


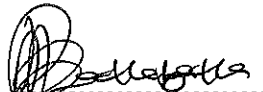
	SOW	Camden Power Station
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Title Camden PS Access Control And CCTV Camera Maintenance Contract Scope of Work	Document Identifier. 240-137089940 HBS for Technical Docs Discipline Common Plant Custodian Dept Engineering, Security & Safety Revision 3 Total Pages 11 Next Review Date 2021-05 Disclosure Classification Controlled Disclosure
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Compiled / Reviewed by	Supported by	Functional Responsibility	Authorized by
			
D. Tselane	G. January	D. Tselane	M. Mathabatha
C&I Engineer	Camden Security Manager	C & I Engineering Manager(A)	Engineering Group Manager
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1. Introduction

An access control system is a type of security that manages and controls who or what is allowed entrance to a system, environment or facility. Camden Power Station has physical access control systems installed in the station. This scope of work is for the purpose of outlining the plant areas needing maintenance and also how the maintenance should be conducted by the contractor.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of the scope of work is to outline the maintenance work to be performed on the access control equipment and CCTV camera at Camden Power Station by the assigned contractor.

2.1.2 Applicability

The document is applicable to the following Departments:

- C & I Engineering
- Security

2.1.3 Effective date

The document is effective as of date of authorisation.

2.1.4 Normative References

Parties using this document shall apply the most recent edition of the documents listed below.

- [1] 32-4- Standard for Closed Circuit TV Surveillance System and Maintenance Guidelines
- [2] 240-102220945- Specification for Integrated Access Control System (IACS) for Eskom sites
- [3] 240-86738968- Standard for Security Alarm Systems for Protection of Eskom Installations and its Subsidiaries
- [4] 240-91190304- Specification for CCTV surveillance with intruder detection

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2.1.5 Informative References

- [1] ZyXEL- IEEE 802.3az-compliant Switch with Decent Performance for Small-group Networks datasheet
- [2] SHERLO- TRONICS-Back up power supply 3.2 AMP datasheet
- [3] HRPG- 200 series power supply module datasheet
- [4] 360 Series power supply datasheet
- [5] SAMSUNG 24" LCD monitor datasheet
- [6] MultiVid (Jasco) OEM Maintenance and Operating Manual

2.2 Definitions

Definition	Description
Camera	A device for recording visual images in the form of photographs or video signals.
CCTV	A system consisting of camera equipment, storage, monitoring and associated equipment for transmission and controlling purposes
CCTV Cable	The cable type used to connect the cameras to the (Digital Video Recording) DVR
DVR	A device where the video the security cameras are capturing is recorded, stored, and managed. The recorded video is retrieved to the monitor via LAN.
Monitor	An output device which displays information in pictorial form
Monitoring	(relating to component condition) process of verifying that interconnections and components are functioning correctly, (relating to operator activity) viewing live images in order to detect events or incidents

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Network switch	A computer networking device that connects devices together on a computer network by using packet switching to receive, process, and forward data to the destination device
Power Supply	An electrical device that supplies electric power to the camera
PTZ camera	A camera that is capable of remote directional and zoom control.
Root Cause Analysis	Any recognised method used to identify the root cause(s) and associated information detailing the root and contributing factors
Server	A computer designed to process requests and deliver data to another computer over the internet or a local network
Video Management System	Software used to connect to multiple DVRs or NVRs and view the footage from the attached cameras

2.3 Abbreviations

Abbreviation	Explanation
C&I	Control and Instrumentation
CCTV	Closed Circuit Television
DVR	Digital Video Recording
LCD	Liquid Crystal Display
PSU	Power Supply Unit
PTZ	Pan, Tilt and Zoom
SOW	Scope of work
NKP	National Key Point

2.4 Roles and Responsibilities

- C&I engineering shall compile the scope of work for the Access control and CCTV Camera Maintenance contract
- Security department shall use this document to ensure proper maintenance of installed access control equipment

2.5 Process for Monitoring

The C&I engineering and security department will ensure compliance to this document

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2.6 Related/Supporting Documents

N/A

3. Scope of work

3.1 Plant areas covered in the scope

The scope of work is to maintain and supply spares for the following

- Access control at the main gate which includes
 - HID readers
 - Spike traffic light barriers
 - Control room doors
 - Mag locks
 - Turnstiles
 - Front ends
 - X-ray machines
 - Metal detectors
 - DTC1000 thermal card printer
 - C30 Thermal card printer
 - Digital enrolment camera
- Access control at the service entrance gate which includes
 - Front end readers
 - Double synchronised barrier
- Access control at the employee parking gate which includes.
 - Spike traffic light barrier
 - Front end readers
- Access control at the executive offices which includes
 - Fingerprint readers

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- Analogue CCTV cameras at security building which includes
 - Bullet cameras
 - Box cameras
 - Dome cameras
- Analogue PTZ cameras at security building which includes.
 - PTZ speed domes
 - Joysticks
 - Wireless transmitter Video
 - Wireless transmitter RS485
- CCTV cameras at the executive offices which includes
 - Dome cameras along the passages and in the office open plan areas
- CCTV cameras systems within the plant(Unit 1-8, Common Plant, Stores, Procurement Building, Control Room, Ash Dam and 6 6KV Substation which includes
 - Bullet cameras
 - Box cameras
 - Dome cameras
- DVR recorders for the analogue which includes
 - 16 channel DVR
 - Live viewer software
- Server for the Access control which includes:
 - Softwin3 Database
 - Live viewer software
- Access control PCs which includes
 - Softwin3 remote connect PC
- CCTV remote view PC which includes
 - Wireless link

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➤ Network which includes

- Ethernet cabled network
- Ethernet Smart switch

3.2 Maintenance Works to be performed by contractor

Maintenance on the mentioned areas of responsibility includes

Camera & Housing

For the system's camera and housing, the contractor executes the following

- Camera/lens focus and auto iris adjustment
- Camera field of view adjustment to requirements
- Camera/housing viewing window cleaning, inside and out
- Camera lens cleaning
- Camera Interior enclosure cleaning and drying
- Checking operation of pan, tilt and zoom focus Do this using the controller in the control room to check all these operations
- Check all mountings, brackets and housings

Wiring & Cables

For the system's wiring and cables, the contractor executes the following

- Checking wiring and cable harnesses for wear and fray
- Checking to make sure cable is dressed properly
- Checking connectors and cable entry points for loose wiring
- Checking that the coaxial cable is transmitting an adequate video signal to control room
- Making sure all coaxial connectors are insulated from conduit and pull boxes

Control Equipment

For the system's control equipment, the contractor executes the following

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- Making sure that monitors are free from picture burn-in and distortion
- Making sure that monitors have proper contrast and brightness
- Making sure that DVR's are functioning properly and providing distortion free recording
- Checks that all control equipment is operational This means that switchers allow proper sequencing, multiplexers are properly encoding and decoding, and matrix switcher keyboards are fully operational
- Checks that all coaxial connectors on the back panels for loose connections
- Checks that all power connections to ensure AC plugs are not loose
- Do software version upgrades, software patches and changes when required
- Ensure that regular update of antivirus and operating system software are updated on the main Video Management System (VMS) server computer bi-weekly
- Software backup for every 3 months for main Video Management System (VMS) server computer
- Video signal backup for every 2 months

Access equipment

For the system's access equipment, the contractor executes the following

- Functional testing of all aspects of the system operation on card readers, turnstiles, spike barriers, mag locks, Metal detectors, finger print readers, x-ray machines and thermal card printers
- Inspection of all installed equipment to verify that the system is mechanically sound This will include all fasteners, fixings, cables, connectors, cable sleeves etc

General administration

For general administration, the contractor executes the following

- Attend to call-outs and breakdowns Respond period during call outs should be 24 hours
- The ongoing training of staff on correct operating procedures of the software and hardware
- Perform Root Cause Analysis for all incidents that require repairs.
- Compile a report based on the Root Cause Analysis containing the following information
 - Date of visit, Equipment, Location

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- Cause of equipment failure
- Action taken
- Recommendations
- For each preventative maintenance visit a report must be submitted containing the following information.
 - System Health Status, including system performance(i.e System Availability, System Reliability)
 - Inspection done on all equipment and which faults were found
 - Maintenance actions taken
 - The measured signal levels of all video cameras This will determine whether degradation of the signals is taking place
- Preventative maintenance frequency for the access control equipment and CCTV Camera System should be **twice a month (4 days each visit)**.
- Critical spares (with long lead time) must be provided by the contractor as when required as part of the contract to reduce system downtime. Please refer to Bill Of Quantities for critical spares

Contract Key Performance Indicators

1. System Availability

System Availability shall be greater than 98%

$$\text{System Availability} = \frac{(\text{Total hours}) - (\text{Total non operational hours})}{\text{Total Hours}} \times 100$$

2. System Reliability

Monthly System Reliability shall be greater than 95%

$$\text{Monthly System Reliability} = \frac{\text{Number of Faults in a Month}}{\text{Number of Systems Installed}} \times 100$$

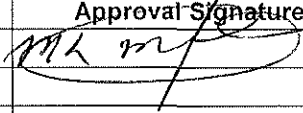
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4. Document Acceptance (Stakeholders)

This document has been seen and accepted by

Name	Designation	Approval Signatures
Malose Mongatane	Security shift supervisor	

5. Revisions

Date	Rev.	Remarks	Compiler
15 May 2018	1	Original Issue	NA Mamabolo
19 February 2019	2	Including access control and CCTV equipment in the executive offices	NA Mamabolo
07 January 2020	3	Combining Access Control Scope and CCTV Camera Maintenance Scope Of Work	DA Tselane

6. Development Team

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

- Malose Mongatane

7. Acknowledgements

N/A

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