Eskom	Specification	Tutuka Power Station Engineering

Title: **Technical Specification for The Design, Manufacture, Testing and Supplier, deliver of Medium Voltage Induction to Tutuka Power Stations, for an once off purchase.**

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Compiled by	Functional Responsibility	Authorised by
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TABLES

1. INTRODUCTION

Tutuka power station is in dire need of procuring various Medium Voltage (MV) Motors. The MV motors which are going to be replace have more than 25 years of operation of which there have exceeded their design life of 20-25 years. So, there is an urgent need of procuring new motors due to the current motor's having high premature failures during operation and high maintenance cost. The required MV motors are used in critical system such as the conveyor system and electrical compressor system.

This document presents the technical specification for the design, manufacture, testing and installation witnessing of new Medium Voltage (MV) Induction Motors for Tutuka Power Stations. This is a once off purchase of MV Motor for Tutaka Power Station.

2. SUPPORTING CLAUSES

2.1 SCOPE

The scope for this contract is for the Contractor to Design, Manufacture, and test and deliver the following MV motors:

1.Oversilo Conveyor	525kW	4pole 3 300V	4. Ash Extendible/CPP 315KW 4pole 3 300V
2.DCW Motor	215kW	6pole 3 300V	5. Electric Compressor 350kW 3pole 3 300V
3.Overland Conveyor	300kW	4pole 3 300V	

2.1.1 Purpose

The purpose of this technical specification is to define the scope and technical requirements for procuring new MV Motors for Tutuka Power Stations.

2.1.2 Applicability

This document applies to Tutuka Power Stations that require new MV motors.

2.1.3 Effective Date

When the document is authorised

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] 240-50237155: New MV Motor Procurement Standard (Rev. 4)

[2] 240-54783039: New MV Motor Technical Schedule A&B Template (Rev. 3)

[3] 240-97049386: New MV Synchronous Motor Procurement Standard (Rev.1)

2.2.2 Informative

[4] N/A

2.3 DEFINITIONS

None

2.3.1 Disclosure Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
BFP	Boiler Feed Pump
CEP	Condensate Extraction Pump
CW	Cooling Water
FD	Forced Draught
FGD	*Flue-Gas Desulphurisation*
ID	Induced Draught
MCW	Main Cooling Water
MV	Medium Voltage
PA	Primary Air
QCP	Quality Control Plan

2.5 ROLES AND RESPONSIBILITIES

Compiler: The document compiler is responsible for ensuring that this document is up-to-date and that is not a duplication of an existing documentation, with regards to objectives and content.

Functional Responsibility: The Functional Responsible Person shall 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 shall authorise the release application of the document.

2.6 PROCESS FOR MONITORING

N/A

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

3. TECHNICAL REQUIREMENTS

3.1 OVERVIEW AND PURPOSE OF THE GOODS AND SERVICES

The technical requirements are for the Design, Manufacture, Testing and Installation witnessing of new Induction for Tutuka Power Stations as listed in Table 1 according to the Eskom standard 240-50237155 Rev-4 for Induction motors. The listed motors are a direct replacement for existing motors in Tutuka Power Station and must be mechanically and electrically interchangeable. The Supplier shall provide skilled labour, engineering knowledge and management experienced in fulfilling the requirements for such electric machinery.

The technical, quality and workmanship requirements are described according to the Eskom standard 240-50237155 Rev-4 for Induction motors provided by Eskom and in quality control procedures (QCPs) provided by the Supplier and accepted by Eskom before work is conducted.

Table 1: MV Motor List

Power Station	Item Ref. No	Application Description (Driven Load)	Power [kW]	Speed [POLE]	Volts [V]	Total Quantity	Material Numbers
						30	
	1	Oversilo Conveyor	525	4	3 300	6	179030
	2	DCW Motor	215	6	3 300	2	140719
	3	Overland Conveyor	300	4	3 300	2	179080
	4	Ash Extendible/CPP	315	4	3 300	4	179361
	5	Electric Compressor	350	3	3 300	4	249410

3.2 SPECIFICATION AND DESCRIPTION OF THE GOODS

The technical requirements are for the Supplier to design, manufacture, test and witness installation of new Induction motors listed in Table 1 for Tutuka Eskom End-users according to the Eskom standard 240-50237155 Rev-4 for Induction motors.

3.3 PROCEDURE FOR SUBMISSION AND ACCEPTANCE OF SUPPLIER'S DESIGN

The Supplier shall provide outline drawings, technical schedule B, performance and protection curves, Interchangeability report, QCPs and other design information stated in Eskom standard 240-50237155 for New Induction motors Section 3.3.3

Eskom Engineering shall conduct technical evaluation during tender phase and detail design freeze before manufacturing to ensure technical assurance. The supplier shall visit the site to confirm interchangeability and provide report before design freeze acceptance.

3.4 OTHER REQUIREMENTS OF THE SUPPLIER'S DESIGN

Other requirements shall be in accordance with the Eskom standard 240-50237155 Rev-4 for Induction motors.

3.5 USE OF SUPPLIER'S DESIGN

Eskom shall use the supplied motors for driving applications listed in Table 1.

3.6 MANUFACTURE & FABRICATION

Manufacturing shall only commence after Tutuka power station engineering has accepted the detail design and QCPs/ITPs. The manufacturing shall be done in accordance with the design and construction requirements stated in the Eskom standard 240-50237155 for New Induction motor Section 3.4.

Eskom Engineering shall conduct manufacturing inspection were necessary as part of technical assurance during manufacturing.

3.7 FACTORY ACCEPTANCE TESTING (FAT)

The motors shall be tested in accordance with the testing requirements stated in the Eskom standard 240-50237155 for New Induction motors Section 3.5.

Performance/Type test shall also be conducted and witnessed per motor design to validate the design and manufacturing process. Each motor shall have routine test conducted and witnessed before dispatched to site. Final dispatch inspection shall be conducted by power station personnel. New motors shall not be accepted on site without manufacturing and testing documents.

Motor delivery to site shall be as defined in the contract.

3.8 OTHER TESTS AND INSPECTIONS AND COMMISSIONING IN PLACE OF USE

Requirements for installation and commissioning at Site shall be conducted by Eskom in accordance with the Eskom standard 240-50237155 Rev-4 for Induction motors, Commissioning Work Instruction 240-100457684 and other site-specific procedures. The Supplier is required to witness Site installation and commissioning as requested by Eskom.

3.9 OPERATING MANUALS AND MAINTENANCE SCHEDULES

Requirements for operating manuals and maintenance shall be in accordance with the Eskom standard 240-50237155 Rev-4 for Induction motors.

3.10 DOCUMENTATION CONTROL

The final design documents, manufacturing certificates, testing certificates, operating and maintenance manuals shall be delivered with motors in accordance with the Eskom standard 240-50237155 for New Induction motors Section 3.3.

In addition to General Documentation requirements in 240-50237155 Rev-4 and 240-97049386 Rev-1, all documents, manuals, drawings are to have the serial number of the relevant motor, the Power Station name and description as either on the price list or revised during task order execution.

All documents, manuals and drawings are to be provided in the required number of hard copies per motor. An electronic copy shall be available with the drawings, manuals and documents in PDF format.

3.11 LIST OF DRAWINGS

Eskom shall provide outline drawings and Technical Schedule A, and where available torque-speed curves as stated in the Eskom standard 240-50237155 for New Induction motors Section 3.3.2.

The outline drawings, technical schedules and other supporting documents shall be issued in the Technical Enquiry Folder.

4. ACCEPTANCE

This document has been seen and accepted by:

Name	Designation
Lele Masote	Manager Engineering -Tutuka Power Station
Sandile Madonsela	Systems Engineer – Tutuka Power Station
Ryan Hector	Electrical Engineering Manager -Tutuka Power Station

5. REVISIONS

Date	Rev.	Compiler	Remarks
Much 2025	1	Sandile Madonsela	Final Document for Authorisation and Publication

6. DEVELOPMENT TEAM

The following people participated in the development of this document:

- Sandile Madonsela

7. ACKNOWLEDGEMENTS

- None