

	Contract Scope of Work	Engineering
---	-------------------------------	--------------------

Title: Supply, delivery, removal, installation and commissioning of Boiler Pneumatic Cylinders at Kendal Power Station contract SOW

Document Identifier: *1040035

Alternative Reference Number: N/A

Area of Applicability: Kendal Power Station

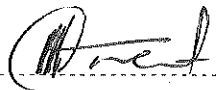
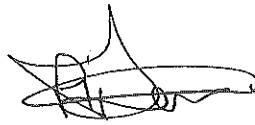
Functional Area: Boiler Engineering

Revision: N/A

Total Pages: 9

Next Review Date: N/A

Disclosure Classification: Controlled Disclosure

Compiled by	Supported by	Functional Responsibility	Authorized by
			
R Makhokha System Engineer	L Komane C&I Snr Technician engineering	N Khumalo Boiler engineering line manager (Acting)	P Takane Engineering manager
Date: 08/06/2026	Date: 08/06/26	Date: 08/06/2026	Date: 9/6/2026

Content

	Page
1. Introduction	3
1.1 Scope.....	3
1.2 Purpose.....	3
1.3 Applicability	3
1.4 Effective date	3
2.1. Normative/Informative References	3
2.1.1. Normative.....	3
2.2. Informative	3
2.3. Definitions	4
2.4. Abbreviations	4
2.5. Roles and Responsibilities	4
2.6. Process for Monitoring	5
2.7. Related/supporting documents.....	5
3. The Contractors' scope	5
3.1. General Requirements for the Works	5
3.2. Detailed SOW	5
3.2.5. Corrosion Protection.....	8
3.2.6. Codes and Standards.....	8
3.3. Safety.....	8
3.4. Environment.....	8
3.5. Risk management	8
3.6. Product Preservation Requirement.....	9
4. Acceptance	9
5. Revisions.....	9
6. Development Team	9
7. Acknowledgements	9

Tables

Table 1: Contractor supply and installation spares list	7
---	---

CONTROLLED DISCLOSURE

When a document is released from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure compliance with the conditions of release. The user should ensure that the document is not used for any purpose other than that for which it was released and that it is not used for any purpose other than that for which it was released.

1. Introduction

Pneumatic boiler cylinders are used to drive various boiler components. These cylinders are used on the burner corners and windbox dampers at Kendal Power Station. There are a total of 2 types of cylinders that are used, namely: burner tilt and windbox damper.

The burner tilt cylinders are needed to adjust the PF firing angle and the windbox dampers to control the combustion air and prevent burn backs from the furnace. All these cylinders are essential to the boiler operation and not having them when needed will result in longer downtime of the boiler plant which will have a negative impact on production in the long run. To avoid unavailability of the mills and PF burners, the cylinders must be available and up to OEM spec.

1.1 Scope

This document covers the works information for the supply and delivery of Pneumatic Boiler Cylinders for a period of 5 years at Kendal Power Station.

1.2 Purpose

The purpose of this document is to provide the scope of work for the supply, delivery, handling installation, and preservation of pneumatic boiler cylinders for a period of 5 years at Kendal Power Station.

1.3 Applicability

This document shall apply throughout Kendal Power Station's.

1.4 Effective date

This document is effective from the date of Authorization.

2.1. Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.1.1. Normative

- [1] ISO 9001 Quality Management Systems
- [2] Quality Standard ISO 9001:2008
- [3] ISO 14001: Environmental management Policy

2.2. Informative

- [4] 240-105658000: Supplier Quality Management Specification
[5] QM-58: Supplier Contract Quality Requirements Specifications
[6] *1023822 Kendal outage Philosophy
[7] 36-300 Project and Outage Risk Management Guideline

CONTROLLED DISCLOSURE

- [8] *1017374 Kendal Quality Manual
- [9] *1017357 Non-Conformance, Corrective and Preventive Action
- [10] *1017401 Integrated Risk Management Work Instruction
- [11] *1017482 Control and Approval of Quality Plan
- [12] *1019284 Personal Protective Equipment work Instruction
- [13] *1015807 SANS OHAS 18001:2011 Management System
- [14] *1017372 Occupational Health and Safety Hazard Identification Work Instruction

2.3. Definitions

Definition	Explanation
Contractor	In the context of this document, the "Contractor" will be regarded as the service provider who is authorised by the station to execute the specific work contained in this document
Employer	In the content of this document, the employer will be regarded as the Eskom power plant receiving the service from the contractor

2.4. Abbreviations

Abbreviation	Explanation
GO	General overhaul
IR	Interim repairs
NDT	Non-Destructive Tests
OHS	Occupational Health & Safety
QCP	Quality Control Plan
SHEQ	Safety Health Environment & Quality
WPS	Welding Process Specification

2.5. Roles and Responsibilities

The **Contractor** is responsible for the entire works as prescribed in this Works Information.

The **Employer** is responsible to provide the design requirements as well as the scope of work.

1.10.1 Maintenance and Outage Department

- Ensure quality control of spares received at stores,
- Ensure reservation of spares required spares
- Develop a Kendal specific pneumatic cylinder spares management system,
- Forward planning to ensure stock availability
- Management of contract
- Inform contractor supplier of outage date and plan of installation and commissioning

CONTROLLED DISCLOSURE

- Ensure installation falls within the required outage/opportunity duration

1.10.2 Engineering Department

- Provide detailed technical expertise

1.10.3 Quality and Assurance Department

- Ensure quality control processes are in place.
- Ensure adherence to Eskom operating procedures, policies, guidelines and plant safety regulations
- Review and accept quality control plans

2.6. Process for Monitoring

- N/A

2.7. Related/supporting documents

- N/A

3. The Contractors' scope

3.1. General Requirements for the Works

- a. The *Contractor* procures raw material, fabricate, supplies, delivers, off-loads, installs and does hot and cold commissioning of the pneumatic cylinder spares at Kendal power station on an “as and when” required at Kendal Power Station.
- b. The contractor shall provide manpower for all activities occurring on site and ensure reliable transportation of employees to site. Manpower required include 1x supervisor, 3x technicians, 2 x mechanics and 1x safety officer.
- c. The contractor shall be responsible for the removal of existing pneumatic cylinders from the plant and booking them back to stores before commencing with installation
- d. This contract is on an ‘as and when required’ basis. The contractor will be required to conduct installation of the wind box pneumatic cylinders in Kendal Power Station.

3.2. Detailed SOW

3.2.1. Installation Scope of Work – Burner Corner Auxiliary Air Damper and Burner Tilt Cylinders

- The Contractor shall supply, deliver, install, commission, and hand over all pneumatic cylinder and positioner equipment as detailed in the purchase order.
- The contractor invites the employer for the Factory Acceptance Test of pneumatic cylinder where they are stroke checked and if the stroke is found to be out, corrections are done at the contractor site.
- All positioners shall be supplied fully calibrated and complete with valid calibration certificates. Calibration certificates shall be submitted to the Employer prior to installation and commissioning.

CONTROLLED DISCLOSURE

- The works shall be executed during planned unit outages. The Contractor shall plan and resource the execution of the works in accordance with the approved outage schedule and the maintenance window allocated for the unit. The Contractor shall submit a detailed installation programme, and Quality Control Plans (QCPs) for review and approval by the Employer prior to commencement of the works. The installation programme shall be aligned with all other maintenance activities being performed on the burner corners during the outage period
- The Contractor shall provide technical support during boiler light-up and unit start-up following completion of the installation to ensure that any defects, adjustments, or commissioning-related issues are identified and rectified timeously. This may include working outside normal working (Shift work) hours and weekends.

3.2.2. Scope of Work

The Contractor shall:

- The Contractor shall assess the plant before decommissioning and ensure that all consideration is made for the impulse line and fittings.
- Decommission and remove all existing burner tilt pneumatic cylinders, auxiliary air (Windbox) damper cylinders, associated positioners, mounting hardware, cabling, tubing, fittings, and related accessories.
- Collect, transport, and store all removed equipment in a secure location designated by the Employer.
- Supply and install new pneumatic cylinders, and positioners at all burner elevations.
- Inspect and verify the condition of all pneumatic impulse lines, air supply lines, fittings, and connections, and rectify any defects identified.
- Verify the integrity and functionality of all mechanical links between the cylinders and dampers prior to commissioning, this is done with the assistance of the mechanical section.
- Perform individual functional testing and commissioning of each cylinder and positioner assembly.

3.2.3. Cold Commissioning

Cold commissioning shall be performed prior to boiler start-up and shall include, but not be limited to, the following:

- Verification of correct installation and alignment of cylinders and positioners.
- Verification of instrument air supply pressure and quality.
- Functional testing of each cylinder to confirm smooth and unrestricted operation throughout its full travel range/ stroke length.
- Verification that all links are correctly connected and adjusted.
- Confirmation that burner tilt mechanisms and auxiliary air dampers achieve full opening and closing positions as required, this task is done with Mechanical section.
- Calibration and verification of position feedback signals from all positioners.
- Recording and documentation of all commissioning results.

3.2.4. Hot Commissioning

Hot commissioning shall be conducted during boiler start-up and operational testing and shall include complete loop testing between the field equipment and the control system.

CONTROLLED DISCLOSURE

When downloaded from the electronic management system, this document is uncontrolled and the responsibility rests with the user to ensure it is the current published version. The copyright belongs to the client and may be reproduced for internal use only. No other form of reproduction, storage, or distribution is permitted without the prior written consent of the client.

The Contractor shall:

- Verify correct operation of all cylinders, positioners, and associated control loops from the control system.
- Confirm correct response of the field equipment to commands issued from the control room.
- Perform functional testing at a minimum of the following operating positions: 0%, 25%, 50%, 75%, and 100%.
- Verify position indication, feedback accuracy at the control room.
- Demonstrate satisfactory operation of the burner tilt and auxiliary air damper control systems under operating conditions.
- Submit commissioning records and final acceptance documentation to the Employer.

The following are all the pneumatic cylinders and positioners to be supplied. Included in the table are stock numbers, material descriptions and quantities (for supply and installation).

Table 1: Contractor supply and installation spares list

Material Descriptions	OEM part No.	Stock no.	Quantity of supply	Quantity of installation
POSITIONER, VALVE: TYPE: PNEUMATIC; SUPPLY PRESSURE: 20.7 - 103.4 KPA; INPUT: 24 V; SUPPL P/N: DS-AV120; MEDIUM INSTRUMENT AIR STROKE RANGE CAM SELECTION 25.4 - 101.6 MM LINEAR ROTARY ANGLE INPUT 90 DEGREES PNEUMATIC CONNECTION 1/4 NPT ON SUPPLY SIGNAL AND OUTPUT CONNECTION; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	AV1.1.2 .000	758281	655	480
POSITIONER, VALVE: TYPE: ELECTROPNEUMATIC; SUPPLY PRESSURE: 20.7-103.4 KPA; INPUT: 4-20 MA; SUPPL P/N: AV1-12100; CONNECTION: NPT1/4; AV1 25.4 60 101.6MM; LINEAR; ROTARY INPUT 90DEG; VENDORS ARE RESPONSIBLE FOR ENSURING THAT THEY ARE PERFORMING AGAINST THE CORRECT DRAWING REVISION NUMBER (IF APPLICABLE).	V18345. 30.10.4 2001(T ZIDC)	174533	60	54
CYLINDER: SIZE: 2.5 X 5 IN; TYPE: PNEUMATIC; MATERIAL: SS 304; SPECIFICATION: 2.5 X 5	LP.10.V .1.0.0.0. 3.0	731510	600	480
CYLINDER: SIZE: 8 X 16 IN; TYPE: PNEUMATIC; MATERIAL: SS 304; SPECIFICATION: 8 X 16; REFERENCE NO: 0.64/29871; 0.64/432; 0.64/29870 AND 064/15123	LP.50. V.4.3.0. 0.1.5	731509	126	120

CONTROLLED DISCLOSURE

3.2.5. Corrosion Protection

- The *contractor* is required to provide the necessary coating required to preserve for storage purposes.

3.2.6. Codes and Standards

The design codes and standards which need to be adhered to are given below.

Governing

- (1) OHS Act - Occupational Health and Safety Act No.85 of 1993
- (2) 240-51544462 - Integrated Demand Management Supplier Contract Quality Requirements Specification
- (3) BS EN 10204:2004 Metallic Products: Types of Inspection Documents

Corrosion protection

- (4) 36-681 Eskom Protective Coating Standard

Configuration management:

- (5) 240-76992014 - Project/Plant specific technical documents and records management work instruction

3.3. Safety

Refer to the SHEQ Policy statement 32-727 and the OHAS 18001

Eskom Safety and Health standards, specifications, directives and practices shall apply. The following legislations are applicable:

The contractor shall comply with the health and safety legislation, and Eskom SHE standards/ directives which shall include minimum:

- Occupational Health and Safety Act (No 85 of 1993) – included is the Construction Regulations
- Eskom Construction safety health and environmental procedure 32-136
- Compensation for Occupational Injuries & Diseases Act
- Eskom SHEQ Policy 32-727
- Eskom Life Saving Rules procedure 240- 62196227
- Vehicle and Driver Safety Management procedure 32-93

3.4. Environment

Refer to the SHEQ Policy statement 32-727 and ISO 14001

3.5. Risk management

Risk assessment shall comply with the following documents:

- Kendal Quality Management Manual *1017374

CONTROLLED DISCLOSURE

- Kendal Integrated Risk Management Procedure *1017401

3.6. Product Preservation Requirement

The Contractor is responsible for ensuring that all products are preserved in their appropriate manner as described in their specifications or in Eskom's preservation, shipping and transportation procedures as applicable. The Contractor submits the preservation, shipping and transportation procedures to the Employer for review and acceptance. The Employer may choose to witness the packaging, loading and offloading of the products depending on their criticality, this will be indicated in the intervention points on the QCP / ITP document.

The Contractor also ensures that all storage requirements for products are properly implemented to preserve the products against adverse conditions, deterioration, damages, etc. Storage and preservation procedures for the different products must be submitted to the Employer for review and acceptance. The Employer may request to inspect the stored products at any given point during the storage period of the product.

4. Acceptance

This document has been seen and accepted by:

Full Name and Surname	Designation
Phindile Takane	Engineering Manger
Nonhlanhla Khumalo	Boiler Engineering Manager (Acting)
Lehlogonolo Komane	C&I Snr Technician Engineering
Zanele Maleka	Outage Execution Manager
Thabo Mdhuli	C&I Project Coordinator
Yolisa Motsepe	C&I Engineering Manger

5. Revisions

Date	Rev.	Compiler	Remarks
June 2026	00	R Makhokha	Contract SOW development

6. Development Team

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

- Khutso Chiloane
- Thabo Mdhuli

7. Acknowledgements

- N/A

CONTROLLED DISCLOSURE