Eskom National Transmission Company South Africa ™	**Scope of Work**	**NTCSA**

Title: **Inspection, testing and maintenance of lifting equipment in the Central Grid**

Document Identifier: **559-54930475**

Alternative Reference Number:

Area of Applicability: **Central Grid**

Functional Area: **Central Grid**

Revision: 0

Total Pages: 8

Next Review Date:

Disclosure Classification: **Controlled Disclosure**

Compiled by	**Reviewed by**	**Authorized by**
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Date: 17 June 2025	Date: 17 June 2025	Date: 19/06/2025

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1. Introduction

Central Grid has substations and worksite with lifting equipment that are used in the lifting of heavy loads during maintenance or other operational activities. The safe operation and upkeep of the equipment is important to ensure safety of personnel, equipment as well as complying with statutory requirements. This documents outlines the requirements and scope of work for the inspection, testing and maintenance of the equipment at the various site.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of the document is to detail the scope of work for the maintenance requirements of the lifting equipment in the Central Grid on scheduled basis to comply with statutory requirements and maintain safe operation of the equipement.

2.1.2 Applicability

This document shall apply in National Transmission Company South Africa SOC Ltd Reg No 2021/539129/30's Central Grid substations and worksites where there is lifting equipment.

2.1.3 Effective date

The document will be effective from approval to initiate the establishment of the 5 year maintenance contract and valid for the duration of the contract.

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] Occupational Health and Safety (OHS Act 85 of 1993) reference to Driven Machinery Regulation 18 – Lifting Machines and Lifting Tackle

[3] South African National Standards (SANS) 1599

2.2.2 Informative

[1] SANS 1599 – 2:2019 Power Driven Mobile Cranes

[2] SANS 4309:2017 – Cranes – Wires ropes : Care and maintenance, and discard

[3] SANS 4310:2002 – Cranes : Test code and procedures

[4] SANS 10375: The inspection, testing and examination of overhead cranes

[5] SANS 19: The inspection, testing and examination of mobile cranes

2.3 Definitions.

- **Safe Working Load**: maximum mass load lifting equipment can handle without failing
- **Lifting machine**: power driver machine designed and constructed to raising or lowering load or moving it in suspension
- **Lifting Machinery Entity**: legal entity approved and registered by Chief inspector in terms of Reg 19 of Driven Machinery Regulations
- **Lifting Machinery Inspector**: personnel employed by Lifting Machinery Entity and registered by Engineering Council of South Africa in terms of Engineering Profession Act,2000
- **Lifting tackle**: chains slings, wire rope slings, woven webbing slings, master links, hooks, shackles and swivels, eye bolts, lifting or spreader beams and lifting clamps to attach a load to lifting machine

2.4 Abbreviations

Abbreviation	Explanation
SWL	Safe Working Load
LMI	Lifting Machinery Inspector
LME	Lifting Machinery Entity
SANS	South Africa National Standards
PM	Preventative Maintenance

2.5 Roles and Responsibilities

The roles and responsibilities will be of NTCSA appointed representative to manage and oversee the contractor who will execute the scope of work according to the terms of this document and contract of work. The Client will provide access to sites with equipment and additional information to the Contractor where necessary during contracting phase and during contract period. The contractor will manage the work and labour under their care by providing all necessary logistics including but not limited to traveling and accommodation, supply and delivery of material and spares, training and competency of labour resources who will execute the work as required in the regulation referenced. Contractor to supply all equipment, tools, material required to do inspection, servicing/maintenance and testing of the lifting equipment.

2.6 Process for Monitoring

The contractor shall follow the guidelines and requirements in the Occupational Health and Safety (OHS Act 85 of 1993) with regards to Driven Machinery Regulations section 18 to execute the scope of work and issue reports for all relevant work carried out. The contractor shall execute work to the best practice of engineering and applicable standards governing the works specified. All documents should be signed off by an accredited representative of the contractor and to be filed for NTCSA. Any deviations from the scope is to be communicated with the NTCSA representative and approval issued with the relevant documents.

2.7 Related/Supporting Documents

N/A

3. Scope of Work : Inspection and Maintenance of Overhead lifting equipment in Central Grid

The works include the inspection, testing and maintenance of lifting equipment at Central Grid substations and sites for a period of 5 years including repairs based on inspection reports of unplanned failures. The inspection and testing works shall make provision of the issuing of a technical report with recommendation of repairs and work required to maintain the operation, integrity and safety of the equipment. The scope shall be carried by an LME and LMI include but not limited to:

3.1. 6 monthly inspection, testing and servicing:

- Check gearbox for excessive noise, oil leaks, vibration including internal inspections where applicable
- Check all equipment lubrication
    - Gears, pinions, bearings, ropes
- Check all structures/beams and supports for structural integrity, cracks, deformity or failures.
- Check all limit switches and safety switches/devices functionality
- Check all controls and wiring for operation and safety functions.
- Check all end stops secured and in position
- Check Motor brakes operation and adjustments
    - Check wear and tear
    - Correct adjustments if necessary
    - Check Motor overheating and excess noise
- Check Travel wheel functionality, wear and tear and security
- Check access ladders, walkways and platforms integrity - clear of debris, loose grating or slippery surface
- Check pendant control functionality and cable integrity from damage and suspension

- Check long travel cable and cable trolley for damage and operating condition
- Check electrical covers, terminal boxes and glands for sealing and correct fitting
- Check Motor terminal box wiring, loose connections/terminations, damage, hot connections
- Check control panel and components functionality, circuit wiring integrity and damage, loose connections, and labelling
- Check operation of siren, sensors and lighting
- Check marking of SWL and correct if faded or not marked

3.2 Lifting devices/gear and hooks inspection, testing and servicing (3 monthly)

- Check thoroughly load chains, wires, slings, hoist ropes as well as shackles, hooks or chain blocks where applicable
    - Check for wear and tear
    - Check safety factor with respect to designed safe working load capacity and compliance on ropes, chains or woven webbing
    - Check for clear marking of identification and safe working load classification on lifting tackle
    - Check rope reeling operation and guide security
    - Check rope/sling/chain/woven webbing for wear, open strands, kinking, corrosion or any defects
    - Measure rope length to be three full turns on the drum when load is on the floor and a spare groove when hook block is at upper limit

3.3 Load testing and certification (1 yearly)

- Inspection of the installation before testing by authorised inspector
- Operational and load performance testing with reference to OEM guidelines
- Load testing to manufacturing standard or 110 % maximum SWL
- Deflection test in accordance to crane manufacturing standards
- Operation of hoist brake with power supply off and maximum SWL applied

- Recommendation for repairs based on inspection, maintenance and testing of the lifting equipment
- Non periodic maintenance and repairs on a need basis as requested by Client representative through issuing of task orders.
- Issue technical report following routine maintenance to the Client which shall detail inspection and maintenance completed, condition of equipment, defects noted and recommended corrective actions, as well as test certificates of load testing performed. The report shall be signed off by the LMI and submitted 5 working days before PM end date.

4. Acceptance

This document has been seen and accepted by:

Name	Designation
Pulane Sereme	HV Plant Manager
Matimba Simango	HV Plant Senior Engineer
Livhuwani Mulaudzi	HV Plant Snr Advisor

In the preceding table, list the manager/s of the divisions that will be affected by the content of this document.

5. Revisions

Note: Start with the latest Revision History in the first row and go backwards.

Date	Rev.	Compiler	Remarks
June 2025	0	S.N Ntsoane	Scope of work for contract request

6. Development Team

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

7. Acknowledgements

Tiroyaone Matebele

Biko Dzhalagome

Appendix A –

A.1 Separate supporting attachments to support this scope of work

Eskom
National Transmission
Company South Africa ™

Lifting Equipment details

Substation / Site	Location /Chamber	Manufacturer	SWL	Access Platform
Craighall	275kV	Martin	6.3 Ton	Yes (ladder)
Craighall	88kV	Martin	6.3 Ton	Yes (ladder)
Croydon	275kV	Martin	5 Ton	Yes (ladder)
Croydon	132kV	Martin	4 Ton	Yes(ladder)
Simmerpan	Workshop	Demag	2 Ton	No
Simmerpan	Workshop	Demag	2 Ton	No
Simmerpan	Workshop	Demag	1 Ton	No
Simmerpan Stores	Warehouse	Benrather Maschinenfabrik	40 & 10 Ton	Yes (ladder)
Simmerpan Stores	Warehouse	Demag	3 Ton	No
Diphororo	Workshop	Chainblock	1 Ton	N

Compiled by: Seruwe Ntsoane

Signature 

Transmission Central Grid
HV Plant