), Zone Monitors (Spindles and Conventional detectors - Optical and Ionization) and Detectors {Addressable Ionization and Optical). The existing fire detection systems include the VESDA (Very Early Smoke Detection Alarm) system, Crowcon Gas Monitoring Unit, Linear Heat Detection System, Optical Beam Detectors and the Infrared Camera System. The fire detection system to be maintained is located at Unit 1 to 6 and Outside Plant.

To sustain the original performance of the fire detection and suppression systems, it is a requirement to develop a comprehensive and executed schedule for maintenance of fire detection and suppression systems that establishes preventative maintenance of the equipment to reduce the probability of breakdown and ensure fire detection and suppression systems are kept in a constant state of readiness.

2. Supporting Clauses

2.1 Scope

The scope of this contract is to provide a five (5) years spares supply supported without service for fire detection and suppression systems at Kendal Power Station to ensure availability, reliability and operational readiness throughout its useful life.

2.1.1 Purpose

The purpose of this document is to outline the list of all spares to be supplied for fire detection and suppression systems contractual requirements as required for maintenance of the system.

2.1.2 Applicability

This document shall apply to all affected parties at Kendal Power Station and the selected supplier. The document is effective from the date of authorisation.

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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] Requirement of Department of Labour – Compliance with OHSA, SAQCC (Fire) registered

[3] SANS 10139: Fire Detection and Alarm Systems for Buildings – System Design, Installation and Servicing.

[4] SANS 10400: National Building Regulations

[5] SANS 246: Code of Practice for Fire Protection for Electronic Equipment Installations

[6] SANS 369-1: Code of Practice for the Operation of Fire Protection Measures – Part 1: Electrical Actuation of Gaseous Total Flooding Extinguishing Systems

[7] NFPA 72: National Fire Alarm and Signalling Code

2.2.2 Informative

[1] 240-56536505- Hazardous location standard

[2] ISO 5725-2:1994 Accuracy (trueness and precision) of measurement methods and results. Basic methods for the determination of repeatability and reproducibility of a standard measurement method

[3] ISO 5725-3:1994 Accuracy (trueness and precision) of measurement methods and results. Intermediate measures of the precision of a standard measurement method

[4] ISO 5725-4:1994 Accuracy (trueness and precision) of measurement methods and results. Basic methods for the determination of the trueness of a standard measurement method

[5] SANS 50054-12 Fire Detection and Fire Alarm Systems – Part 12: Smoke Detectors – Light Detectors using an Optical Beam

[6] SANS 50054-15: Fire Detection and Fire Alarm Systems – Part 15: Multi-sensor Detectors

[7] SANS 50054-20: Fire Detection and Fire Alarm Systems – Part 20: Aspirating Smoke Detectors

[8] SANS 60079-10: Electrical Apparatus for Explosive Gas Atmospheres

[9] SANS 60849: Sound Systems for Emergency Purposes

[10] SANS 10108: The Classification of Hazardous Locations and the Selection of Equipment for Use in Such Locations

[11] SANS 10142: South African Code of Practice for all Low Voltage Wiring within Buildings

[12] NFPA 72: National Fire Alarm and Signalling Code

[13] NFPA: 850 Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations

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2.3 Abbreviations

Table 1: Abbreviation

Abbreviation	Explanation
C&I	Control and Instrumentation
ECM	Engineering Change Management
FDIA	Fire Detection Installers Association
FDS	Fire Detection System
HVAC	Heating, Ventilation and Air Conditioning
LAN	Liquid Crystal Display
LED	Light Emitting Diode
LHDC	Linear heat detection Cable
MCP	Manual Call Point
NFPA	National Fire Protection Association
OEM	Original Equipment Manufacturer
OPCR	Outside Plant Control Room
PM	Preventative Maintenance / Proactive Maintenance
SANS	South African National Standard
SAQCC	South African Qualification and Certification Committee for the Industry

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2.4 Roles and Responsibilities

2.4.1 C&I Engineering

Responsible for:

- Conducting quality checks.
- Specification clarity

2.4.2 C&I Maintenance

Responsible for:

- Conducting quality checks.
- Specification clarity

2.4.3 Spares Supply Contractor

Responsible for:

- Supply of all spares required as per the list in the appendix A.
- Proper handling and transportation of spares
- Immediate spares are readily available as it's for a safety related plant

2.5 Stores/Buying/Contract manager

Responsible for:

- Ensuring process is always adhered
- Communication with the contractor with regards to spares

2.6 Related/Supporting Documents

Not Applicable

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3. Scope of work and requirements

3.1.1 The contractor shall supply all spares required as and when required.

3.1.2 The Contractor shall transport spares to the Kendal power Station stores

3.1.3 The Contractor must have their own transport (vehicle) for transportation of spares

3.1.4 The Contractor shall adhere to all Fire Detection System Lawful Requirements and comply to the latest standards and code of practice governing fire detection and suppression systems, most importantly:

- Requirement of Department of Labour – Compliance with OHSA, SAQCC (Fire) registered
- SANS 10139: Fire Detection and Alarm Systems for Buildings – System Design, Installation and Servicing
- SANS 10400: National Building Regulations
- SANS 246: Code of Practice for Fire Protection for Electronic Equipment Installations
- SANS 369-1: Code of Practice for the Operation of Fire Protection Measures – Part 1: Electrical Actuation of Gaseous Total Flooding Extinguishing Systems
- NFPA 72: National Fire Alarm and Signalling Code

3.1.5 Unplanned Site Visits Due to Breakdowns:

- These visits will only be made use when the Employer requires services from the Contractor out of normal working hours. Hence, it's recommended to always keep some critical spares readily available.

3.1.6 Contractor shall adhere to Eskom Safety, Health and Environmental Requirements.

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3.2 List of spares to be supplied

List of Spares

Item nr	Description
1.	Pressure Gauge, 0 – 1600 kPa
2.	Pressure switch, Danfoss 0-8 Bar
3.	Detector Sensors, DT953
4.	Detector Heat, Intrinsically Safe, DT972
5.	Galvanic Barrier GBX70
6.	Protocol Translator, intrinsically
7.	Module, Linear Heat PIM-430 D-E
8.	Monitor, Switch
9.	Monitor, Zone, 55000-813
10.	Module, I/O
11.	Loop Driver LC1502
12.	Arrestor, Surge
13.	Power Supply, PSU2000 Rev 1.1
14.	Manual Call Point, addressable, interior
15.	Detector, Heat
16.	Base, Mounting for Detectors

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17.	Switch, Supervisory
18.	Manual Call point, addressable, weatherproof
19.	Point type Smoke Detector, Optical
20.	Break Glass
21.	Card, X-pert
22.	Charger, Blue Ginger
23.	Isolator
24.	Dual Stage Filter for VESDA system
25.	BS131N 12V-26AH battery
26.	Fire cable PH120 500m drum
27.	Fire cable PH30 500m drum
28.	Techno-switch AE-TC5808-FT 8 Loop Intelligent Control Panel c/w 8 Loops (Fault Tolerant Network)
29.	Fire Alarm Speaker Strobe at Rs 2500/piece | Fire Alarm Strobe
30.	Sounder Beacon (certified to EN54)

Note: Some other spares may be added as the plant gets upgraded.

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4. Revisions

Date	Rev.	Compiler	Remarks
23/10/2025	1.0	Langa Ngcobo	Scope of Work
01/10/2026	1.1	Langa Ngcobo	Scope of Work

5. Development Team

- Langa Ngcobo
- Motlatsi Ntjana
- Thaba Mathebe
- Simanga Sithole

6. Acknowledgement

Not Applicable.

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