

	Scope of Work	Generation
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Title: Supply & Delivery of MAGNET ELCTRO:380V;900GS;1500 KW;41 A as and when required	Unique Identifier:	15ENG GEN- 3082
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Compiled by



**Snr Electrical Engineer
Tutuka Power Station**

Date: 01/03/2025

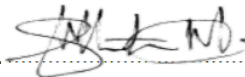
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Date: 22/04/2025

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1. INTRODUCTION

Tutuka Power Station coal plant has experienced multiple defects related to the coal conveyor belts responsible for transporting coal into the station. Recently, a belt tear was identified, and a foreign metallic object was discovered, which could have caused the belt failure. The failure was exacerbated by the inoperative electromagnets, which, if functioning, could have prevented the premature failure. Therefore, it is necessary to restore the functionality of the electromagnets to facilitate the removal of foreign debris originating from the coal stockyard and mine supplies. This restoration will help mitigate the risk of unplanned premature failures within the conveyor system. Each conveyor system is equipped with a series of electromechanical magnets that prevent metallic materials from passing through to the boiler bunkers. However, Tutuka is unable to guarantee that all coal supplied by the mine is free from foreign metallic components. Hence the deployment of electromagnets strategically.

1.1.1 SCOPE

The scope of the works is to outline the minimum requirements for the supply and deliver of six electromechanical magnets

1.1.2 PURPOSE

The purpose of the report is to outline the basic requirements required to supply the correct item to Tutuka Power Station.

1.1.3 APPLICABILITY

This document is applicable to Tutuka power station, and all other stakeholders involved on the scope of works.

2. NORMATIVE/INFORMATIVE REFERENCES

2.1.1 Normative

- | | | |
|-----|---------------|--|
| [1] | 240-50317699 | Manage Technical Queries Procedure |
| [2] | 240-53113685 | Design Review Procedure. |
| [3] | ISO 9001 | Quality Management Systems |
| [4] | MNT QIP F 194 | Tutuka Power Station Quality Control Plan |
| [5] | 240-55864553 | Magnetic Separators and Metal Detectors standard |
| [6] | 240-48929482 | Tender Technical Evaluation Procedure |

2.1.2 Informative

- [1] BS 970-1:1996, Specification for wrought steels for mechanical and allied engineering purposes –Part 1: General inspection and testing procedures and specific requirements for carbon, carbon-manganese, alloy and stainless steels.
- [2] BS 1486-1:1959, Lubricating nipples — Part 1: Lubricating nipples and adaptors for use on machinery and vehicles. Amendment No. 1: 1996.

[3] BS 6704:1996, Code of practice for selection, installation and maintenance of intrinsically safe electrical equipment in coal mines. SABS IEC 60034-1: 2000, Rotating electrical machines — Part 1: Specification for rating and performance.

[4] SABS IEC 60034: (2001), Rotating electrical machines (22 parts).

[5] SABS 1222:1997, Enclosures for electrical equipment classified by IP code.GGSS 0405:Rev. 0, Specification for belt conveyor systems.

[6] GGSS 0406:Rev. 0, Specification for belt conveyor mechanical components. GGSS 0407:Rev. 0, Specification for belt conveyor structural steelwork and welding. GGSS 0408:Rev. 0, Specification for the erection of belt conveyor mechanicals. NWS 1800 Rev. 2, Specification for corrosion protection for mechanical items of plant.

[7] The Eskom NEC Works Contract - 1 st Edition, Rev 2 September 1994

2.1.3 Drawings

[1] 0.61_2214 Rev_2 , Mechani meg type cross conveyor electro magnet

2.1.4 DEFINITIONS

Definition	Description
LV	Low Voltage
SHEQ	Safety, Health , Environment and Quality
EMD	Electrical Maintenance department

2.1.5 Disclosure Classification

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

2.1.6 ABBREVIATIONS

Abbreviation	Description
EMD	Electrical Maintenance Department
ISO	International Standards Organization
N/A	Not Applicable
OHSA	Occupational Health and Safety Act
PPE	Personal Protective Equipment
PT&M	Performance, Test and Maintain
SANS	South African National Standard

2.1.7 ROLES AND RESPONSIBILITIES

N/A

3. SCOPE OF WORK

Supply and delivery of electromagnet to Tutuka Power Station as per the description below and attached drawing on Appendix.

Description of item:

Specification

Magnet, electro: potential: 380 v; strength:900 gs; dimensions: wd 1.83 x lg 2.8 x ht 1m; power: 1500 kw; current: 41 a; magnetic separators: overall mass: 11500kg; maximum mass of largest component: 90000; overall dimensions: lg 2800 x wd 1830 x ht 1050mm; transformer type: 3ph; transformer oil immersed: yes; rectifier type: hexaphase diode bridge; magnet details: magnet dc power consumption kw (hot): 9800 watt; (cold):1400watt; max ac power consumption: 15000kw;collecting system: reduction gear unit: direct shaft mounted; belt drive motor size:7.5kw (380v); belt description: 12mm c/w 8slats; belt class and width: 315/3 ply wd1500mm; belt cover thickness: 5mm top; 1.6mm bottom; pulleys type and locking device: seamless pipe/bikon hubs. Control panel/transformer-rectifier/psu set:

Magnet should be interchangeable within the units and to conform to the engineering drawing attached on Appendix. Compliance to applicable SANS standards for electromagnetic equipment.

4. ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
	Snr Electrical Engineer
	Electrical Engineering Manager

5. REVISIONS

Date	Rev.	Compiler	Remarks
2021	0		New Document
2025	1		Revision for tender

8. DEVELOPMENT TEAM

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

9. APPENDIX A

KW;41 A as and when required

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