

	SOW	CAMDEN POWER STATION
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Title: **Scope of Work for Supply and Installation of Ash Water Return Dam Pipeline (i.e., Pipeline no. 2)**

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1. Introduction

Camden Power Station is equipped with two separate, but similar wet ash handling plants. The east and west ash handling plants service Units 1-4 and Units 5-8 respectively. Additionally, it includes an Ash Water Return System to facilitate the re-use of the water used to flush all Ash products from both Ash plants to newly constructed Ash Dam Facility.

The new Ash handling dam facility has been constructed at Camden Power Station. The new AWR system is designed to run with four (4) pipelines from the AWRD to the AWRR. Two (2) of the AWR pipelines have been installed as part of the interim solution.

The two (2) installed AWR pipelines are unable to meet the station water demand, which is impacting ashing and dusting activities. In addition, having only 2 AWRD pipelines with no redundancy, also puts the station at risk. Hence it is therefore required for the completion of the construction of the third line.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this document is to provide a detailed scope of work to complete the construction of the third AWRD pipeline.

2.1.2 Applicability

- Auxiliary Plant Engineering
- Projects Department

2.1.3 Effective date

See date of authorized signature

2.2 Normative/Informative References

2.2.1 Normative

- 240-105020315 – Eskom Standard for Low Pressure Valves
- 32-1034 Eskom Procurement and Supply Chain Management Procedure
- BS 10 - Specification for flanges and bolting for pipes, valves and fittings
- ISO 9001 Quality Management Systems

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- OHSA - Occupational Health and Safety Act 85 of 1993

2.2.2 Informative

- N/A.

2.3 Definitions

- N/A

2.4 Abbreviations

Abbreviation	Definition
AHP	Ash Handling Plant
AWR	Ash Water Return
AWRD	Ash Water Return Dam
AWRR	Ash Water Return Reservoir
SOW	Scope Of Work
QCP	Quality Control Plan

2.5 Roles and Responsibilities

N/A

2.6 Process for Monitoring

N/A

2.7 Related/Supporting Documents

N/A

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3. Scope of Work

The AWR system is essential to transport water from the Ash Water Return Dam (AWRD) to the Ash Water Return Reservoir, utilising AWR pumps. The AWR pumps extracts the water from the AWRDs from there it is pumped to AWRR via the overland 600NB pipelines. The new AWR system is designed to run four AWR pipelines from the AWRD to the AWRR, however only two (2) of four (4) pipelines have been installed as part of the interim solution. The two (2) installed pipelines are unable to meet required AWRR level for ashing and dusting activities resulting in forced partial load losses. Hence, there is a need to complete the construction of the third AWRD pipeline.

The following scope of work is for the following:

- The scope of work shall include all equipment required to complete construction of the AWRD line 2 (e.g., Air breathers, Pipes, Valves, flanges, couplings, pipe supports, gaskets, bolts, nuts, etc.).
- The contractor will be responsible for supplying all necessary lifting and rigging equipment, necessary to execute the scope.

3.1 Pre-Preparation:

- All specifications to be confirmed by the Contractor prior to execution.
- All bends, end caps, T-pieces and reducers should be purchased and not fabricated.
- Material Data Sheet and EN10204 3.1 cert to be supplied to the Client prior to execution.
- Once a detailed SOW is concluded, the Contractor must supply necessary QCP and Welding Procedures for approval prior to commencement.

3.2 Specifications

3.2.1 Pipe Specifications:

All pipeline material will be mild steel to SANS719, corrosion protection to Eskom specification 240-106365693, final color to be strong blue SANS1091.

Material	Nominal Diameter (mm)	Wall Thickness (mm)	Pressure rating (MPa)	Pipe Length	Number of pipes
Mild Steel (MS) NB 600	600	6	1.6	18m	248
Mild Steel (MS) NB 400	400	6	1.6	6m	4
Mild Steel (MS) NB 200	200	6	1.6	6m	2

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3.2.2 Couplings

- Type : "Viking Johnson" marine couplings
- Nominal Diameter : 600NB
- Gasket : EPDM (Ethylene Propylene Diene Monomer)
- Coating : Powder coating
- Bolts & Nuts : Galvanised
- Number of Couplings 248

3.2.3 Flange Specifications:

All flanges shall be in accordance to SANS 1123. Where not flanged pipe specials and pipe lengths to be welded according to Eskom specifications 240-106628253

Material	Nominal Diameter (mm)	Number of flanges
Mild Steel (MS) NB 600	600	36
Mild Steel (MS) NB 400	400	10
Mild Steel (MS) NB 200	200	6
Mild Steel (MS) NB 200	100	4

- Bolts and Nuts: As per BS 10: Table E of latest equivalent, High Tensile Strength 8.8

3.2.4 Bends Specifications:

- All pipe material conforms to ASTM A234 WPB
- Schedule 40
- Bends (90 degrees) (QTY 2 Off)

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3.2.5 T Piece

- Material ASTM A234 WPB
- Schedule 40
- T Piece pipes (QTY 4 Off)

3.2.6 End Cap

- Material ASTM A234 WPB
- Schedule 40
- 200NB end caps (QTY (20off))

3.2.7 Casket Specifications:

- 3mm Klingersil type C4430

3.2.8 Valve Specifications

All valves conform to 240-105020315 Eskom Standard for Low Pressure Valves and Flange drilled as per BS 10: Table E or latest equivalent.

3.2.8.1 DN100, PN16 resilient seal gate valves

- Valve type : Dual rotating disc gate valve, with rising spindle
- Valve body & gate material : Carbon Steel with high chrome content. The valve body is to have ceramic lining.
- Number of Valves 4

3.2.8.2 DN200, PN16 resilient seal gate valves

- Valve type : Dual rotating disc gate valve, with rising spindle
- Valve body & gate material : Carbon Steel with high chrome content. The valve body is to have ceramic lining.
- Number of Valves 4

3.2.8.3 DN600, PN16 resilient seal gate valves

- Valve type : Dual rotating disc gate valve, with rising spindle
- Valve body & gate material : Carbon Steel with high chrome content. The valve body is to have ceramic lining.
- Number of Valves 1

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3.2.9 Air release valves

- Valve Size : 100mm
- Material : Cast iron
- Dimensions : DIA 235mm X WD 315mm X HT 442mm X NB 100mm
- Type : VAV-101-00-25 BAR
- Number of valves 4

3.3 Other Requirements:

- All welding will be in line with the requirements of EN13480 and the Eskom welding requirements document 240-10662853 Standard for Welding Requirements on Eskom Plant
- All fit-up inspection must be conducted by Welding Inspector
- All final welds must be NDT as per 240-8353994 Standard for Non-Destructive Testing (NDT) on Eskom Plant
- All pipelines to have a corrosive resistant as per Eskom specification 240-106365693

4. Acceptance

N/A

5. Revisions

Date	Rev.	Compiler	Remarks
October 2024	1		Original issue

6. Development Team

7. Acknowledgements

N/A

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