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| Eskom | **Scope Of Work** | **CAMDEN POWER STATION** |

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# 1. Introduction

Camden Power Station is a National Key Point and thus it must be protected under that Act. The existing Camden perimeter fence is severely damaged, hence the requirement to replace the entire perimeter fence. The current NKP report from the recent provincial SAPS site visit and inspection dated 22 November 2022 indicated that Camden`s perimeter fence is non-compliant. This non-compliance in turn will result to the National Key Point Act violation which can lead into the NKP status being revoked by the NKP provincial office. Therefore, it is imperative that the structural integrity of the perimeter fence is in good condition.

# 2. Supporting Clauses

## 2.1 Scope

This document provides details of the Camden Power Station Perimeter fence replacement project. The document also includes standards and guidelines that should be adhered to.

### 2.1.1 Purpose

The purpose of this document is to provide guidance and comply with the minimum requirements for the Eskom`s perimeter fence standard.

### 2.1.2 Applicability

This document shall apply to Camden Power Station.

### 2.1.3 Effective date

This document will be effective after it has been signed for Authorisation.

## 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] National Environmental Management Act (NEMA) 107 of 1998

[3] Construction Regulations, 2014

[4] 32-727 - Eskom Safety, Health, Environment and Quality (SHEQ) Policy

[5] Occupational Health and Safety Act No. 85 of 1993

[6] 240-56364545 – Structural Design and Engineering Standard

[7] 240-76368574 – High Risk Security Mesh Fencing

### 2.2.2 Informative

[1] SANS 121 Hot-dip galvanized coatings on fabricated iron and steel

[2] SANS 675 Zinc -coated fencing wire

[3] SANS 927 Precast concrete kerbs, edgings, and channels

[4] SANS 2001-BE1 Earthworks (general)

[5] SANS 2001-CC1: Concrete works (structural)

[6] SANS 1200D Standardized specification for civil engineering construction Section D: earthworks

[7] SANS 1200DA Standardized specification for civil engineering construction Section DA: Earthworks (small works)

[8] SANS 1200G Standardized specification for civil engineering construction Section G: Concrete

[9] SANS 1700-5-8 Fasteners Part5: General requirements and mechanical properties Section 8: mechanical properties of corrosion-steel fasteners-bolts screws and studs

## 2.3 Definitions

| Definition | Description |
|---|---|
| Contractor | Service provider contracted to provide a specific service to Eskom, Camden Power Station. |
| Employer | Eskom, Eskom Camden Power Station or representative |

## 2.4 Abbreviations

| Abbreviation | Explanation |
|---|---|
| ITP | Inspection, Testing Plan |
| MS | Method Statement |
| NKP | National Key Point |
| QCP | Quality Control Procedure |
| SANS | South African National Standards |
| NEMA | National Environmental Management Act |
| ISO | International Organization for Standardization |
| OSH Act | Occupational Health and Safety Act |

### 2.5 Roles and Responsibilities

Auxiliary Engineering – Issuing of the scope of work.

Projects Department - Project management of the project.

Contactor – Execute the defined scope according to contractual agreement.

#### 2.5.1 Contractor

a) Execute the defined scope according to contractual agreements, including perimeter fence replacement.

#### 2.5.2 Employer

a) Review and accepts the Contractor's method statement procedure, QCP and ITP.

b) Is present for all applicable points of the ITP.

c) Provide Engineering support for the certificate of compliance.

### 2.6 Process for Monitoring

All construction activities will be monitored by Projects department.

### 2.7 Related/Supporting Documents

N/A

## 3. Scope of Work

### 3.1 Site Access

Camden is located approximately 15km from Ermelo, Mpumalanga, along the N2 road.

### 3.2 Current Condition

Camden Power Station is a National Key Point and thus it must be protected under that Act. The existing Camden perimeter fence is severely damaged, hence the requirement to replace the entire perimeter fence.

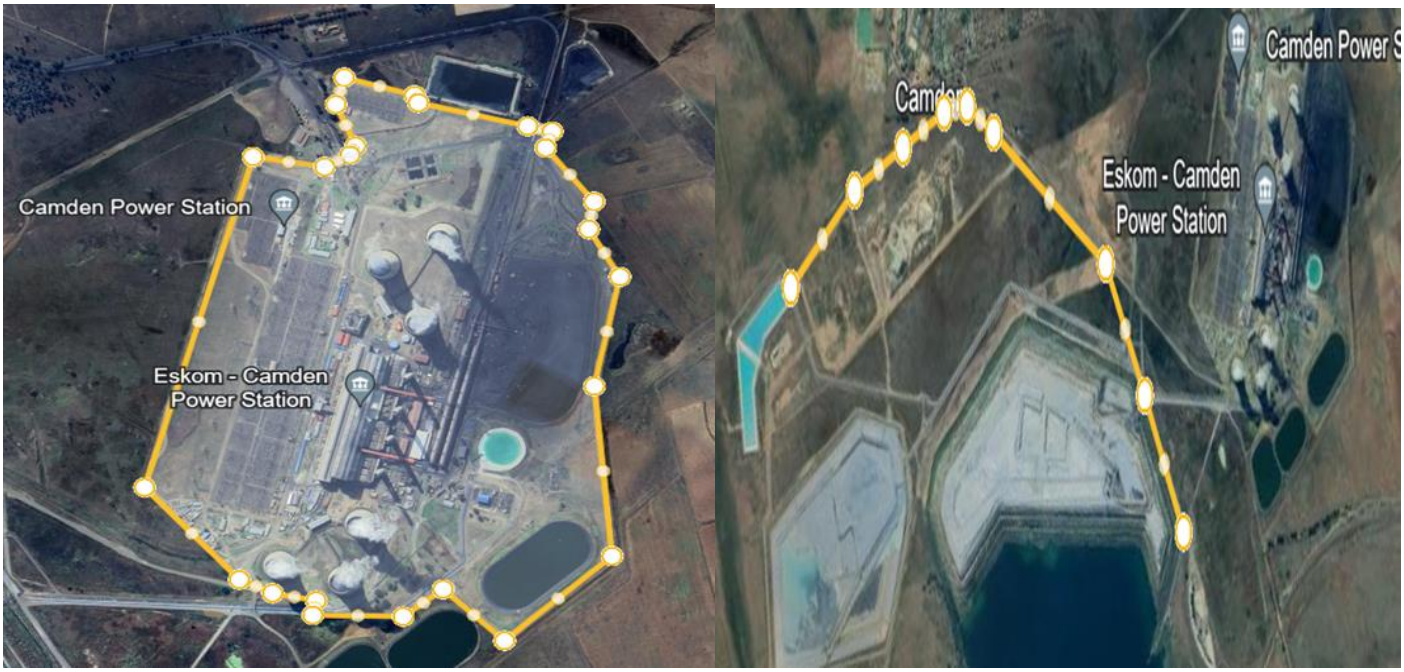


**Figure 1: Fence Site Layout**

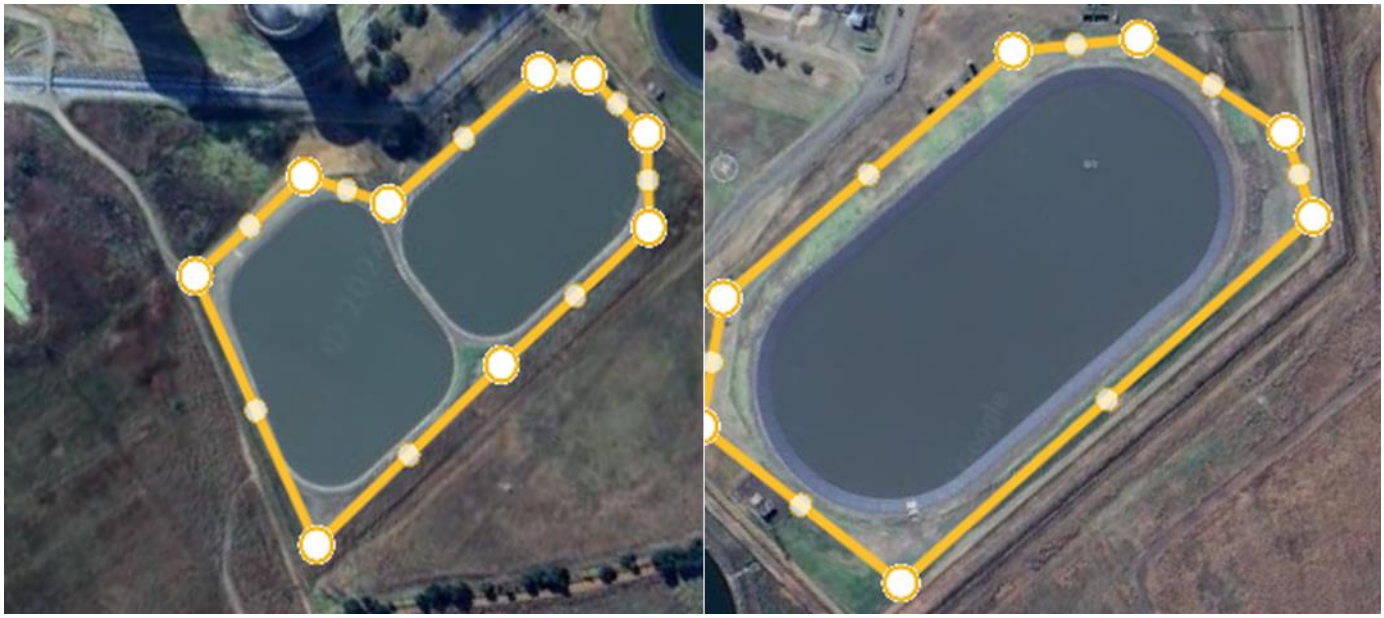

**Figure 2: Raw Water Reservoirs Fence Layout**

### 3.3 Work to be Executed.

**Perimeter Fence**

The Camden perimeter fence is severely damaged and corroded. The damage is generally in the entire inner and outer fence including access gates fence except for zone 4,5&6. All construction works shall be in accordance with the standards and guidelines listed in section 2.2. The work to be performed on the Camden perimeter perimeter fence includes:

- Surveying and setting out of the works including establishment and protection of any benchmarks required to complete the works.
- Removal of existing inner and outer fence before the installation of the new inner & outer fence.
- Excavation for concrete foundations.
- Supply and install galvanised posts, stays and extension arms.
- All posts to be installed and cast on a 450mmx 450mm x 500mm deep concrete foundation (30MPa/19mm).
- Care to be taken that vertical and horizontal alignment of track is correct before concrete fill is cast.
- Supply and installation of welded Mesh Fence. The Welded Mesh Fence shall be 3.15mm diameter HT mesh 50x50 openings.
- Supply and install Barbed wire overhangs on the perimeter fence shall be 2.24mm diameter galvanised HT campion class A
- Lockable galvanised security gate of 6m width and height of 2.4m
- All gate poles to be casted on 450mmx 450mm x 500mm deep concrete at 3.5m apart.
- 6mm diameter drain holes at 300mm centres shall be drilled at the bottom of all gates before galvanizing.

- All bolts, nuts washers, turnbuckles, hinges and similar fittings shall be of galvanized mild steel complying with the requirements of SANS 1700-5-8.

### Raw Water Reservoirs

The fence around the raw water reservoirs poses a risk of uncontrolled access into the reservoirs. Furthermore, the existing fence around the reservoirs is also in an unacceptable poor condition due to severe corrosion. The fence to be installed is a single tier fence. The work to be performed on the reservoirs includes:

- Surveying and setting out of the works including establishment and protection of any benchmarks required to complete the works.
- Excavation for concrete foundations.
- Supply and install galvanised posts, stays and extension arms.
- All posts to be installed and cast on a 450mmx 450mm x 500mm deep concrete foundation (30MPa/19mm).
- Care to be taken that vertical and horizontal alignment of track is correct before concrete fill is cast.
- Supply and installation of welded Mesh Fence. The Welded Mesh Fence shall be 3.15mm diameter HT mesh 50x50 openings.
- Supply and install Barbed wire overhangs on the perimeter fence shall be 2.24mm diameter galvanised HT campion class A
- Lockable galvanised security gate of 6m width and height of 2.4m
- All gate poles to be casted on 450mmx 450mm x 500mm deep concrete at 3.5m apart.
- 6mm diameter drain holes at 300mm centres shall be drilled at the bottom of all gates before galvanizing.
- All bolts, nuts washers, turnbuckles, hinges, and similar fittings shall be of galvanized mild steel complying with the requirements of SANS 1700-5-8.

### New Ash dam

The portion of Camden property nearby Camden Primary School is not fenced. This open portion poses a risk of uncontrolled access to the new ash dam since it is nearby the school and Camden village. The fence to be installed is a single tier fence. The work to be performed on the new ash dam includes:

- Surveying and setting out of the works including establishment and protection of any benchmarks required to complete the works.
- Excavation for concrete foundations.
- Supply and install galvanised posts, stays and extension arms.
- All posts to be installed and cast on a 450mmx 450mm x 500mm deep concrete foundation (30MPa/19mm).
- Care to be taken that vertical and horizontal alignment of track is correct before concrete fill is cast.
- Supply and installation of welded Mesh Fence. The Welded Mesh Fence shall be 3.15mm diameter HT mesh 50x50 openings.
- Supply and install Barbed wire overhangs on the perimeter fence shall be 2.24mm diameter galvanised HT campion class A

- Lockable galvanised security gate of 6m width and height of 2.4m
- All gate poles to be casted on 450mmx 450mm x 500mm deep concrete at 3.5m apart.
- 6mm diameter drain holes at 300mm centres shall be drilled at the bottom of all gates before galvanizing.
- All bolts, nuts washers, turnbuckles, hinges and similar fittings shall be of galvanized mild steel complying with the requirements of SANS 1700-5-8.

### 3.4 Site Visit and Documentation

The following is required from the Contractor.

**a) Come to site to view the area before submitting their quote.**

b) Submit proposed method statement, QCP and ITP for acceptance by the Employer.

c) Submit relevant welding certificates, QCP and ITP.

d) Submit all the signed QCP and ITP documentation once works are completed.

e) Submit all the supplied material documentation once works are completed.

f) Submit a work schedule/programme for remedial works.

### 3.5 Test Requirements and Procedure

Not applicable.

## 4. Acceptance

This document has been seen and accepted by:

| Name & Surname | Designation | Signature |
|---|---|---|
| Skhumbuzo Nkosi | System Engineer – Camden Power Station |  |

## 5. Revisions

| Date | Rev. | Compiler | Remarks |
|---|---|---|---|
| July 2024 | 1.0 | N. Shozi | Original Document |

## 6. Development Team

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

- S. Nkosi
- N. Tshabalala

## 7. Acknowledgements

N/A