

 Eskom	Scope of Work	Technology
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1. INTRODUCTION

As understood from 2012 URS for Georgedale, various equipment in 132kV and 88kV yards have been identified as obsolete and due for replacement. If left in the system it could add to the risk of system failure or unwanted outages within the eastern transmission grid. The 88kV and 132kV busbars are strung with copper conductor has also been requested in Substation User Requirement Specification (hereafter referred to as SURS) will also be replaced. Various other civil related issues (which will be mentioned in the scope) have also been identified at GEORGEDALE and also forms part of this project. This document scopes the work required for stringing for the 132kV yard only.

2. APPLICABILITY

This document reflects the scope of work for stringing only.

3. ABBREVIATION SCHEDULE

Abbreviation	Description
CB	Circuit Breaker
CC	Coupling Capacitors
CLN	Customer Load Network
CVT	Capacitive Voltage Transformer
DRT	Design Review Team
Dx	Distribution
ENC	Eskom National Contract
Fdr	Feeder
Gx	Generation
HV	High Voltage
ISO	Isolator
kA	Kilo Ampere(s)
kV	Kilo Volt(s)
LES	Lines Engineering Services
LT	Line Trap
MVA	Mega Volt Amperes
OEM	Original Equipment Manufacturer
PI	Post Insulators
PTM & C	Protection, Telecommunications, Metering & Control
SA	Surge Arrester
SANS	South African National Standards
SED	Station Electric Diagram
STN	Station
SUB STN ENG	Substation Engineering

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Abbreviation	Description
TRFR	Transformer
Tx	Transmission
URS	User Requirement Specification

4. DEFINITION SCHEDULE

Abbreviation	Description
String(ing)	Connect / interconnect primary plant HV equipment, conductor using clamps and or conductor to achieve a certain circuit layout
Gantry	Columns and beam(s) arranged in such a way so that tensioned conductors can be attached to such an arrangement
Design package	A collection of design drawings and or documents (listing material quantities etc.) forming part of the design as a whole

5. SCOPE OF WORK

Note that this document must be used in conjunction with the design drawings (see 5.3) as well as all specifications, procedures, guidelines and standards as required by Eskom SOC holdings. Work will be performed in and or in close proximity to a live substation yard, and therefore all necessary safety procedures and precautions must be adhered to.

5.1 SCOPE OF WORKS NOT BY THIS DOCUMENT BUT THAT IS CRUCIAL FOR THE SUCCESSFUL EXECUTION OF THIS PROJECT

This document lists the scope of works applicable to the electrical (only) portion of this project. This document does not report on the following scope:

- Civil Engineering works (although some drawings are listed in 5.3) for this project. The entire detailed civil engineering scope of work must be declared wholly by the relevant Substation Engineering Civil Engineering Design Office.
- Any Overhead Lines Engineering related work/scope excluding stringers, droppers busbar conductors found within actual substation etc.
- Installation of actual relevant HV Equipment where applicable/elsewhere catered for through another existing Eskom contract.
- If/where required, cabling, installation and the wiring of junction boxe(s) does not form part of the scope for stringing related to primary plant layout design. The project manager must consult PTM&C Engineering to have any/all PTM&C Engineering related scope of works declared to the project if/where required to do so.

5.2 SCOPE

The main electrical scope of the project which includes the amending of existing substation layout to achieve the circuit/single line diagram as depicted in the project specific Station Electric Diagram EGEO12P02-SE-E3 Rev 1. Design drawings listed in 5.3 below details how the entire electrical primary plant scope that is to be achieved.

The scope for the stringing must be read in conjunction with the design drawings issued to the project manager – see section 5.3. Stringing, earthing, installation of primary plant equipment labels, replacement and or removal of associated equipment, conductor, clamp connections (where required to do so) should be done in accordance with the construction design i.e relevant bay layout

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schedules EGEO12P02-SE-13. Any earthing scope if already covered by civil scope of works must not be duplicated. Substation Engineering understands that all labels, material and equipment is to be provided by Eskom (If our understanding is in anyway incorrect please do not hesitate inform this office).

5.3 LIST OF APPLICABLE PROJECT SPECIFIC DESIGN DRAWINGS FOR THE GEORGEDALE REFURBISHMENT PROJECT: 132KV YARD

Drawing And Or Document Type And Or Title	Unique Identification Number	Rev Number
Station Electric Diagram	EGEO12P02-SE-E3	1
Key Plan	EGEO12P02-SE-E4	1
Foundation, Trench & Earth Mat Layout	EGEO12P02-SE-E6 Sheet 1	1
Foundation, Trench & Earth Mat Layout Schedule	EGEO12P02-SE-E6 Sheet 2	1
Steelwork Marking Plan	EGEO12P02-SE-E10 Sheet 1	1
Steelwork Marking Plan Schedule	EGEO12P02-SE-E10 Sheet 2	1
Bay Layouts	EGEO12P02-SE-E13 Sheet 20 EGEO12P02-SE-E13 Sheet 21 EGEO12P02-SE-E13 Sheet 24 EGEO12P02-SE-E13 Sheet 25 EGEO12P02-SE-E13 Sheet 26 EGEO12P02-SE-E13 Sheet 27 EGEO12P02-SE-E13 Sheet 32 EGEO12P02-SE-E13 Sheet 33 EGEO12P02-SE-E13 Sheet 34 EGEO12P02-SE-E13 Sheet 37 EGEO12P02-SE-E13 Sheet 38 EGEO12P02-SE-E13 Sheet 39 EGEO12P02-SE-E13 Sheet 41 EGEO12P02-SE-E13 Sheet 42 EGEO12P02-SE-E13 Sheet 43 EGEO12P02-SE-E13 Sheet 44 EGEO12P02-SE-E13 Sheet 20A EGEO12P02-SE-E13 Sheet 21A EGEO12P02-SE-E13 Sheet 24A EGEO12P02-SE-E13 Sheet 25A EGEO12P02-SE-E13 Sheet 26A EGEO12P02-SE-E13 Sheet 27A EGEO12P02-SE-E13 Sheet 32A EGEO12P02-SE-E13 Sheet 33A EGEO12P02-SE-E13 Sheet 34A EGEO12P02-SE-E13 Sheet 37A EGEO12P02-SE-E13 Sheet 38A EGEO12P02-SE-E13 Sheet 39A EGEO12P02-SE-E13 Sheet 41A EGEO12P02-SE-E13 Sheet 42A	Various (see cover sheet - EGEO12P02-SE-E13 Sheet 0 Rev 1)

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	EGEO12P02-SE-E13 Sheet 43A EGEO12P02-SE-E13 Sheet 44A	
132kV BUS BAR LAYOUT	EGEO12P02-SE-E9 Sheet 2	1

5.4 DISCLAIMER

Although Substation Engineering endeavours to release design packages that have zero defects and that is devoid of errata:

Substation Engineering and or its staff, reserves the right to:

- Add and or make amendments to/revise any document, design drawing forming part of the design package if/where errata and or anything lacking in the design package is discovered.
- Make amendments to/revise this document (EGEO12P02-SE-E88F) if/where errata and or anything lacking in this document is discovered.