Eskom	Scope of Work	Camden Power Station

Title: **Camden Power Station: Provision of an APP for both Old and New Ash Disposal Facility and Water Dams**

Document Identifier:	**229-T-2266**
Alternative Reference Number:	**N/A**
Area of Applicability:	**Engineering**
Functional Area:	**Auxiliary**
Revision:	**2.0**
Total Pages:	**8**
Next Review Date:	**N/A**
Disclosure Classification:	**Controlled Disclosure**

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Date: 2023/03/15	Date: 2023/03/14	Date: 2023/03/15	Date: 16/03/2023

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1. Introduction

Camden Power station requires the provision of an Appointed Professional Person (APP) for the continuous inspection of the decommissioned old ash dam, reporting to Dam Safety Office (DSO) and sign-offs of various dams at the power station. The details of the dams requiring APP supervision and monitoring are provided below.

2. Supporting Clauses

2.1 Scope

The scope comprises of the provision of an APP to conduct site inspections (as required), review information and data packs, compile submissions to the DSO and other relevant authorities to assist in the sign-offs and close out of the various dams at Camden Power Station.

2.1.1 Purpose

The purpose of the report is to document the proposed appointment of an APP to inspect, monitor, review data, report and assist in closing out of the existing ash dam and process water dams at Camden Power Station.

2.1.2 Applicability

This document shall apply throughout Camden Power Station and Eskom Generation Engineering

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] Chapter 12: Dams Safety Regulations in terms of Section 123(1) of the National Water Act, (No: 36 of 1998)

[3] All work is conducted in accordance with the requirements of the Occupational Health and Safety Act (No: 85 of 1993)

2.2.2 Informative

[4] JW145/15/F027 - (November 2015): Camden Power Station Step-In and Go Higher -Assessment Geotechnical Report

[5] TN054/16/F827-00 - (November 2016): Camden Power Station: Ash Dam Geotechnical Stability Review

[6] 1896962-328971-6 – (October 2019): Camden Ash Dam Stability Update

[7] 1896962-324210-3 – (October 2019): Camden Ash Dam - Dam Break Analysis

[8] 240-51017652: - Guideline for Technical Assurance

[9] PAA-DK/KP2660 - (June 2021): Camden Power Station Ash Disposal Facility Stability Evaluation

2.3 Definitions

Not Applicable

2.4 Abbreviations

Abbreviation	Explanation
ADF	Ash Disposal Facility
APP	Appointed Professional Person
AWR	Ash Water Return
AWRD	Ash Water Return Dam
AWRR	Ash Water Return Reservoir
DSO	Dam Safety Office
DWS	Department of Water and Sanitation
GLF	Generation Load Factor
Ha	Hectares
HDPE	High Density Polyethylene
LIDAR	Light Detection and Ranging
NWA	National Water Act
OSHA	Occupational Health & Safety Act
SoW	Scope of Work

2.5 Roles and Responsibilities

The *Consultant:*

I. Reviews all relevant existing site information inclusive of existing geological and geotechnical reports.

II. Makes provision for an APP for a period of 36 months.
   a. The APP will conduct site inspections for the ash dams and all process water dams on site and review existing data packs of information.

   b. The APP will respond to queries and provide mitigations/remediation where needed.

   c. The APP will engage the DSO, DWS and other relevant authorities for the required update reports of the dams at Camden Power Station.

   d. The APP will assist in the compilation of close out documentation and provide the necessary sign-offs for the existing dams at Camden Power Station.

   e. The APP will assist and advise in the compilation of old ash dam decommissioning and rehabilitation plan documentation for the existing old ash dam at Camden Power Station.

III. Provides adequate resources (technical team) including provision of equipment for required works.

IV. Manages cost and a scheduled time frame of work.

V. Ensures that the scope is carried out in full;

VI. Provides regular feedback on the status of each phase.

VII. Ensures that all site work is conducted by a competent person.

VII. Ensures that prior to any fieldwork, all parties working on site have familiarised themselves with the Employers safety requirements and the Occupational Health and Safety Act Regulations (No: 85 of 1993) (OSHA).

IX. APP must ensure that stability analysis reports are provided to the station every 2-year frequency indicating the stability of the Ash dam with Factors of Safety and a risk assessment.

2.6 Process for Monitoring

Not Applicable

2.7 Related/Supporting Documents

Not Applicable

3. Scope of Work

The Works includes but is not limited to:

3.1 Desk Study

I. The *Consultant* conducts a desk study review of all known literature, existing geotechnical information and regional information available for the existing ash facilities and associated foundation soils in the area, as well as all previous submissions made.

II. The latest aerial LIDAR survey with orthophoto (issued by the *Employer)* can be used for planning assessments.

3.2 Provision of the Appointed Professional Person (APP)

The *Consultant* provides an APP for the ash dam and process water dams at Camden Power Station. The following dams have been highlighted as requiring APP inspection, monitoring and sign-off:

I. Old Ash Disposal Facility

The size of the old ash dam at Camden power station is approximately 44Ha. The dam is currently not in operation and has been decommissioned after the commissioning of the new ash dam.

II. Reclamation Dam

The Reclamation dam collects all effluent from the station drains and the sewage plant. All effluent from the station goes via an oil skimming plant which removes the oil and grit for disposal. There are two inlets to the reclamation dam, one from the north and one from the south drains. A pump station consisting of two pumps returns the water from the dam to the Ash Water Return Reservoir or East fourbays depending on the chemistry of the water sample. The design capacity of the reclamation dam is 43 000m³. The dam is lined with an HDPE liner and a 12% sand stabilised protection layer

III. Ash Water Return Reservoir (AWRR)

The AWRR is a natural earth dam with a capacity of 27 000m^3. The Reservoir is a high-level dam receiving water from the Ash Water Return Dam situated outside the station, approximately 1.96 km distance from the reservoir. This reservoir thus, collects water used for ashing and dusting therefore supplying water to the sluice pumps, situated inside the station. The AWRR also collects dirty water pumped from the Coal stockyard when levels of the coal stock yard dam is above 10% and collects dirty water pumped from the Reclamation dam when levels are high and water from the water treatment plant neutralization sump. The reservoir is lined with an HDPE liner and a 12% sand stabilised protection layer

IV. Coal Stockyard Dam

The Coal stockyard dam is located on the South-eastern side of the Power Station. The dam collects all run-offs and other seepages from the coal stockyard and pumps water back to the AWRR. The dam has a capacity of 14 000m³ The Coal Stockyard Dam is lined with HDPE liner

V. Ash Water Return Dam (De Jager's Pan)

The De Jager`s Pan is located approximately 1.96 km outside the Power Station. This Pan, 87 hectares in area, is a natural surface depression (natural earth dam). The bottom surface level of De Jager's Pan has increased by about 300mm to 800mm due to ash slurry running through the Ash dam penstocks (drains) back into the Pan. In addition, the Pan receives water from rainwater runoff from the surrounding catchment area, which is estimated at approximately 135 hectares.

VI. New Ash Disposal Facility-(ADF)

The size of the new ash disposal facility is estimated at approximately 27 846 947m³. The average monthly deposition rate is 120 037 m³/month based on a density of 0.875 t/m³ and a station Generating Load Factor (GLF) of 60%.

VII. Ash Water Return Dams

The AWRD`s storage capacity is estimated at approximately 389 000 m³ with a maximum operating volume (at 70% of the total capacity) at the operating level of 1665.3 mamsl which is 269 500 m³. The maximum depth of the AWRD`s 8.2 m as per the design

The APP is required to conduct all activities as required by Chapter 12 of the National Water Act (No: 36 of 1998) [4] on behalf of the dam owner to ensure compliance with the Act.

This will as a minimum, include the following:

- Conduct periodic site visits for dam visual inspections of the existing dams as stated above.
- Provide old ash dam and other dams safety reports which the station needs to submit to DWS and DSO as part of compliance and monitoring.
- Review and monitor input data and information packs.
- Review and provide information for update of Operations and Maintenance Manuals (as needed).
- Provide responses to queries and mitigations for areas of concerns on the existing dams (where needed).
- Engage the DSO and other relevant authorities on behalf of Camden Power Station for the

dams as stated above.

- Provide feedback on engagement with the DSO and other relevant authorities.
- Assist in the production of the necessary close out documentations for the dams.
- Provide the necessary sign-offs as required for the close-out of these dams.
- The APP role will be required for a period of 36 months.
- The APP will make provision for one site visit per month (unless otherwise needed in emergency circumstances).

4. Acceptance

This document has been seen and accepted by:

Name	Designation	Signature
Elijah Kisaame	Chief Engineer Ash Dams & Dumps Generation Engineering	
Funeka Grootboom	Chief Engineer Dams Generation Engineering	

5. Revisions

Date	Rev	Compiler	Remarks
February 2023	2	Nkanyiso Shozi	Final document

6. Development Team

- Elijah Kisaame — Chief Engineer Ash Dams & Dumps – Generation Engineering
- Funeka Grootboom – Chief Engineer Dams – Generation Engineering

7. Acknowledgements

- N/A