

 Eskom	Strategy	Engineering
---	-----------------	--------------------

Title: Koeberg 400kV Busbar Reconfiguration & Transformer Replacement Project – Technical Tender Evaluation Strategy for the Stringing, Earthing and Erection at Weskusfleur substation

Unique Identifier: **WKoe11P01-SE-D86**

Alternative Reference Number: **N/A**

Area of Applicability: **Engineering**

Documentation Type: **Strategy**

Revision: **3**

Total Pages: **18**

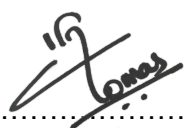
Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

Compiled by

Functional Responsibility

Authorized by



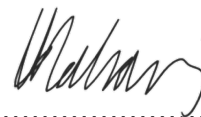
Christy Thomas
Substation Engineer (Elec.):
Substation Engineering

Date: 03/11/2023



Mark Pepper
Engineer:
Substation Engineering

Date: 03/11/2023



Subhas Maharaj
Senior Manager:
Substation Engineering

Date: 7 Nov 2023

1. CONTENTS

	Page
1. CONTENTS	2
1. INTRODUCTION	4
2. SUPPORTING CLAUSES.....	4
2.1 SCOPE	4
2.1.1 Purpose	4
2.1.2 Applicability.....	4
2.2 NORMATIVE/INFORMATIVE REFERENCES.....	4
2.2.1 Normative	4
2.2.2 Informative.....	5
2.3 DEFINITIONS.....	5
2.3.1 Classification	5
2.4 ABBREVIATIONS.....	5
2.5 ROLES AND RESPONSIBILITIES.....	5
2.6 PROCESS FOR MONITORING.....	5
2.7 RELATED/SUPPORTING DOCUMENTS.....	6
3. TENDER TECHNICAL EVALUATION STRATEGY	6
3.1 SCOPE OF WORK.....	6
3.2 TECHNICAL EVALUATION THRESHOLD	6
3.3 TET MEMBERS.....	8
3.4 TECHNICAL RETURNABLES	8
3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA (A)	10
3.6 TET MEMBER RESPONSIBILITIES.....	12
3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS.....	13
3.7.1 Risks.....	13
3.7.2 Exceptions / Conditions.....	13
4. AUTHORISATION.....	14
5. REVISIONS	14
6. DEVELOPMENT TEAM	14
7. ACKNOWLEDGEMENTS	14
APPENDIX A.....	15

FIGURES

Figure 1: Geographical Location	3
---------------------------------------	---

TABLES

Table 1: List of Abbreviations	5
Table 2: Evaluation Scoring Table.....	7
Table 3: TET Members	8
Table 4: A: Stringing, Earthing and Erection Qualitative Technical Evaluation Criteria	10
Table 5: TET Member Responsibilities.....	12
Table 6: Acceptable Technical Risks.....	13
Table 7: Unacceptable Technical Risks	13
Table 8: Acceptable Technical Exceptions / Conditions.....	13
Table 9: Unacceptable Technical Exceptions / Conditions	13

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

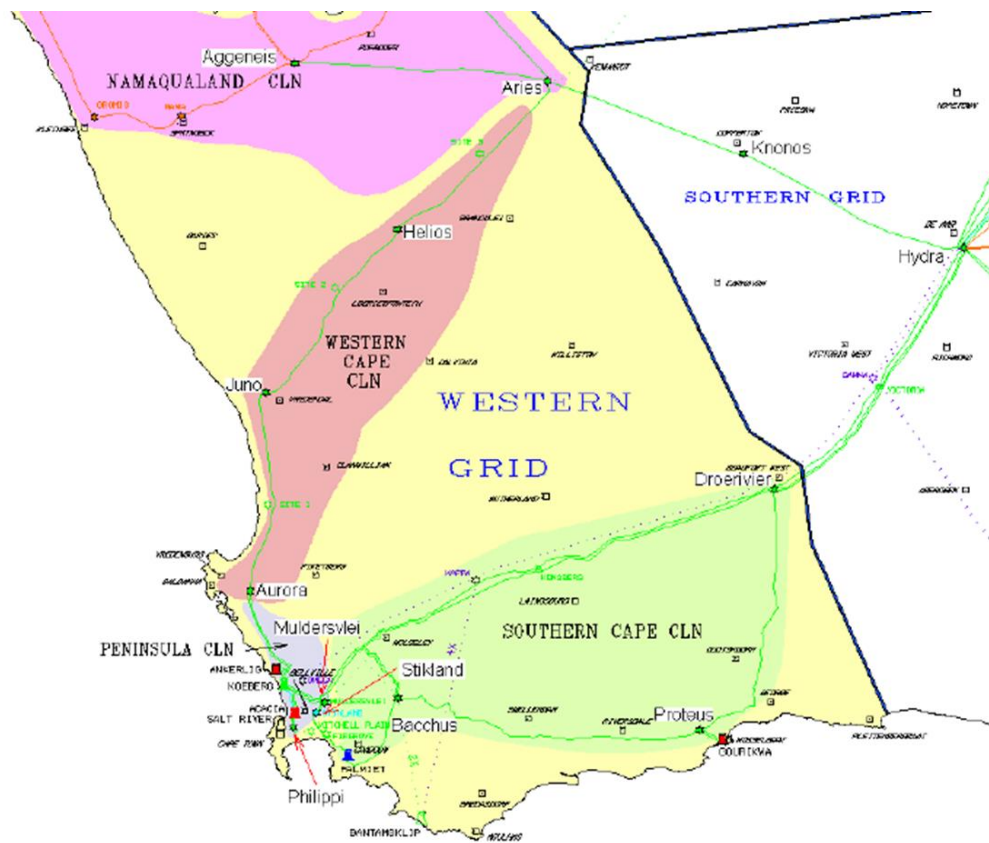


Figure 1: Geographical Location

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

1. INTRODUCTION

This document establishes the technical evaluation strategy for the evaluation of tenders that will be received in response to the request to tender for the work to be done at Weskusfleur Substation. This strategy is a high level consideration of the key aspects that will give direction to the technical evaluation process. It is in accordance with the Tender Engineering Evaluation Procedure (240-48929482) [1]. This document covers the work required for the stringing, earthing and erection at Weskusfleur substation.

2. SUPPORTING CLAUSES

2.1 SCOPE

This document covers the technical evaluation strategy for the evaluation of the tenders for Koeberg 400kV Busbar Reconfiguration & Transformer Replacement Project.

The aim of this document is to provide a technical evaluation strategy that shall be used for the technical evaluation of the tenders for stringing, earthing and erection at Weskusfleur Substation. Furthermore, it will ensure transparency in the evaluation process as per the requirements set out in the Tender Engineering Evaluation Procedure (240-48929482) [1].

2.1.1 Purpose

The purpose of this tender technical evaluation strategy is to define the Technical Returnables, Qualitative Evaluation Criteria and TET member responsibilities for tender technical evaluation. The technical evaluation strategy serves as basis for the tender technical evaluation process.

2.1.2 Applicability

This document shall apply to the Koeberg 400kV Busbar Reconfiguration & Transformer Replacement Project at Weskusfleur Substation in the Western Grid.

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] 240-48929482: Tender Engineering Evaluation Procedure
- [2] 32-1034: Eskom Procurement and Supply Management Procedure
- [3] 240-82736997: Stringing, Cabling, Earthing and Erection Specification for Substations
- [4] 0.54/393: Transmission Substation Earthing Standard
- [5] TST41-877: Transmission Substation Design Earthing Standard
- [6] SANS 1200: Standard Specification for Civil Engineering Construction
- [7] OHS Act, 1993: Construction Regulations, 2014
- [8] 240-101940513: Substation Earth Electrode Resistance Measurement
- [9] TST 41-642: Continuity Measurement of Transmission Substation on Earthmat System

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

2.2.2 Informative

None

2.3 DEFINITIONS

2.3.1 Classification

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

2.4 ABBREVIATIONS

Table 1: List of Abbreviations

Abbreviation	Description
CV	Curriculum Vitae
EDWL	Engineering Design Work Lead
LDE	Lead Discipline Engineer
N/A	Not Applicable
OHSA	Occupational Health and Safety Act
ORHVS	Operating Regulations for High Voltage Systems
SANS	South African National Standards
TBC	To be Confirmed
TET	Technical Evaluation Team
TST	Transmission Standard

2.5 ROLES AND RESPONSIBILITIES

Engineering Manager: All Engineering Managers throughout Eskom shall ensure that all staff, in their respective areas understand and adhere to this procedure.

Engineering Design Work Lead (EDWL): The EDWL is responsible to manage the execution and adherence to this procedure. Typically on New Build projects the EDWL role is fulfilled by the Lead Discipline Engineer (LDE) and on existing asset projects the EDWL role is fulfilled by the relevant System Engineer / Plant Engineer.

Technical Evaluation Team (TET) member: The delegated engineers / technical specialists who are responsible to review and evaluate technical aspects of the tender documentation as per the Tender Technical Evaluation Strategy.

2.6 PROCESS FOR MONITORING

N/A

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

2.7 RELATED/SUPPORTING DOCUMENTS

N/A

3. TENDER TECHNICAL EVALUATION STRATEGY

3.1 SCOPE OF WORK

The high level scope of work for this project will comprise the following activities:

1. Erection of all primary plant equipment onto their respective steelwork structures where applicable
2. Stringing and earthing for 8 x 400kV Feeder bays
3. Stringing and earthing for 5 x 132kV Feeder bays
4. Earthing of 2 x 400/132/22kV Transformers
5. Earthing of 2 x 22kV/400V Auxiliary Transformers
6. Earthing of 2 x 6.6kV/380V Auxiliary Transformers
7. Earthing (HV Yard)
8. Ensuring that both the installed equipment earthing and the structure earth tails are electrically connected to the main earth grid of the substation
9. Installation of the substation's overhead earthwire as per the earthwire arrangement drawing

3.2 TECHNICAL EVALUATION THRESHOLD

The scoring for each tender will be done as per the scoring table shown below. This table is as per the requirements of Tender Engineering Evaluation Procedure [1]. The minimum weighted average score required for the tender to be considered technically acceptable is 70%.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

Table 2: Evaluation Scoring Table

Score	Percentage	Definition
5	100	COMPLIANT Meet technical requirement(s) AND; No foreseen technical risk(s) in meeting technical requirements.
4	80	COMPLIANT WITH ASSOCIATED QUALIFICATIONS Meet technical requirement(s) with; Acceptable technical risk(s) AND/OR; Acceptable exceptions AND/OR; Acceptable conditions.
2	40	NON-COMPLIANT Does not meet technical requirement(s) AND/OR; Unacceptable technical risk(s) AND/OR; Unacceptable exceptions AND/OR; Unacceptable conditions.
0	0	TOTALLY DEFICIENT OR NON-RESPONSIVE
<p>Note 1: The scoring table does not allow for scoring of 1 and 3.</p> <p>Note 2: Foreseen acceptable and unacceptable risk(s), exceptions and conditions shall be unambiguously defined in the relevant Tender Technical Evaluation Strategy.</p>		

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

3.3 TET MEMBERS

Table 3: TET Members

TET number	TET Member Name	Designation
TET 1	Christy Thomas	Substation Engineer (Electrical)
¹ TET 2	TBC	Substation Engineer (Electrical)
EDWL	Mark Pepper	Substation Chief Engineer (Electrical)

¹ The inclusion of the second member in the technical tender evaluation team will depend on the total value of the service of stringing, earthing and erection for the project. If the total value is less than R10,000,000.00 (ten million rand), then only one member will be required for the technical tender evaluation of submissions. Otherwise, two members will be required for the technical tender evaluation of submissions as per section 3.8.5 of [2] (32-1034: Eskom procurement and supply management procedure).

3.4 TECHNICAL RETURNABLES

The following documents shall be submitted when tendering:

- a) List of key personnel, their experiences (include CV detailing project-specific work experience for each employee) and academic qualifications. Also include total number of manpower to be dedicated to this project.
- b) List of relevant and comparable projects undertaken. The list shall include project scope, substation name, completion date, project value and client contact person and details. The contractor shall further include any concessions made during each project execution.
- c) List of all tools and equipment to be used.
- d) Test and measurements methods (procedures) for the various tests and measurements stated in this specification:
 - Earth resistance measurements.
 - Earth continuity measurements.
 - Insulation testing.
- e) Erection method statements (including detailed step-by-step procedures) for the following:
 - Stringing and termination of conductors.
 - Stringing and termination of earth-wire.
 - Installation of HV equipment.
 - Earthing.
 - Brazing of earth connections.
 - Crimping.
- f) Procedure for compression of clamps.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

The following documents shall be submitted **upon** tender award, prior to starting with construction:

- a) Proof of training of supervisor as responsible person in accordance with Eskom ORHVS. Copy of ORHVS certificate shall be attached.
- b) Proof of qualification of rigger.
- c) Proof of qualification of operator of machinery.
- d) Calibration certificates of applicable tools and equipment.
- e) Test certificates of lifting equipment.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

3.5 QUALITATIVE TECHNICAL EVALUATION CRITERIA (A)

Compliant tenders will be evaluated against a set of weighted qualitative evaluation criteria. The evaluation criterion has been broken down into sections and a percentage weighting has been allocated to each section. Percentage weighting summary figures is indicated in Table 4 below. For details of the requirements for criteria scoring, see appendix A.

Table 4: A: Stringing, Earthing and Erection Qualitative Technical Evaluation Criteria

	Qualitative Technical Criteria Description		Reference to Technical Specification / Tender Returnable	Criteria Weighting (%)	Criteria Sub Weighting (%)
A1	Relevant company experience (Projects completed in past 5 years)		As per 240-82736997, section 3.4, page 17	40	-
	1.1	Number of projects	As per 240-82736997, section 3.4, page 17		10
	1.2	Project scope	As per 240-82736997, section 3.4, page 17		10
	1.3	Project value	As per 240-82736997, section 3.4, page 17		10
	1.4	Substation name and completion date	As per 240-82736997, section 3.4, page 17		5
	1.5	Client contact person and details	As per 240-82736997, section 3.4, page 17		5
A2	Qualifications and experience of key personnel		As per 240-82736997, section 3.4, page 17	30	-
	2.1	Academic qualifications	As per 240-82736997, section 3.4, page 17		5

	2.2	Project-specific work experience	As per 240-82736997, section 3.4, page 17		20
	2.3	Total number of manpower to be dedicated to this project	As per 240-82736997, section 3.4, page 17		5
A3	Construction/method statements		As per 240-82736997, section 3.4, page 18	15	-
	3.1	Relevancy of method statements	As per 240-82736997, section 3.4, page 18		5
	3.2	Adequacy of method statements	As per 240-82736997, section 3.4, page 18		10
A4	Test Procedures		As per 240-82736997, section 3.4, page 17	5	-
	4.1	Procedures relevant/ comprehensive	As per 240-82736997, section 3.4, page 17		5
A5	Tools and Equipment		As per 240-82736997, section 3.4, page 17	5	-
	5.1	Adequacy of tools and equipment	As per 240-82736997, section 3.4, page 17		5
A6	Procedure for compression of clamps		As per 240-82736997, section 3.4, page 18	5	-
	6.1	Procedures relevant/ comprehensive	As per 240-82736997, section 3.4, page 18		5
				TOTAL: 100	

3.6 TET MEMBER RESPONSIBILITIES

Table 5: TET Member Responsibilities

Qualitative Criteria Number	TET 1	¹TET 2
A1	X	X
A2	X	X
A3	X	X
A4	X	X
A5	X	X
A6	X	X

¹ The inclusion of the second member in the technical tender evaluation team will depend on the total value of the service of stringing, earthing and erection for the project. If the total value is less than R10,000,000.00 (ten million rand), then only one member will be required for the technical tender evaluation of submissions. Otherwise, two members will be required for the technical tender evaluation of submissions as per section 3.8.5 of [2] (32-1034: Eskom procurement and supply management procedure).

3.7 FORESEEN ACCEPTABLE / UNACCEPTABLE QUALIFICATIONS

3.7.1 Risks

Table 6: Acceptable Technical Risks

Risk	Description
1.	None.

Table 7: Unacceptable Technical Risks

Risk	Description
1.	Contractors who do not have the relevant experience.

3.7.2 Exceptions / Conditions

Table 8: Acceptable Technical Exceptions / Conditions

Risk	Description
1.	None.

Table 9: Unacceptable Technical Exceptions / Conditions

Risk	Description
1.	None.

4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
Christy Thomas	Substation Engineering, Senior Engineer
Mark Pepper	Substation Engineering, Chief Engineer (Western Grid)
Bheki Ntshangase	Substation Engineering, Senior Manager

5. REVISIONS

Date	Rev.	Compiler	Remarks
23 January 2019	1	Cassandra Kisten	First issue
04 June 2019	2	Cassandra Kisten	Qualitative technical evaluation criteria weighting revised. Appendix A added.
October 2023	3	Christy Thomas	Table 4: Reference to technical specification/tender returnable-section number and page number corrected.

6. DEVELOPMENT TEAM

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

- None

7. ACKNOWLEDGEMENTS

I would like to thank Rukesh Ramnarain and Mark Pepper for their input into the document.

CONTROLLED DISCLOSURE

When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

APPENDIX A

Item	Description	Section Criteria Weight (%)	Criteria Sub Weighting (%)	Score (0-5)	Sub Weighting (%) = ((Score)/5) X (criteria sub weighting)	Criteria
A1	Relevant company experience (comparable projects undertaken in past 5 years)	40%	-	-	-	-
1.1	Number of projects		10%			>8 Projects = 5 ; 3 to 7 projects = 4 ; 1 to 2 projects = 2 ; none provided = 0
1.2	Project scope		10%			All three (Stringing , erection and earthing) provided = 5 ; One or two out of three provided = 2 ; None provided = 0
1.3	Project value		10%			> R8m = 5 ; R2m to R8m = 4 ; < R2m = 2
1.4	Substation name and completion date		5%			Name and date provided = 5 ; Only name or date provided = 2 ; None provided = 0
1.5	References : Client contact person and contact details		5%			Contact name and contact details provided = 5 ; Only contact name or only contact details provided = 2 ; None provided = 0
List of relevant and comparable projects undertaken (Maximum points = 25)						
Total Score						
List of relevant and comparable projects undertaken (Maximum Section weight = 40%)						
Weighted score = (score) x (40/25)						
A2	Qualifications and experience of key personnel	30%	-	-	-	-
2.1	Academic qualifications		5%			Diploma = 5 ; Certificate/artisan = 4 ; Grade 12 (National Senior Certificate) and National (vocational) Cert. level 4 = 2 ; None provided = 0
2.2	Project-specific work experience		20%			>8 Projects = 5 ; 3 to 8 Projects = 4 ; <3 Projects = 2 ; None provided = 0

2.3	Total number of manpower to be dedicated to this project		5%			>20 = 5 ; 10 to 20 = 4 ; <10 = 2 ; None provided = 0
List of key personnel (Maximum points = 15)						
Total Score						
List of key personnel (Maximum Section weight = 30%)						
Weighted score = (score) x (30/15)						
A3	Construction/method statements(Stringing , erection and earthing of equipment and steelwork)	15%	-	-	-	-
3.1	Relevancy of method statements		5%			Relevant stringing , erection and earthing method statements provided: All three provided = 5 ; One or two out of three provided = 2 ; Irrelevant or none provided = 0
3.2	Adequacy of method statements		10%			Detailed procedures for all activities = 5 ; Irrelevant or none provided = 0
Construction/method statements(Stringing, erection and earthing of equipment and steelwork (Maximum points = 10)						
Total Score						
Construction/method statements (Stringing, erection and earthing of equipment and steelwork (Maximum Section weight = 15%)						
Weighted score = (score) x (15/10)						
A4	Test procedures((earth-mat resistance measurements, Continuity measurements between earthmat and equipment/steelwork)	5%	-	-	-	-
4.1	Procedures relevant/comprehensive		5%			Both test procedures relevant and comprehensive = 5 ; One out of two test procedures provided = 2 ; Irrelevant = 0
Test procedures (Maximum points = 5)						
Total Score						
Test procedures (Maximum Section weight = 5%)						
Weighted score = (score) x (5/5)						

A5	Tools and Equipment	5%	-	-	-	-
5.1	Adequacy of tools and equipment		5%			Detailed = 5 ; Marginal = 4 ; Deficient = 2
Tools and Equipment (Maximum points = 5)						
Total Score						
Tools and Equipment (Maximum Section weight = 5%)						
Weighted score = (score) x (5/5)						
A6	Procedure for compression of clamps	5%				-
6.1	Procedures relevant/comprehensive		5%			Relevant and comprehensive = 5 ; Relevant and not comprehensive = 2 ; Irrelevant = 0
Procedure for compression of clamps (Maximum points = 5)						
Total Score						
Procedure for compression of clamps (Maximum Section weight = 5%)						
Weighted score = (score) x (5/5)						

Criteria	Section	Maximum Score	Achieved Score
List of relevant company experience (comparable projects undertaken in past 5 years)	A1	25	
Qualifications and experience of key personnel	A2	15	
Construction/method statements	A3	10	
Test procedures	A4	5	
Tools and Equipment	A5	5	
Procedure for compression of clamps	A6	5	
Total		65	
Percentage obtained = (Achieved Score/65) x 100			

The minimum score required to be considered as a supplier must be 70% or above.