Eskom	Report	Technology

Title:	**TECHNICAL EVALUATION CRITERIA FOR SUB-TRANSMISSION OVERHEAD LINE CONTRACTORS**	Unique Identifier:	**SI GOU-TEC-003**
		Alternative Reference Number:	**N/A**
		Area of Applicability:	**Engineering**
		Documentation Type:	**Report**
		Revision:	**1**
		Total Pages:	**17**
		Next Review Date:	**N/A**
		Disclosure Classification:	**CONTROLLED DISCLOSURE**

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Date: 25/09/2018	Date: 01/10/2018	Date: 01/10/2018

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1. INTRODUCTION

This document sets out the criteria to be used when evaluating a contractor for the construction of sub-transmission overhead lines.

2. SUPPORTING CLAUSES

2.1 SCOPE

These technical evaluation criteria relates to the construction of sub-transmission (44-132kV) overhead lines in Eskom Distribution. Construction for purposes of this document relates to both new build and/or refurbishment projects.

2.1.1 Purpose

The aim of the document is to formalize the requirements that should be met by the contractors for the construction of sub-transmission overhead lines. It is used to determine contractor capability and/or experience relating to the construction of sub-transmission overhead lines.

2.1.2 Applicability

This document shall in general apply to Eskom's Distribution Division, and specifically to the GOU and NWOU.

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] 32-1034, Eskom Procurement and Supply Chain Management Procedure

[3] 240-48929482, Tender Technical Evaluation Procedure

[4] Occupational Health & Safety Act (Act 85 of 1993)

2.2.2 Informative

None

2.3 DEFINITIONS

Definition	Description
Certified	Documents which have been certified to be a true copy of the original by a Commissioner of Oaths
Expired	All documents that reach their expiring date before the date of tender will be considered to be expired and not accepted.
Functionality	Means the ability of a supplier to provide goods or services in accordance with specifications as set out in the tender documents.
Responsive	Means a tender that complies with all the terms and conditions of the enquiry, without material deviation or qualification.
Sub-transmission	Term used to refer to normal operating voltages of between 44 and 132kV in Eskom Distribution.

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2.3.1 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

2.4 ABBREVIATIONS

Abbreviation	Description
GOU	Gauteng Operating Unit
NWOU	North West Operating Unit
ORHVS	Operating Regulations for High Voltage Systems
PDE	Power Delivery Engineering
POE	Portfolio of evidence
SI	Standards Implementation Department

2.5 ROLES AND RESPONSIBILITIES

It is the responsibility of the relevant Eskom procurement practitioner to check with the SI department every time prior to approaching the market regarding the validity of this document.

Prospective contractors are to be professional and honest in the submission of evidence as per the requirements stipulated in this document.

All members within the Eskom technical evaluation team shall ensure that contractor ability is evaluated in accordance with this document.

3. REQUIREMENTS

Should the contractor fail to provide any mandatory tender returnable as stipulated in 3.1, the tender submission will be deemed non-responsive and disqualified.

All responsive tenders will be further evaluated by using the scoring framework and associated criteria as stipulated in 3.2, to determine if tenders meet the overall threshold based on the functionality criteria.

Eskom may request to conduct inspections at the company premise during or following the evaluation process for purposes of verification.

3.1 MANDATORY TENDER RETURNABLES

Please note that if any of the requested evidence stated below is not submitted and fully compliant, the tender application will be disqualified without requesting the contractor to submit outstanding documentation. Eskom will treat all documents submitted as confidential.

3.1.1 Technical File

A file containing evidence of all mandatory and functional requirements shall be submitted separately from any other non-technical tender submissions. It is advisable that the contractor should utilise the exact same file numbering/order as per this document to assist the Eskom evaluation team in locating the evidence.

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3.1.2 Registration as electrical contractor

Submit a certified and valid copy of the company's registration as an electrical contractor with Department of Labour. Note that registrations for single phase (only) will not be accepted and treated as non-compliant.

3.1.3 PDE Website access

Submit proof that the company is registered for access to the documents on the Eskom PDE website. Note that this registration is only valid for 12 months upon which it has to be renewed. Expired registrations will not be accepted.

Brenda Morrison can be contacted to arrange access as follows:

Brenda Morrison
011 629 5266

brenda.morrison@eskom.co.za

3.1.4 Company organogram

A company organogram shall be provided that includes the relevant business section down to the skilled team member level of all persons in the section.

3.1.5 Construction regulations training

Submit a certified and valid copy of the training certificate, indicating that the company or one of its delegates have been trained in the Construction Regulations that forms part of the Occupational Health & Safety Act (Act 85 of 1993) to ensure legal compliance on construction sites and workplaces.

3.1.6 Proof of responsible person

The company shall submit a certified copy of a valid Operating Regulations for High Voltage Systems (ORHVS) certificate of at least one Responsible person as defined in the ORHVS. Eskom authorisation reflecting the company name will also be accepted as proof. An ORHVS certificate will only be accepted if the person forms part of the company organogram.

3.1.7 Previous related project experience

The company shall provide a list of previous completed projects (minimum of 1 required) of sub-transmission overhead lines including subcontracting. This must be completed in the table format explained in 3.2.1. Transmission overhead line projects will also be accepted.

3.1.8 Tool requirements

The company shall complete the Tool/Equipment Register in Appendix A Table 3 in order to indicate the tool availability for the project. This register must also be signed off by the company's representative.

3.1.9 Vehicle requirements

The Vehicle Register in Appendix A Table 4 shall be completed and signed off by the company's representative.

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3.2 EVALUATION OF FUNCTIONALITY THRESHOLD

The following aspects will be evaluated based on information provided. The contractor needs to obtain a minimum weighted score of 85% in order to pass the technical evaluation.

3.2.1 Company sub-transmission overhead line related experience including subcontracting

Complete Table 2 in Appendix A as indication of sub-transmission overhead line related projects previously completed, clearly indicating the following:

a) Customer name
b) Project name
c) Customer reference contact details
d) A brief project scope of work
e) Start and end dates
f) Rand value of the project

For three of these projects the following must be provided additionally:

a) Letters of appointment
b) Completion/Handing over certificates

NOTE: If appointment letter and handover certificate is not submitted the score will be zero.

3.2.2 Training requirements

Submit certified copies of relevant training/competency certificates of staff relating to sub-transmission overhead line construction covering the below as minimum:

a) Identify and handle HV line structures and hardware (material handling)
b) Construct HV line structure foundations
c) Assemble and erect HV line structures
d) Dressing
e) Stringing and Regulating (Only tension stringing will be accepted)
f) Clerking and Handover procedure
g) Crimping courses
h) Authorised crane operator
i) Earthing
j) Welding
k) Other...

NOTE: Only training certificates of employees appearing on organogram will be accepted.

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3.2.3 Tool/Equipment Register (Scoring as per Table 3 Appendix A)

Table 3 must be signed off by company Managing Director (MD) or their representative.

a) The ownership of tools/equipment must be stated whether it is owned or rented.

b) Information must be provided on all tools/equipment that are rented.

c) Examples of at least two different inspection records and one test certificate shall be provided.

3.2.4 Vehicle register (Scoring as per Table 4 Appendix A)

Table 4 must be signed off by company Managing Director (MD) or representative.

a) Register of all vehicles with registration numbers.

b) Brief descriptions of vehicles to be provided i.e. crane capacity – 8 tons.

c) State ownership of vehicle (Owned or Rented).

d) Provide certified copies of registration papers where vehicles are owned.

3.2.5 ORHVS Authorisation (Outcome 3: Responsible Person)

a) For currently authorised persons, provide certified copy of valid authorisation. Up to 132kV HV lines will be preferred.

b) For previously authorised persons with expired authorisation, provide certified copy of expired authorisation and completed copy of POE checklist (Table 5 Appendix A).

NOTE: POE checklist will only be considered if all requirements for re-authorisation are in place refer to standard 240-70413681 Section E

c) For unauthorised persons ready to be authorised, provide a completed copy of POE checklist (Table 5 Appendix A).

NOTE: Will only be considered if all requirements for authorisation are in place refer to standard 240-70413713

3.2.6 Company premise/storage area

A proof of address shall be provided and a description of the tools/equipment dedicated storage area including the floor area m^2. Local companies will have an advantage.

3.2.7 Method statements

Please provide Method Statements (MS) / Safe Work Procedures (SWP), as detailed in Table 6 Appendix A, which the company has including the associated worker skills and tools to be utilised. Also demonstrate understanding/knowledge of Eskom related standards by referencing relevant documents etc. found in Part 6 (HV) on the PDE website.

3.3 SCORING

The maximum score achievable is 80 and score allocations are as per Table 1. The score will be converted to a percentage to ascertain if the 85% pass criteria is met.

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Table 1: Scoring

Item	Description	Weight
3.2.1	Company sub-transmission overhead line related experience including subcontracting	25
3.2.2	Training requirements	10
3.2.3	Tool/Equipment Register (Scoring as per Table 3 Appendix A)	8
3.2.4	Vehicle Register (Scoring as per Table 4 Appendix A)	5
3.2.5	ORHVS Authorisation (Outcome 3: Responsible person)	10
3.2.6	Company premise/storage area	2
3.2.7	Method statements	20

4. AUTHORISATION

This document has been seen and accepted by:

Name & Surname	Designation
Stephen Nkwane	SI Manger
Athelene Gouws	Snr. Engineer
Cobus Bosch	Snr. Engineer
Japhta Makgotlho	Engineer

5. REVISIONS

Date	Rev.	Compiler	Remarks
September 2018	1	E Heese	New Document.

6. DEVELOPMENT TEAM

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

- Esté Heese
- Cobus Bosch
- Athelene Gouws
- Japhta Makgotlho

7. ACKNOWLEDGEMENTS

- None

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APPENDIX A: REQUIRMENT TABLES

Previous related project experience as requested in 3.1.7. Add more sheets if required.

Table 2: Previous related experience

Project name							**Signature:** _____
Brief scope of work							
Customer name							**Date:** _____
Customer contact details							
Rand value of project							
Start and end dates							

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The following are Tool/equipment requirements. This form the basis upon which Section 3.2.3 will be scored.

Table 3: Tools/Equipment requirements

TOOLS/EQUIPMENT	QTY	OWNED/RENTED	RENTED FROM (IF APPLICABLE)

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LIFTING EQUIPMENT			
SLINGS (Steel, chain and canvas) min. 1.5T			
TIRFOR (WINCH) 1600kg			
CONDUCTOR GRIP (steel) 8-15mm			
CONDUCTOR GRIP (al) 13-27mm			
PULLING EYE (Red Devil) 45kN			
LEVER HOISTS (Kitos) 1.5T & 3T			
D-SHACKLES (containing SWL) Various			
Snatch blocks			
Guide / pilot rope			
Stringing wheels / Conductor pulleys min. 600mm			
GENERAL TOOLS			
General Builder Tools			
Toolbox with general tools			
Hammers min.1800g			
Bolt cutter medium			
Suitable drills (power)			
Strapping tool			
Gas Welding Set complete			
Hole alignment wedge			
Torque Wrench 30-150Nm			
Jacks & Props			
Crowbar 1 per team			
Chainsaws			
Handheld radios			
Hand lines or skip rope			
Straight Level min. 1.2m			
Generator >5kW			
CONDUCTOR WORK TOOLS			
Hydraulic conductor cutter			
Cable/Conductor drum trestle (Braked)			
Thermometer			

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Dynamometer 10kN			
Tension stringing gear (bull wheel min. 1.2m dia) Tensioner			
Tension stringing gear (bull wheel min. 1.2m dia) Puller with dynometer			
Hydraulic power pack with crimper head 30T & 100T			
Full set of hexagon Dies (Chicadee-Tern)			
Conductor Wire brush (Al)			
CIVIL WORK TOOLS			
Theodolite / automatic level & accessories			
Dynamic Cone penetrometer			
Wheelbarrow			
Shovel			
Pick			
Hand Compactors 8kg			
Mechanical Compactors (Trenches (Wacker) & Surface (roller))			
Dumper			
Concrete Mixer			
Vibrators for concrete			
Boxing for foundations			
Compressor (with jackhammers)			
SAFETY & WORKING AT HEIGHTS			
PPE full set per person			
Fall Arrest System			
FAS rescue			
Ladders (Extension & Hook) 8-9m			
First Aid Kits			
Fire Extinguishers min. 2.5kg per vehicle			
EARTHING & TESTING			
Portable earths (Working -Lines) 16mm^2			

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Portable earths (Working -Lines) Lattice 16mm^2			
Safety Tester up to 132kV			
Earthing Stick / Telescopic Linkstick			
Earth resistance tester with suitable wires			
Running earths			

Signature: _____ **Date:** _____

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The following are Vehicle requirements. This form the basis upon which Section 3.2.4 will be scored.

Table 4: Vehicle requirements

VEHICLE TYPE		DESCRIPTION	REGISTRATION NUMBER	OWNED/RENTED	RENTED FROM (IF APPLICABLE)
Trucks with suitable crane	1				
	2				
Trucks with elevated work platform (bucket/cherry picker)	1				
	2				
Suitable workers transports	1				
	2				
	3				
LDV's	1				
	2				
	3				
TLBs (Tractor Loader Backhoe)	1				
	2				

Signature: _____ **Date:** _____

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The following are requirements for ORHVS authorization. This, if applicable, influences how Section 3.2.5 will be scored. The contractor needs to evaluate the POE of their employee/s and complete this checklist honestly.

Table 5: ORHVS POE Checklist

Assessor Pre-Requisite Checklist	**240-70413713** **Rev 1**
CANDIDATE TO BE ASSESSED	
Name:	Contact Nr:
Unique/ID Nr:	Sector/Grid:
CNC/CLN:	Authorisation outcome:
Pre-Requisites	**Yes/No**
Application for Assessment from Employer	
Portfolio of Evidence (Complete and up to date)	
Pre-Assessment Documentation (for specific outcome)	
Previous Authorisation (if applicable)	
Proof of valid ORHVS	
Proof of valid First Aid Certificate (appropriate)	
Assessor Appointment letter	
Logistical Arrangements (if / where applicable)	
For contractors – ID photo	
ASSESSOR	
☐ Accept	☐ Reject
Name: _____	
Unique No: _____	
Designation: _____	
Signature: _____	
Date: _____	
Telephone number: _____	

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Method statement Aspects to consider

NOTE: All activities listed below will be scored. Where the company has method statements covering more than one listed activity, it should be clearly indicated as such.

Table 6: Method statement Aspects to consider

Geotechnical and Foundations See D-DT 7600 and D-DT 7700 series of drawings on PDE Web	Provide method statements for: - Setting out, - Soil nomination, - Evaluation and determination of the foundation material, - Excavation of the foundation and the placing of rebar, - Pouring of concrete, curing and backfilling, - Procedure for conducting slump tests for every concrete pour, - Cube crushing tests at an on-site laboratory, - Procedure for soil compaction tests done for every backfilling operation, - Proof-load tests of stay foundations - You may include pictures or drawings to clarify these processes. - Highlight all the risks that may be encountered during the above activities including mitigation thereof.
Towers/Monopoles Sub Transmission Lines Section 15: Steel H-structures for 132kV Lines: 240-75884132 Sub Transmission Lines Section 7 273A Guyed Lattice Structures Standard 240-75884206 Sub-Transmission Lines Section 11: Steel Guyed Mono Pole Suspension Structure 132kV (Suspension Arm) Standard 240-75884102 Sub-Transmission Lines Section 7 Lattice Towers Series 248 240-75884122 Sub-Transmission Lines Section 7: Lattice Structures Series 247 Standard 240-75884116 Sub-Transmission Lines Section 7: Lattice Structures Series 255 Standard 240-75884130	Provide method statements for: The assembly and erection of a self-supporting lattice tower, a steel monopole. All assembly and erection method statements must: - Include pictures or drawings to clarify processes, - Provide details of method for temporary back-staying when needed, - For guyed towers/poles, describe the method used to cut, install and tension guy wires and - For guyed poles, provide a reference to the standard drawings that are given by PDE website. - Highlight all the risks that may be encountered during the above activities including mitigation thereof.

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Earthing Earthing of Transmission Line Towers: 240-130615862	Provide a method statement of how to: - Earthing of tower/pole - Measurement of tower footing resistance - Highlight all the risks that may be encountered during the above activities including mitigation thereof.
Dressing, Stringing and Regulating Sub-Transmission Lines Section 14: Assembly and Informative Drawings for 66kV and 132kV Lines Standard 240-75884092	Provide method statements for: - Stringing and regulating phase conductors and ground wires including figures or pictures. - Dressing of strain and intermediate tower/pole types. Include figures or pictures. - Stringing and back staying will be done - Installation of Clamps / Jumpers / Dampers - How crossings are to be dealt with. - Highlight all the risks that may be encountered during the above activities including mitigation thereof.

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