

Title: **Scope of work for the maintenance of the Tutuka ESP for 60 months**

Unique Identifier: 15ENG GEN-3150

Alternative Reference Number: N/A

Area of Applicability: **Tutuka Power Station**

Functional Area: **Engineering**

Revision: **3**

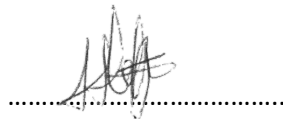
Total Pages: **6**

Next Review Date: **September 2030**

Disclosure **CONTROLLED DISCLOSURE**

Classification:

Compiled by



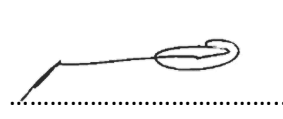
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CONTROLLED DISCLOSURE

1 INTRODUCTION

Emission legislation as instructed by the Department of Environmental Affairs (DEA) to the *Employer's* Power Stations (Air Quality Act, 2004 [Act 39/2004], Notice 248; 31 March 2010: Minimum Emission Standards) implies that by 2015 all existing Power Stations should conform to a 100 mg/Nm³ particulate emission level. It further states that all operating plant shall conform to the new plant particulate emission limit of 50 mg/Nm³ by 2020.

Due to this stringent licence conditions, Tutuka Power station needs to maintain the ESP in order to meet the license requirements and also avoid unnecessary load losses.

1.1 SCOPE

The scope covers all 6 units at Tutuka Power station which is the maintenance of the ESP during outage and normal maintenance. The scope of work entails inspections of the ESP plant, providing inspection reports, repair and/or replacement of the components within the ESP plant and commissioning during maintenance and outages (Planned and unplanned outages) at Tutuka Power Station for a period of 60 months (5 years). The maintenance scope of work also includes carrying out of scheduled- based maintenance (PM's) with the explicit objective of preventing functional plant and/or component failures. The contract duration will be for 60 months (5 years) covering Units 1 to 6 ESPs.

1.1.1 Purpose

The purpose of this report is to give a guideline for the procurement of service in the maintenance of the ESP for Tutuka Power Station. The purpose of this report is to give a guideline for the procurement of service in the maintenance of the ESP for Tutuka Power Station. This Guideline entails a comprehensive Scope of Work for execution in the Flue

Gas Cleaning Plant i.e. Electrostatic Precipitators (ESPs) and which if executed as per the specification and requirements stipulated herein will keep the utility operating optimally, beyond or within the performance required to maintain the Particulate Emissions below the limit of 100 mg/Nm³.

1.1.2 Applicability

This document is applicable to Tutuka Power Station only.

1.1.3 Effective Date

When the document is authorised.

1.2 NORMATIVE/INFORMATIVE REFERENCES

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

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1.2.1 Normative

- 1] ISO 9001 Quality Management Systems.
- [2] OHSAS 18001 Health & Safety Management Standard.
- [3] ISO 31000 Risk Management Standard.
- [4] Eskom Integrated Risk Management Standard.
- [5] ISO 14001 Environmental Standard.
- [6] 240-105658000 Standard for Welding Requirements on Eskom Plant
- [7] QM58 - Eskom Supplier Contract Quality Requirements Specification

1.2.2 Informative

- [1] 474-59: Internal Audit Procedure
- [2] 32 -1034: Eskom Procurement Policy and Supply chain policy
- [3] 240-168966152: Generation Tender Technical Evaluation Procedure

1.3 DEFINITIONS

1.3.1 Classification

Controlled Disclosure: *Controlled Disclosure to external parties (either enforced by law, or discretionary).*

1.4 ABBREVIATIONS

Abbreviation	Description
AEL	Atmospheric Emission Licence
CE	Collecting Electrode
DE	Discharge Electrode
ESP	Electrostatic Precipitator
ISO	International organization for standardization
MPI	Magnetic Particle Inspection
NDT/E	Non Destructive Testing/Examination
OEM	Original Equipment Manufacturer
OSH	Occupational Safety and Health
NCR	Non-Compliance Report
QCP	Quality Control Plan
QIP	Quality Inspection Plant
SOW	Scope of Work

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Abbreviation	Description
WPQR	Welder Performance Qualification Record
WPS	Welding Specification Procedure

1.5 APPLICABLE PLANT

This SOW is applicable to electrostatic precipitator plant only.

1.6 SCOPE DETAILS

1.6.1 Manpower requirements

1.6.1.1 Routine Maintenance: Core Crew

For routine plant maintenance, the Contractor shall provide the following trained, qualified, and competent key resources:

1 x Supervisor

1 x Mechanical Artisan

1.6.1.2 Ad-hoc Resources for Opportunity/ Breakdown Maintenance

3 X Boilermakers

4 X Welders (B-Class)

16 X Semi-skilled

1 X Safety Officer

1 X Electrician

1 X Planner

1.6.1.3 Maintenance During Outages

As and when required during outages, the Contractor shall provide the following trained, qualified, and competent key resources:

1 x Supervisor.

4 x Artisan Fitters

4 x Boiler Maker.

4 x Welder.

22 x Semi-skilled employees (NB: Only for ESP internal washing when required).

1 x Safety and environmental officer.

1 x Planner.

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1.6.2 Technical requirements (scope)

The scope will include inspections, repairs/refurbish and or replacement to the following:

1. Distribution screens and guide vanes
2. Casing
3. Access doors
4. Penthouse/Insulator Cubicle
5. Poking rods / Agitating chains
7. Collector Electrodes (CE)
8. Collector electrode Rapper bars
9. Collector electrode Rapper Hammers and systems
10. Collector electrode rapper shaft and shaft bearing
11. Collector electrode rapper gearbox
12. Discharge Electrodes (DE)
13. Discharge electrodes Rapper Hammers and systems
14. Discharge electrodes rapper shaft and shaft bearing
15. Discharge electrodes rapper gearbox
16. Discharge electrodes rapper Cam release unit
17. Discharge electrodes Rapper Anvils
18. Hopper Slide Gates
19. ESP internal washing

2 TRANSPORTATION

Not applicable.

3 DEVELOPMENT TEAM

N/A

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