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– 275kV Bypass



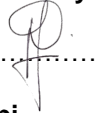
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Watershed Refurbishment Scope of Work	<b>Document Unique ID:</b>	Wat16P02-SE-E89
	<b>Revision:</b>	1
	<b>Page</b>	2 of 4
	<b>Disclosure Classification:</b>	Controlled Disclosure

## TABLE OF CONTENTS

	Page
<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. REFERENCES .....</b>	<b>3</b>
<b>3. SCOPE OF WORK.....</b>	<b>3</b>
3.1 CONSTRUCTION.....	4
3.2 PROJECT SPECIFIC DESIGN DRAWINGS .....	4
3.2.1 Design Drawings .....	4
3.2.1.1 Electrical .....	4

Watershed Refurbishment Scope of Work	<b>Document Unique ID:</b>	Wat16P02-SE-E89
	<b>Revision:</b>	1
	<b>Page</b>	3 of 4
	<b>Disclosure Classification:</b>	Controlled Disclosure

## 1. INTRODUCTION

Northwest grid HV plant & HV Technology conducted a Condition Criticality Risk Assessment (CCRA) in July 2014 in order to ascertain the plant equipment condition and evaluate the health condition of the existing asset base. New Asset Appraisals for all the HV equipment's were published recently, earlier 2017 and the SURS was revised to includes all the end-of-life equipment's identified in those appraisals. The CCRA at Watershed Substation revealed the need for plant refurbishment, the collected data was then utilised to compile the refurbishment engineering report; Watershed Substation Refurbishment Project report (TNWRP0104) [1] and the purpose of the report is to list identified aged and obsolete equipment, based on the technical recommendations from the CCRA to improve the reliability and operational integrity of Watershed substation.

This document ultimately serves as the Scope of Work that is required for the installation of the 275kV bypass.

## 2. REFERENCES

- [1] Watershed Substation Refurbishment Project Report (TNWRP0104)
- [2] Substation User Requirement Specifications Rev 2, (17/08/2018).
- [3] South African Grid Code
- [4] Occupational Health and Safety Act (OHS Act) 85 of 1993
- [5] Eskom Safety, Health, Environment and Quality policy (32-727)
- [6] Operating Regulations for High Voltage Systems (32-846)
- [7] 240-122922610 - Specification for Substation Tubular Conductors
- [8] 240-53113923 - Specification for Substation Clamps for Tube Aluminium Conductors
- [9] 240-122922894 Technical Evaluation Standard for Substation Tubular Conductors
- [10] 240-84237021 - Technical Evaluation Standard for Substation Tubular Clamps

## 3. SCOPE OF WORK

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

New 275kV bypass to be connected to Bus coupler B to supply 275kV Feeder 1 (Hera) and 275kV Feeder 3 (Pluto) during equipment replacement.

This involves the erection of 275kV post insulators, tubular busbar, clamps and isolators.

Watershed Refurbishment Scope of Work	<b>Document Unique ID:</b>	Wat16P02-SE-E89
	<b>Revision:</b>	2
	<b>Page</b>	4 of 4
	<b>Disclosure Classification:</b>	Controlled Disclosure

### 3.1 CONSTRUCTION

All construction is to be carried out in accordance with Eskom's Safety, Health and Environmental Specification. Construction will be done in close proximity to other energized electrical equipment and therefore all necessary safety procedures must be strictly adhered to.

Method statements and quality inspection plans are to be provided for acceptance prior to any construction. As a minimum the submitted plans need to contain at least the points listed in the typical inspection plans provided.

### 3.2 PROJECT SPECIFIC DESIGN DRAWINGS

3.2.1 Design Drawings		
3.2.1.1 Electrical		
Drawing Or Document Title	Unique Identification Number	Rev Number
Station Electric Diagram	Wat16P02 – SE – E3	0
Key Plan	Wat16P02 – SE – E4	0
Foundation & Trench Layout	Wat16P02 – SE – E8	0
Steelwork Marking Plan	Wat16P02 – SE – E10	0
275kV Bypass layout	Wat16P02 – SE – E9	0