

| | | |
|---|-----------------|--------------------|
|  | Strategy | Engineering |
|---|-----------------|--------------------|

Title: **Technical Specification for Ash and sluice line replacement** Unique Identifier: 382-ECM-AABBD0013 9-107

Alternative Reference Number:

Area of Applicability: **Engineering**

Documentation Type: **Strategy**

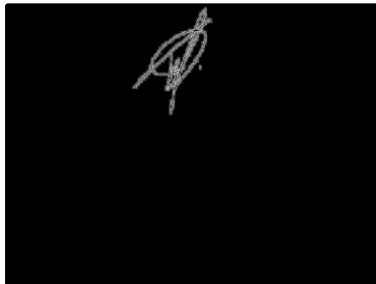
Revision: **0**

Total Pages: **14**

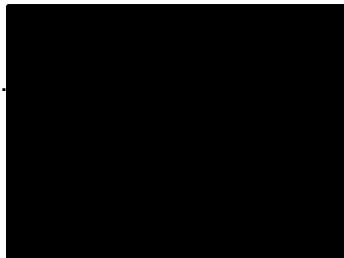
Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

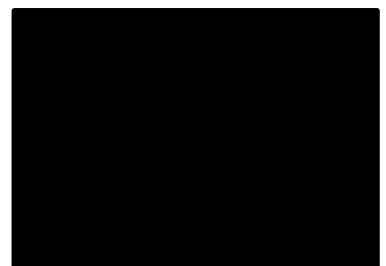
Compiled by



Functional Responsibility



Authorised by



Date: 2022/11/17

Date:2022/11/18.....

Date:2022/11/18..

CONTENTS

| | Page |
|---|-----------|
| 1. INTRODUCTION | 3 |
| 2. SUPPORTING CLAUSES | 3 |
| 2.1 SCOPE | 3 |
| 2.1.1 Purpose | 3 |
| 2.1.2 Applicability | 3 |
| 2.2 NORMATIVE/INFORMATIVE REFERENCES | 3 |
| 2.2.1 Normative | 3 |
| 2.2.2 Informative | 3 |
| 2.3 DEFINITIONS | 4 |
| 2.3.1 Classification | 5 |
| 2.4 ABBREVIATIONS | 5 |
| 2.5 ROLES AND RESPONSIBILITIES | 5 |
| 2.6 PROCESS FOR MONITORING | 5 |
| 2.7 RELATED/SUPPORTING DOCUMENTS | 6 |
| 3. TENDER TECHNICAL EVALUATION STRATEGY | 6 |
| 3.1 TECHNICAL EVALUATION THRESHOLD | 6 |
| 3.2 TET MEMBERS | 6 |
| 3.3 MANDATORY TECHNICAL EVALUATION CRITERIA | 7 |
| 3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA | 8 |
| 3.4.1 Qualitative Technical Evaluation Scoring Criteria | 9 |
| 3.5 TET MEMBER RESPONSIBILITIES | 11 |
| 3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS | 11 |
| 3.6.1 Risks | 11 |
| 3.6.2 Exceptions / Conditions | 12 |
| 4. AUTHORISATION | 13 |
| 5. REVISIONS | 13 |
| 6. DEVELOPMENT TEAM | 13 |
| 7. ACKNOWLEDGEMENTS | 13 |

TABLES

| | |
|---|----|
| Table 1: TET Members | 6 |
| Table 2: Mandatory Technical Evaluation Criteria | 7 |
| Table 3: Qualitative Technical Evaluation Criteria | 8 |
| Table 4: TET Member Responsibilities | 11 |
| Table 5: Acceptable Technical Risks | 11 |
| Table 6: Unacceptable Technical Risks | 11 |
| Table 7: Acceptable Technical Exceptions / Conditions | 12 |
| Table 8: Unacceptable Technical Exceptions / Conditions | 12 |

CONTROLLED DISCLOSURE

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

1. INTRODUCTION

There are ash lines pipes that are in the sluiceways which are not accessible for any maintenance activities and they are covered with ash build up and moisture. They are currently maintained on the philosophy of run to failure, whereas the rest of the ash line pipes are currently maintained by turning the lines 90 degrees every six months. Frequent pipe leaks are being experienced and the latest thickness testing reports indicate that the ash lines are close to the minimum allowable wall thickness. The accessible lines are also exposed to ash build up due to pipe lines which subsequently shorten the pipe life span (quickly get corroded).

Leaks are frequently experienced on the bends including the bend joints (bends that are joined by Johnson couplings). The bends are misaligned on the plinth contours which make it easier for bends to move due to change in momentum. Due to unavailability of drawings for the bends it makes life difficult to accurately fabricate bends with correct radius. As a temporary measure to compensate for the incorrect bend radius, Eskom (Duvha Power Station) ends up gagging all Johnson couplings (short and long barrel) that are on the bends and welding a steel bar across all pipes on the bend to prevent movement. Some of the plinths are damaged and have missing clamps and hold down bolts.

Based on the above mentioned problem statement, there is a great need to replace ash lines sections which poses a leaks risk that can lead to environmental contravention.

2. SUPPORTING CLAUSES

2.1 SCOPE

To dismantle, removing of the existing pipe work and the supply, delivery, and installation of the ash pipes for the following Units 2, 4, 5 & 6. This is based on the thickness testing results that was conducted by Eskom (Duvha Power Station). The concluded quantities for all the lines required are detailed under section 3.1 of this document. Repairing of the existing plinths, supply and delivery of the clamps are also part of this scope of work.

2.1.1 Purpose

The purpose of this document is to describe the minimum requirements for quality control & assurance, supply, delivery, and installation of the ash pipes for the following Units 2, 4, 5 & 6 at Duvha Power Station.

2.1.2 Applicability

This document is to apply to the Duvha Power Station's ash plant.

2.2 NORMATIVE/INFORMATIVE REFERENCES

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

2.2.1 Normative

[1] 32-727 - Eskom Safety, Health, Environment and Quality (SHEQ) Policy

CONTROLLED DISCLOSURE

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

- [2] Occupational Health and Safety Act No. 85 of 1993,
- [3] QM58 - Suppliers contract quality requirements specification
- [4] 240-106628253 - Standard for Welding Requirements on Eskom Plant
- [5] 240-83539994 – Standard for non-destructive test for Eskom plants
- [6] ISO 9001 Quality Management Systems.
- [7] Construction Regulations, 2014
- [8] SANS 1200 Standard Specification For Civil Engineering Construction

These documents are indispensable for the application of this document, i.e. documents to be used together with this document.

2.2.2 Informative

- [1] 240-53665024: Engineering Quality Manual
- [2] 240-53114186: Document and record Management Procedure
- [3] ISO 9001 Quality Management Systems.

2.3 DEFINITIONS

| Definition | Description |
|-------------------|---|
| Acceptance | The <i>Employer</i> accept the condition or design but does not take responsibility from the Contractor |
| Approval | Written agreement or authorization by <i>Employer</i> . All requests for approval must be submitted in writing and any proposed deviation from specified requirements must be fully justified and agreed by <i>Employer</i> . |
| <i>Contractor</i> | Refers to the corporation appointed to perform the engineering, procurement, and construction Works required for the project. |
| <i>Employer</i> | Refers to Eskom Holdings State Owned Company |
| Interface | Interface in these document means either to hard wired or software interaction between the <i>Contractors</i> and/or other Works |
| Owners Engineer | Owners Engineer - When Eskom acts as the Owners Engineer on a project/package/plant/System/asset, the reviewer(s) are to review the design documentation issued by the Design Authority to ensure that: the design satisfies the stakeholder requirements (i.e. validation of design deliverables against stakeholder requirements). General technical oversight is provided over the design. |
| Specification | The document/s forming part of the contract in which the methods of executing the various items of work to be done is described, as well as the nature and quality of the materials to be supplied and it includes technical schedules and drawings attached thereto as well as all samples and patterns |
| System | A set of things working together as parts of a mechanism or network in an organised manner or method such that the requirements of the System are achieved. |
| The Client | The end user will be Eskom who will be represented by Duvha Power Station throughout the duration of the Project. |

CONTROLLED DISCLOSURE

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

2.3.1 Classification

- a. **Public domain:** published in any public forum without constraints (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

| Abbreviation | Description |
|--------------|--|
| SANS | South African National Standards |
| SABS | South African Bureau Standards |
| SE | System Engineer |
| SHEQ | Eskom Safety, Health, Environment and Quality |
| QA | Quality Assurance |
| QM | Quality Manual |
| QC | Quality Control |
| NDT | Non-destructive test |
| IWE | International Welding Engineer registered with IIW |
| IIW | International Institute of Welding |
| IWP | International Welding Practitioner registered with IIW |
| IWS | International Welding Specialist registered with IIW |
| IWT | International Welding Technologist registered with IIW |

2.5 ROLES AND RESPONSIBILITIES

- Compiler : The document compiler is responsible for ensuring that this document is up-to-date and that this document is not a duplication of an existing documentation, regarding the document's objectives and content.
- Functional Responsibility : The Functional Responsible Person is to determine if the document is fit for purpose, before the document is submitted for authorisation.
- Authoriser : The document authoriser is a duly delegated person with the responsibility to review the document for alignment to business strategy, policy, objectives and requirements. He/she are to authorise the release and application of the document.

2.6 PROCESS FOR MONITORING

The primary process for monitoring will be governed by the Design Review Procedure (240-53113685), this entails assuring that the design achieves the requirements set out in this document. Any changes to this document will be performed as per Project Engineering Change Management Procedure (240-53114026).

CONTROLLED DISCLOSURE

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

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 TECHNICAL EVALUATION THRESHOLD

The minimum weighted final score (threshold) required for a tender to be considered from a technical perspective is 70%.

| SCORE | PERCENTAGE (%) | DESCRIPTION |
|-------|----------------|--|
| 5 | 100 | COMPLIANT <ul style="list-style-type: none">Meet the technical requirement(s) AND,No foreseen technical risk(s) in meeting technical requirements |
| 4 | 80 | COMPLIANT WITH ASSOCIATED QUALIFICATIONS <ul style="list-style-type: none">Meet the technical requirement(s) with,Acceptable technical risks AND/OR;Acceptable exceptions AND/OR;Acceptable conditions |
| 2 | 40 | NON-COMPLIANT <ul style="list-style-type: none">Does not meet the technical requirement(s) AND/OR Unacceptable technical risk(s) AND/OR;Unacceptable exceptions AND/OR;Unacceptable conditions |
| 0 | 0 | TOTALLY DEFICIENT/NON-RESPONSIVE |

3.2 TET MEMBERS

Table 1: TET Members

| TET number | TET Member Name | Designation |
|------------|-----------------|-------------|
| TET 1 | | |
| TET 2 | | |

CONTROLLED DISCLOSURE

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

3.3 MANADATORY TECHNICAL EVALUATION CRITERIA

Table 2: Mandatory Technical Evaluation Criteria

| | Mandatory Technical Criteria Description | Reference to Technical Specification / Tender Returnable | Motivation for use of Criteria |
|----|--|--|--------------------------------|
| 1. | N/a | N/a | N/a |

3.4 QUALITATIVE TECHNICAL EVALUATION CRITERIA

Table 3: Qualitative Technical Evaluation Criteria

| | Qualitative Technical Criteria Description | | Reference to Technical Specification / Tender Returnable | Criteria Weighting (%) | Criteria Sub Weighting (%) |
|-----------|--|---|--|------------------------|----------------------------|
| 1. | Mechanical Engineering Criteria | | | | |
| | 1.1 | SITE ORGANOGRAM Proposed organogram of key personnel for this project which must include the following skill: <ul style="list-style-type: none"> Signed site organogram showing project specific structure Supervisor (Cv and qualification to be provided as per the 3.4.1 of this criteria) Safety officer (Cv and qualification to be provided as per the 3.4.1 of this criteria) Artisans x 4 (Cv and qualification to be provided as per the 3.4.1 of this criteria) Quality assurance personnel / technician (Cv and qualification to be provided as per the 3.4.1 of this criteria) | CV and certificates | 100 | 55 |
| | 1.2 | QUALITY MANAGEMENT SYSTEM Company to have their own quality control management system detailing the critical task in dismantling, assembling and safe handling of steel piping | A detailed quality assurance plan/document | | 15 |
| | 1.3 | COMPLETED SIMILAR PROJECTS This covers the experience of the company. The company must have completed at-least 3 project to ensure competency because of the criticality of the scope. The previous completed projects must entail manufacturing, installing and commissioning of pipe lines. A completion certificates or reference letter must be submitted which reflects Client name, <ul style="list-style-type: none"> Order number | Completion Certificate | | 30 |

| | | | | | |
|--|--|--|--|-------------------|--|
| | | <ul style="list-style-type: none"> • Project description, (details scope of work if description not clear) • Project cost, • Project start & end date • Project location • Name, designation and contact number of reference person • Letter head signed <p>In an event where the completion certificated does not have all the above details, the supplier can attached any other supporting document that might contain the information to support the completion certificate (e.g. signed contract or detailed orders)</p> | | | |
| | | | | TOTAL: 100 | |

3.4.1 Qualitative Technical Evaluation Scoring Criteria

| SUPERVISOR | Points | Score |
|---|---------------|--------------|
| Mechanical Trade Test | | |
| No formal trade test | 0 | 5 |
| Mechanical Diploma/Supervisory training with Trade Test from accredited institution | 5 | |
| Working years on mechanical works post trade test qualification | | |
| 2 year | 2 | 15 |
| 2 – 3years | 4 | |
| 3 – 5 years | 5 | |
| 4 x ARTISANS | Points | Score |
| Mechanical Trade Test | | |
| No formal trade test | 0 | 2.5 |
| Trade Test from accredited institution | 5 | |

| | | |
|---|---|-----|
| Working years on maintaining pumps post trade test qualification | | |
| 2 year | 2 | 2.5 |
| 2 – 3 years | 4 | |
| 3 – 5 years | 5 | |

| | | |
|--|---|--------------|
| QUALITY ASSURANCE PERSONNEL / TECHNICIAN | | Score |
| No DIPLOMA in Mechanical Engineering | 0 | 2.5 |
| DIPLOMA in Mechanical Engineering from accredited institution | 5 | |
| Working years post Diploma qualification | | |
| 1 year | 2 | 2.5 |
| 1 – 2 years | 4 | |
| 2 – 3 years | 5 | |
| SAFETY OFFICER | | |
| No SAMTRAC | 0 | 2.5 |
| SAMTRAC from accredited institution | 5 | |
| Working years post SAMTRAC qualification | | |
| 1 year | 2 | 2.5 |
| 1 > EXP ≥ 2 years | 4 | |
| 2 > EXP ≥ 3 years | 5 | |
| QUALITY MANAGEMENT SYSTEM | | Score |
| No quality management system or plan submitted | 0 | 15 |
| Quality management system or plan submitted without detailing the critical task and method statement | 2 | |
| Quality management system or plan submitted | 5 | |

| | | |
|--|--|--|
| with detailed critical task and method statement of manufacturing, installation, and commissioning of piping | | |
|--|--|--|

| COMPLETED SIMILAR PROJECTS | | Score |
|----------------------------|---|-------|
| Number of projects = 0 | 0 | 30 |
| Number of projects = 1 | 2 | |
| Number of projects = 2 | 4 | |
| Number of projects ≥ 3 | 5 | |

3.5 TET MEMBER RESPONSIBILITIES

Table 4: TET Member Responsibilities

| Mandatory Criteria Number | TET 1 | TET 2 | TET 3 | TET 4 | TET 5 | TET 6 | TET 7 | TET n |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Qualitative Criteria Number | TET 1 | TET 2 | TET 3 | TET 4 | TET 5 | TET 6 | TET 7 | TET n |
| | X | X | N/A | N/A | N/A | N/A | N/A | N/A |

3.6 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.6.1 Risks

Table 5: Acceptable Technical Risks

| Risk | Description |
|------|-------------|
| 1. | none |

Table 6: Unacceptable Technical Risks

| Risk | Description |
|------|-------------|
| 1. | none |

3.6.2 Exceptions / Conditions

Table 7: Acceptable Technical Exceptions / Conditions

| Risk | Description |
|------|-------------|
| 1. | |

Table 8: Unacceptable Technical Exceptions / Conditions

| Risk | Description |
|------|-------------|
| 1. | none |

4. AUTHORISATION

This document has been seen and accepted by:

| Name | Designation | Signature |
|------|-------------|-----------|
| | | |

5. REVISIONS

| Date | Rev. | Compiler | Remarks |
|---------------|------|----------|----------------|
| November 2022 | 0 | | Final document |

6. DEVELOPMENT TEAM

N/A

7. ACKNOWLEDGEMENTS

N/A

CONTROLLED DISCLOSURE

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