

 Eskom	Scope of Work	TRANSMISSION
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1. PROJECT DETAILS

Project Description	Gourikwa Proteus 400 kV line 1 and 2 Guy anchor link restoration					
Project No.'s	ID		WBS		Rev	1
Operating Unit & Project Office:	Transmission: AME			Western Cape Grid: Gourikwa – Proteus 400 kV line 1 and 2		
Project Manager:	Tony Baloka					
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Project Sponsor / Client Representative:	Western Grid					
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PLCM Phase	ERA					

2. INTRODUCTION TO THE SCOPE STATEMENT

The purpose of this scope of work is to set out the remedial measures needed to increase the life expectancy of the Cross-rope tower on the Gourikwa - Proteus 400kV line 1 and line 2, and to minimize the risk of a possible tower and line failure. This will be done through the restoration and treatment of the guy anchor links for various states of corrosion.

This project focuses on restoring foundations on the cross-rope structures of the 10 km line. There are 14 cross-rope structures on each line. The total number of cross-rope structures to be investigated and possibly restored 28 structures.

All activities that are performed by the contractor should be recorded and assist the engineer in evaluating the method statements prescribed by the contractor. The use of cameras to record the activities should be promoted during the Guy anchor restoration and contractors should price for such activities.

3. NORMATIVE REFERENCE

1. SANS 10280-1:2017 – Overhead power lines for conditions prevailing in South Africa
2. 240-47172520 – The Standard for the Construction of Overhead Powerlines (TRMSCAAC 6)

4. PROJECT DELIVERABLES

85% of the Guyed anchor towers on Gourikwa – Proteus line 1 and line 2 are inclined pile anchors, where concrete of anchor foundation extends above the natural ground level (NGL). There are however approximately 15% of these anchors where the foundation concrete surface lies below, but not lower than 500mm below the NGL.

5. PROJECT SCOPE DESCRIPTION (PROGRESSIVELY ELABORATED)

There are 28 Cross-rope structures to be investigated in this project. There are two types of foundations that were used on Cross-rope structures on this line: Inclined pile anchor foundations and Deadman anchor foundations. The total number of anchor foundations to be investigated is 112 anchors.

The contractor must expose all the cross-rope foundation that do not have adequate concrete protrusion out of the NGL. Once the type of the foundation has been determined, the following scope of work must be followed:

Inclined Pile Anchor Foundations:

- Induction and Risk assessment (Access to Farm)
- Site establishment (Only where agreed in writing with landowner, otherwise no site establishment on private property unless the use of landowner consent form is signed)
- Excavate the foundation to investigate the type of foundation on the tower.
- Clear and expose the corroded element (anchor link) with a hand brush.
- Thoroughly clean the anchor by means of a wire brush, washing with water and drying.
- Access the level of corrosion on the anchor link and categorize it.
- Each corrosion assessment must be accompanied by a digital photograph.
- Use the level of corrosion to predict the restoration and treatment process.
- Any sign of corrosion on the anchor link must be removed through sand blasting.
- Apply the relevant treatment process as per the restoration specification.
- After the drying and curing of concrete, the excavated foundations must be backfilled according to TRMSCAAC 6.
- Check guy tension and correct where applicable.
- The site must be cleaned and restore before the contractor moves to the next tower.

Deadman Anchor Foundations:

- Induction and Risk assessment (Access to Farm)
- Site establishment (Only where agreed in writing with landowner, otherwise no site establishment on private property unless the use of landowner consent form is signed)
- The total length of the link must be exposed to the level of concrete on the top of the concrete, while taking care to stay within the maximum dimensions as per the restoration Specification.
- An assessment will need to be done of the corrosion condition. Only category 1, 2, 3 and 4 will be applicable.

- All corrosion needs to be removed by soft wire brushing (category 1 & 2) and sand blasting for category 3 & 4.
- Metal surfaces are to be cleaned and coated with Elastomeric paint (2 coats of 99% zinc rich paint or similar approved.)
- The exposed link is to be encased in 30MPa concrete to 150mm above natural ground level using a 200mm diameter uPVC pipe. Larger diameter tubes may be used where applicable. This encasement method will be applicable to all dead man anchors.
- After the drying and curing of concrete, the excavated foundations must be backfilled according to TRMSCAAC 6.
- Check guy tension and correct where applicable.
- The site must be cleaned and restore before the contractor moves to the next tower.

6. PROJECT SCOPE EXCLUSIONS

Project excludes work on towers outside the range mentioned above.

7. PROJECT ACCEPTANCE CRITERIA

Contractor will be awarded the contract after tender evaluations. For technical, tenderers who pass the threshold of 75% for technical compliance will be further evaluated by the rest of the tender process like Commercial and SHEQ. All work to be performed will be done after Safe Work procedures are accepted by Eskom. All work to be done as per accepted quality documentations like the quality plan and QITP's.

8. PROJECT ASSUMPTIONS

- Access to tower positions is possible.

9. PROJECT CONSTRAINTS

- Constraint 1- rebuild within existing servitude.
- Constraint 2 - May require switching the line back on at short notice.

10. PROJECT REFERENCES

Description	Location
LES 1449	Gourikwa – Proteus 400 kV line 1 and 2 Guy anchor link restoration Specification

11. PROJECT ADDITIONAL INFORMATION

N/A