

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

Title: **KENDAL P/S U1-6 REPAIR AND REPLACEMENT OF REFRACTORY CONTRACT SOW**

Document Identifier: **1031887**

Alternative Reference Number:

Area of Applicability: **Kendal Power Station**

Functional Area: **Engineering**

Revision: **00**

Total Pages: **11**

Next Review Date:

Disclosure Classification: **Controlled Disclosure**

Compiled by

Functional Responsibility

Authorized by





F. Tshikalange
System Engineer

T. Rasivhetshela
Boiler Engineering Manager

M. Mabizela
Engineering Manager

Date: 20/07/2023

Date: 20/07/2023

Date: 14/08/2023

Content

	Page
1. Introduction.....	3
2. Supporting Clauses	3
2.1 Scope.....	3
2.1.1 Purpose.....	3
2.1.2 Applicability	3
2.1.3 Effective date.....	3
2.2 Normative/Informative References	3
2.2.1 Normative.....	3
2.2.2 Informative.....	3
2.3 Definitions	4
2.4 Abbreviations	5
2.5 Roles and Responsibilities	5
2.5.1 Outage Department.....	5
2.5.2 Engineering Department.....	5
2.5.3 Technical Support Department	6
2.5.4 Inventory Management Department	6
2.5.5 Safety and Environment Department.....	6
2.5.6 Quality and Assurance Department.....	7
2.5.7 Projects Department.....	7
2.5.8 Contractor	7
2.6 Process for Monitoring.....	7
2.7 Related/Supporting Documents.....	7
3. The Contractor's Scope	8
3.1 General Requirements for the <i>Works</i>	8
3.2 Description of the works	8
4. Document Content.....	10
4.1 Records and History Requirements	10
4.2 Quality control Plan	10
4.3 Competence.....	10
4.4 Equipment requirements	10
4.5 Safety.....	10
4.6 Environment	11
4.7 Risk management	11
4.8 Product Preservation Requirement.....	11
5. Acceptance.....	11
6. Revisions.....	11
7. Development Team	11
8. Acknowledgements	11

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

1. Introduction

This document serves to outline requirements for the supply of labour , tools , equipment , consumables , supervision , management , logistics , storage and support services for the removal , repair and replacement of refractory at Kendal Power Station from Unit 1 – 6 for the term of the contract.

2. Supporting Clauses

2.1 Scope

This document outlines the Outage Scope of Work for the Kendal repair and replacement of Refractory.

2.1.1 Purpose

The purpose of this document is to ensure that Kendal Power Station complies with quality management standard with regard to outages, alignment to the Outage philosophy (*1023822) and the User Requirement Specifications.

2.1.2 Applicability

This document shall apply throughout Kendal Power Station's repair and replacement of Refractory.

2.1.3 Effective date

This document is effective from the date of Authorization.

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] ISO 14001: Environmental management Policy
- [3] ISO 7919: Mechanical Vibrations.

2.2.2 Informative

- [4] Engineering Change Management Procedure 240-53114002:

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

- [5] Supplier Contract Quality Requirements Specifications QM-58
- [6] Kendal outage Philosophy *1023822
- [7] Outage Management Procedure. GPM0072
- [8] Outage Management Peer Review Process GPM0028
- [9] Generation Division Project Management Policy 36-667
- [10] Plant Asset Management Directive 36-40
- [11] Generation Project Execution Model and Reference Book (Project Model) Manual 36-155
- [12] Project and Outage Risk Management Guideline 36-300
- [13] Accounting for Property, Plant and Equipment 36-226
- [14] Completion of Power Plant Projects, Take-over from Contractors and Hand-over to the Generation Business Standard 32-365
- [15] Kendal Quality Manual *1017374
- [16] Non-Conformance, Corrective and Preventive Action *1017357
- [17] Integrated Risk Management *1017401
- [18] Control and Approval of Quality Plan *1017482
- [19] Control of Monitoring and Measuring Equipment *1017483
- [20] Personal Protective Equipment Procedure *1019284
- [21] SANS OHAS 18001:2011 Management System *1015807
- [22] Occupational Health and Safety Hazard Identification *1017372
- [23] Welding of High Pressure, Temperature Standard 240-56355225
- [24] Kendal Power Station Competence, Training and Awareness *1017348

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

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

2.4 Abbreviations

Abbreviation	Explanation
DE	Drive End
GO	General overhaul
IR	Interim repairs
ISO	International Standard Organization
NDT	Non Destructive Tests
NDT	Non Destructive Testing
NDE	Non Destructive Examination
RBO	Risk Based Optimisation
URS	User Requirements Specifications
WPS	Welding Process Specification
WPQR	Welding Procedure Qualification Record
QCP	Quality Control Plan
SHEQ	Safety Health Environment & Quality
OHS	Occupational Health & Safety

2.5 Roles and Responsibilities

This document shall apply to all Kendal Power Station outages being Interim and general overhaul. Outages are a station responsibility. Every department plays a pivotal role in making sure that outages are successful and units are returned to service on time, and efficiently Refer to the Kendal Power Station business Organisation Roles and Responsibilities*1017523. Below are the roles and responsibilities of each department:

2.5.1 Outage Department

- Develop optimized outage networks
- Management of contract services provided during outages
- Ensure quality control of activities during outages
- Management of time cost and quality of outages
- Develop Kendal specific outage readiness indicator as per generation outage planning principles
- Submit financial plan spreadsheet

2.5.2 Engineering Department

- Is responsible for the outage philosophy
- Compiles outage scope of work that aligns with outage philosophy

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

- Participate in the outage philosophy review.
- Formulate the contents of the outage philosophy
- Ensuring plant and documents are technically compatible
- Proposing and implementation of modifications
- Assist with the review of quality control plans

2.5.3 Technical Support Department

- The supervision of outage activities to ensure quality and productivity targets are achieved
- The control of spares and consumables
- The development of work instructions and procedures
- The developments of bill of materials
- Technical review of work instructions at pre-determined intervals
- Provision of quality work history
- The notification of all failures not attributed to normal wear and tear and/or frequent/repeated failures of components
- To assist in the investigation of incidents and the root cause analysis
- Monitor spares stock holding

2.5.4 Inventory Management Department

- Maintaining the approved stock levels
- Storage of stock according to approved methods
- Forward planning to ensure stock availability
- Ensure reviewing of stock levels
- Stock accuracy and control
- Stock Optimisation
- Issuing of materials to end users
- Receiving of goods

2.5.5 Safety and Environment Department

- Implementation of SHE systems
- Ensure compliance with OHS Act and putting in place of enforcement mechanism

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

- Regular internal communication at all levels by way of meetings and discussions concerning health and safety
- Identify hazards in different areas and conduct task risk assessments regarding employees acts
- Coordinate and identify SHE training gaps
- Development and implementation of safety policies and procedures
- Report incidents

2.5.6 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 plans

2.5.7 Projects Department

- Implement projects in line with the outage programme
- Management of contract services for the projects
- Ensure quality control of activities during projects
- Management of time cost and quality of projects

2.5.8 Contractor

The responsibilities of the contractor are as per NEC and compliance to the relevant standards.

2.6 Process for Monitoring

Kendal Documentation Centre

2.7 Related/Supporting Documents

N/A

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

3. The Contractor's Scope

3.1 General Requirements for the Works

- 1) Repair and replacement of refractory at Kendal Power Station U1 - 6.

3.2 Description of the works

- 1) The supply of labour , tools , equipment , consumables , supervision , management , logistics , storage and support services for the removal , repair and replacement of refractory at Kendal Power Station from Unit 1 – 6 for the term of the contract

3.2.1. Ducting at 13m level:

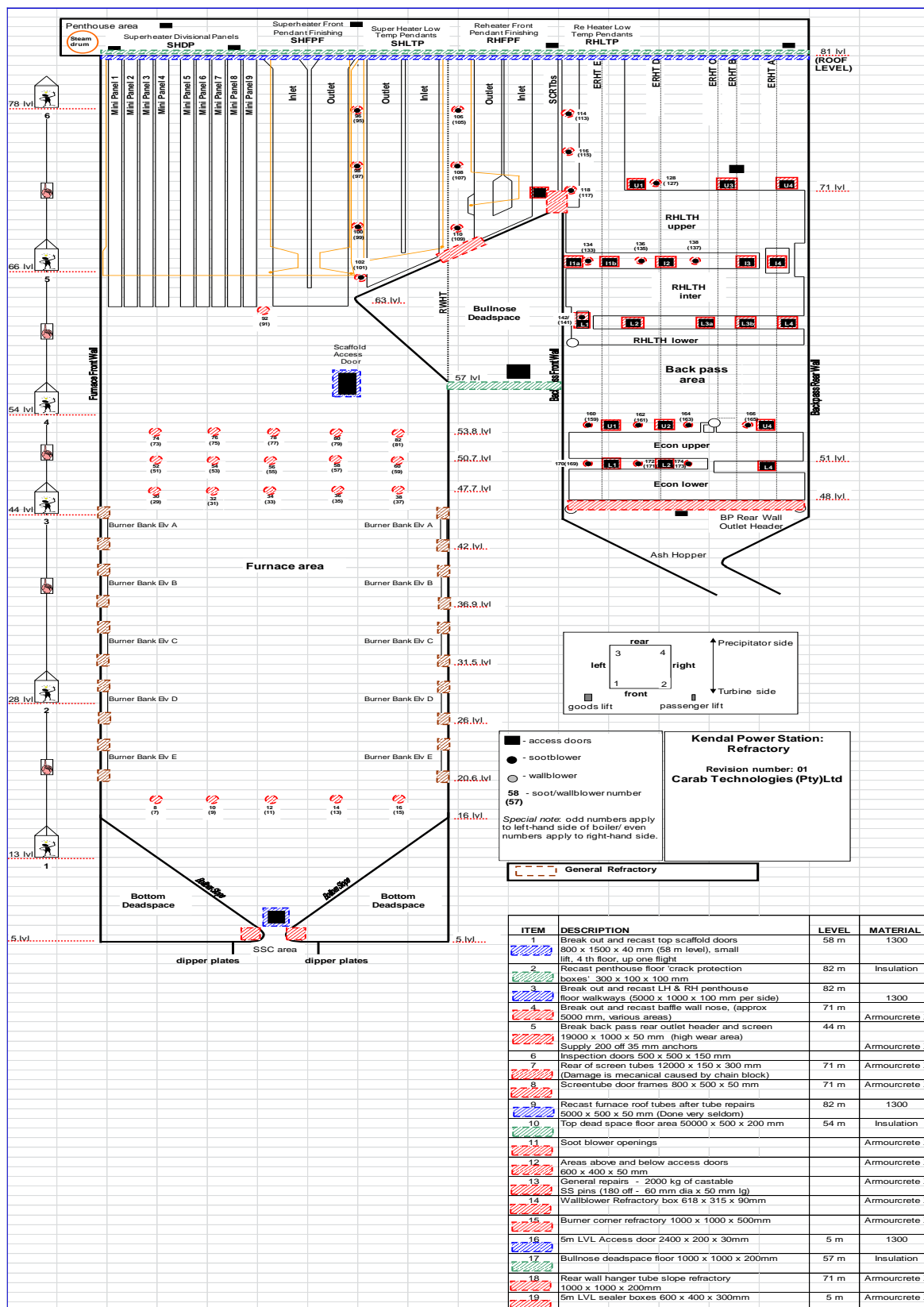
1. Curved Wall
Height: 6m
Width: 1.5m
QTY: 8 curved surface area (6x1.5m)
2. Straight vertical wall
Height: 6m
Width: 1.5m
QTY: 4 vertical wall surface area (6x1.5m)

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

3.2.2. Boiler Pressure Parts:



CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

4. Document Content

4.1 Records and History Requirements

- Outage Inspection reports
- 04 defects
- Recommendations from incident investigations
- Projects Scope (Technical Plan)
- Engineering change requests
- RBO

4.2 Quality control Plan

A quality control package that includes final scope of work, quality control plan, safety files, work execution procedures etc. from the contractor will be send to technical support and engineering from the outage controller for approvals. Refer to Kendal Quality Management Manual *1017374.

4.3 Competence

Refer to Kendal Quality Management Manual *1017374. Section 6.2.2

4.4 Equipment requirements

Refer to Kendal Quality Management Manual *1017374. Section 7.6

4.5 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
- Kendal Safety Risk Management Procedure Manual for Contractors *1015696
- 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
- Eskom Incident Management procedure 32-95
- Vehicle and Driver Safety Management procedure 32-93
- Work at Heights procedure 32-418
- Eskom Vehicle Safety Specifications 32-345

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.

4.6 Environment

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

4.7 Risk management

Risk assessment shall comply with the following documents:

- Kendal Quality Management Manual *1017374
- Kendal Integrated Risk Management Procedure *1017401

4.8 Product Preservation Requirement

Refer to the Kendal Quality Management Manual *1017374, section 7.4.4 and 7.5.5

5. Acceptance

This document has been seen and accepted by:

Name	Designation
Tendani Rasivhetshela	Boiler Engineering Manager
Malibongwe Mabizela	Engineering Manager

6. Revisions

Date	Rev.	Compiler	Remarks
June 2023	00	F Tshikalange	New document

7. Development Team

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

- Funzeani Tshikalange

8. Acknowledgements

N/A

CONTROLLED DISCLOSURE

When downloaded from the document management system, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorized version on the system.

No part of this document may be reproduced without the expressed consent of the copyright holder, Eskom Holdings SOC Ltd, Reg No 2002/015527/30.