Eskom	Standard	Distribution & Transmission

Title: **DISTRIBUTION STATCOM EVALUATION CRITERIA**

Unique Identifier:	**240-171000118**
Alternative Reference Number:	**n/a**
Area of Applicability:	**Engineering**
Documentation Type:	**Standard**
Revision:	**1**
Total Pages:	**11**
Next Review Date:	**April 2028**
Disclosure Classification:	**Controlled Disclosure**

Compiled by	Approved by	Authorized by
Selby Mudau	**Neels Van Staden**	**Bheki Ntshangase**
Chief Engineer – Power Electronics & FACTS	**Senior Consultant – Power Electronics (HVDC & FACTS)**	**Snr Manager – Tx Asset Management SED**
Date: 30/03/2023	Date: 30/03/2023	Date: 30/03/2023

Supported by SCOT/SC

Bheki Ntshangase

SCOT/SC Chairperson

Date: 30/03/2023

PCM Reference: **<xxxxxx>**

SCOT Study Committee Number/Name: **<Number or name>**

Content

Page

1. Introduction 3
2. Supporting clauses 3
   - 2.1 Scope 3
     - 2.1.1 Purpose 3
     - 2.1.2 Applicability 3
   - 2.2 Normative/informative references 3
     - 2.2.1 Normative 3
     - 2.2.2 Informative 3
   - 2.3 Definitions 3
     - 2.3.1 General 3
     - 2.3.2 Disclosure classification 4
   - 2.4 Abbreviations 4
   - 2.5 Roles and responsibilities 4
   - 2.6 Process for monitoring 4
   - 2.7 Related/supporting documents 4
3. Requirements 4
   - 3.1 Document identification 4
   - 3.2 High level scope 5
   - 3.3 Desktop evaluation 5
4. Technical criteria evaluation process 5
   - 4.1 Criteria 5
   - 4.2 Evaluation Process 5
5. Authorization 7
6. Revisions 7
7. Development team 7
8. Acknowledgements 7

Annex A – Functional Requirements scoring for a ±1 MVAr 22 kV DSTATCOM 8

Annex B – Technical Evaluation score for a ±1 MVAr 22 kV DSTATCOM 10

Annex C – Final Technical evaluation score calculation for a ±1 MVAr 22 kV DSTATCOM 11

Tables

Table 1: Basic Mandatory Requirements (BMR), Section 3.3.1 of 240-171000117 5

Table 2: Scoring Matrix, Points allocation method 6

Table 3: Scored evaluation criteria 7

1. Introduction

This document standardises the process to be followed when undertaking technical evaluations of bid submissions received for the installation of a 2 MVAr Distribution STATCOM (DSTATCOM) with a -1 MVAr Capacitive range and a +1 MVAr inductive range to be installed on Disselfontein Zoetgat 22 kV feeder at Pole number DZO172 on an EPC Full Lump Sum Turnkey contract.

2. Supporting clauses

2.1 Scope

This document covers the functional and technical evaluation criteria of the DSTATCOM bid submissions. It does not specify the requirements of this equipment as the equipment specification is already defined in the DSTATCOM specification 240-171000117.

2.1.1 Purpose

This document was produced in order to record the standardized scoring method. The Eskom specification standard 240-171000117 specifies the requirements for all associated work and services relating to the design, manufacturing, supply, installation, and commissioning of a 22 kV DSTATCOM and it sets out criteria and methodology to be followed in evaluating bids, catering for possible variations in the solutions offered for compliance with the requirements in 240-171000117 and all the normative references listed therein.

2.1.2 Applicability

This document shall apply to the Distribution Division of Eskom Holdings SOC Ltd. It is applicable to all the contractors that shall be tendering to supply the DSTATCOM as required.

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] 240-171000117 Development of Functional Specification for Distribution STATCOM.

[3] 32-1034 Eskom procurement and supply chain management procedure

2.2.2 Informative

[4] QM 58: Supplier Contract Quality Requirements Specification

[5] 240-48929482: Tender Technical Evaluation Procedure

2.3 Definitions

2.3.1 General

Definition	Description
Bidder, Contractor	In the context of this document bidder refers to the commercial entity tendering for the full scope of work as specified in 240-171000117. Contractor refers to the supplier or bidder or the Original equipment manufacturer (OEM)
Cross functional Team	The person(s) appointed by Eskom to perform evaluation of tender submission(s) in line with Eskom requirements.

Definition	Description
Enquiry	A competitive or non-competitive request for information, interest, quotations, or proposals made to a supplier, a group of suppliers or the market at large.
Submission	The tender in accordance with the requirements of the enquiry.
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.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
BMR	Basic Mandatory Requirements
DSTATCOM	Distribution Static Synchronous Compensator (Distribution STATCOM)
Eskom	Eskom Holdings SOC (Ltd), herein also referred to as User, Client, Employer.
OEM	Original Equipment Manufacturer
TET	Technical Evaluation Team

2.5 Roles and responsibilities

All the Eskom employees and/or appointed bodies involved in the tender technical evaluation shall use this evaluation criterion or standard.

Commercial – Make use of the up to date version of this document during commercial processes.

Project Management (PM) – Make use of the up to date version of this document during commercial processes and all stages of projects.

Technical evaluation team (TET) members – Implement the contents of this document applicable to equipment covered by its scope. Technical evaluation report shall be compiled for Eskom purposes that indicates and refers to the clauses of this document.

2.6 Process for monitoring

Not Applicable

2.7 Related/supporting documents

The relevant AB schedules shall form part of the evaluation and all applicable IEC, IEE, SANS, and NRS standards referenced in the main specification.

3. Requirements

3.1 Document identification

The technical bid documents must be labelled in accordance with the "**Bid Section #**" as indicated in the relevant annexes of the Specification 240-171000117, its nominative references therein, and this standard (if applicable). **It is essential that this labelling structure is followed.** Additional information, not related to the criteria defined, can be labelled according to the bidders preference. Information submitted must be relevant to the solution offered, relevant to the criteria being assessed and, in all cases, must be in English.

Bidders are required to submit detailed, well-structured reports together with supporting evidence for the evaluation of their bid. Bidders should aim to submit sufficient detail and supporting evidence applicable to their design that confirms the suitability of their design, their capability to execute all aspects of the work and demonstrates how the offer meets the requirements of the criteria stipulated in this document and that of the main specification 240-171000117.

Supporting evidence can be in the form of compliance statements, commitment statements, design documents, engineering reports, calculations, studies, proposals, technical A & B schedules, test reports, project schedules, detailed project references, drawings, test results, or certificates as may be applicable in demonstrating compliance to requirements stipulated in 240-171000117/118.

3.2 High level scope

Unless otherwise stated by the Procurement documentation, the scope of work shall be the design, manufacture, testing, supply, delivery, off-loading, installation, testing, building, commissioning of the DSTATCOM, and provide technical training.

3.3 Desktop evaluation

This evaluation exercise is performed by the Eskom technical evaluators. Evaluation starts when the technical submissions are opened for the first time. Stage 1 is done for the basic mandatory requirements and then proceed to stage 2 for scoring using relevant Annexures A to C of this standard.

Table 1: Basic Mandatory Requirements (BMR), Section 3.3.1 of 240-171000117

Item	Required document	Submitted (Yes/No)	Comments
1	Compulsory Site Clarification project visit attended		
2	Single line diagram or Drawings of the DSTATCOM submitted. Provided a list of all material and equipment.		
3	Completed the Schedule A & B for the DSTATCOM in Annex A of the main specification		
4	Provided a list of Reference installations for similar projects or scope		
5	Indicated Tests to be done on material and equipment		
6	Deviation schedule completed		

If any of the items in Table 1 above is not met or submitted, there will not be any further evaluation done for functional and technical scoring for this bidder.

4. Technical criteria evaluation process

4.1 Criteria

Bidders are directed to the requirements stipulated in the following sections and criteria contained in the annexes of this document.

4.2 Evaluation Process

1) Basic Mandatory Requirements (BMR) as defined in 240-171000117 is assessed first. Only bid submissions that meet all the criteria of the BMR in Table 1 will be assessed further for Technical and Functional scoring. Scores shall be full marks (100%) or Nil (0%) for each item assessed.

2) For each bid passing the BMR, further evaluation and scoring will be conducted against the criteria defined in Annex A to Annex B, allocating a score for each Item stipulated in the various annexes using points in accordance with Table 2.

Table 2: Scoring Matrix, Points allocation method

(%)	Definition
100	**COMPLIANT** • Meet technical requirement(s) AND; • No foreseen technical risk(s) in meeting technical requirements;
0	**NON-COMPLIANT** • Does not meet technical requirement(s) AND/OR; • Unacceptable technical risk(s) AND/OR; • Unacceptable exceptions AND/OR; • Unacceptable conditions. AND/OR; • Totally Deficient Or Non-Responsive
Note 1: Foreseen acceptable risk(s), exceptions and conditions includes: • Evidence that is missing or in conflict with the requirements that is considered minor, correctable prior to contract award and does not prevent the evaluating team from making a confident evaluation of the offer. **Note 2:** Foreseen unacceptable risk(s), exceptions and conditions includes: • Evidence that is missing or in conflict with the requirements that is considered a significant deficiency in the design or capability of the contractor and/or significant deviation from the requirements or The Employers intent.	

3) A score for Annex A will then be calculated as a percentage of the total score obtained / 200 for Score A (functional), and the score for Annex B will then be calculated as a percentage of the total score obtained / 80 for Score B (technical) in percentages.

4) The weightings defined in Table 3 will be applied in determining the final score for each evaluated bid that has passed the BMR stage. The final calculated evaluation score will be in Annex C.

5) Items requiring clarifications (if any) will be communicated to the bidder for official response. The bidder will be given a period of 5 working days to respond on issued clarification requests.

6) Only bids that have a total score in Annex C which is above the stipulated Threshold will then be allowed to progress further in the procurement process. **The stipulated Threshold is 80 %.**

7) At Eskom's discretion, the bidder may be required to provide a presentation on their technical offer to the cross-functional team.

a) The presentation should cover all of the sections in 240-171000117 and criteria stipulated in this document, as well as any technical clarification requests issued, or deficiencies identified.

b) The presentation must indicate and inform on how the Eskom requirements are met. The presentation must be submitted to Eskom for record.

c) A question-and-answer session will follow the bidder's presentation, bidder must have in attendance the necessary technical staff to respond to questions on aspect of the technical offer.

d) All responses will be recorded and, on review and acceptance of the bidder, will form part of the minutes of the meeting.

e) The bidder will be given 5 working days to respond on any outstanding items requiring clarifications arising from the meeting (if any).

8) At Eskom's discretion, an inspection of bidder's premises and related manufacturing facilities may be undertaken. Details and expectations of the inspection will be communicated a minimum of four weeks prior to this option being exercised.

Table 3: Scored evaluation criteria

No.	**Technical Criteria** (**Only scored if all Basic Mandatory Requirements have been met)**	**Applicable section in this document**	**Main Specification/ Document**	**Criteria Weighting (%)**
1.	**Functional specification evaluation**	Annex A	240-171000117	**80**
2.	**Technical specification evaluation**	Annex B	240-171000117	**20**
The minimum weighted final score (**threshold**) required for a bidder to be considered further is **a minimum score of 80%.**				**TOTAL: 100**

The final score for the combined Technical and Functional evaluation of the DSTATCOM solution offered in Annex C of this standard will be documented in a standard technical evaluation report.

5. Authorization

This document has been seen and accepted by:

Name and surname	**Designation**
Bheki Ntshangase	Senior Manager – Transmission Asset Management SED
Neels Van Staden	Senior Consultant – TX Power Electronics (HVDC & FACTS) devices
Selby Mudau	Chief Engineer – TX Power Electronics & FACTS devices
Masekoala Marake	Project Co-ordinator
Lehlohonolo Mashego	Snr Engineer – Grid Planning
Tjaart Van Der Walt	Snr Technologist Electrical
Thandiwe Nkambule	Snr Manager Asset Creation
Molefi Rantsonyane	Snr Manager Maintenance & Operations
Mfundi Songo	Snr Manager Engineering
Azwimbavhi Mamanyuha	General Manager Engineering
Nhlanhla Mbuli	Corporate Specialist
Jack Mathebula	Middle Manager – Grid Planning

6. Revisions

Date	**Rev**	**Compiler**	**Remarks**
April 2023	1	Selby Mudau	This is a new document

7. Development team

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

- Selby Mudau

8. Acknowledgements

Not applicable.

Annex A – Functional Requirements scoring for a ±1 MVAr 22 kV DSTATCOM

Name of Tenderer:			
Name of evaluator:		**Date of Evaluation:**	
Specification	**240-171000117 – Development of Functional specification for Distribution STATCOM**		

Item	Activity and Description of area evaluated (Functional)	Clause in Spec 240-171000117	Points awarded if Item is compliant
1.0	A & B Schedule for the DSTATCOM completed in full, and in English	3.3.1(c); Annex A	[15]
1.1	All Information is supplied in English	3.3.1(c); Annex A	[10]
2	DSTATCOM technology is any of the listed technologies in 1(1) to (5) as per the recommendation of the RFI.	1(1)-(5)	[5]
3	Bidder confirms to read and comprehend the Nominative and Informative reference documents	2.2	[5]
4	DSTATCOM drawings, list of material, and requirements supplied	3.3.1 (b)	[10]
5	List of reference installations for similar projects completed (not older than 10 years)	3.3.1 (d)	[10]
6.0	Voltage Source Converter (VSC) used as the power electronic converter for the offered DSTATCOM	4.1	[10]
6.1	Voltage Source Converter (VSC) used in Delta configuration (Yes/No)	4.1; Annex A (45)	[10]
6.2	Grid-Following or Hybrid DSTATCOM offered	4.1.7	[5]
7	DSTATCOM technology solution fit for purpose to address distribution voltage challenges (Volt/Var regulation, reactive power compensation, and increase the renewable energy sources integration)	1; 4.1.7.1	[5]
8	List or Report with details of protection functions implemented	4.1.7.1; 4.2	[5]
9	Control system for the DSTATCOM uses the open loop and closed-loop control systems that is fully programmable on a computer control system	4.3	[5]
10	The DSTATCOM system will meet the grid code or network system frequency of 50 Hz and operate within limits as per specification	4.3; Table 7	[5]
11	Preliminary list of Operating or control modes and algorithms implemented, and how these will be tested for acceptance (Applicable and non-applicable)	4.3.1; 4.4	[5]

12	Cooling system. The user requirement preference is Forced-air cooling or hybrid cooling systems	4.6.4	[5]
13	List of preliminary indications, alarms, and controls (Protection, Control, and Cooling systems) for the design offered. This shall include both Local and remote indications.	4.7; Table 9	[5]
14.0	RAM & Guarantees, Spares, Special tools, and Spares strategy with calculations or list of enough holding spares to support RAM performance	4.8; 8	[10]
14.1	Availability of 99.7 % guaranteed	8.2.1 (b)	[5]
14.2	Instruction manuals and design documentation supplied with Bid documents	8.2.2 (all)	[5]
14.3	HMI to be supplied, installed, and configured	8.2.3	[5]
15	Installation considerations noted (Yes/No)	4.8.1	[5]
16	Network or system parameters and feeder data read and acknowledged (Yes/No)	5.1; Table 10	[5]
17	Tests (all tests, including type and routine tests) and test certificates to be offered by the contractor	9; 9.5 – 9.6	[5]
18	Training (Resume or CV) and experience in equipment design and/or training	11.1 (k)	[5]
19	Report or statement submitted, confirming the diagnostics method and equipment used to do online condition monitoring and diagnostics on the DSTACOM	12	[5]
20	Life Cycle Management Plan (Asset management plan provided with LCMP for the DSTATCOM)	3.3.6	[5]
21	DSTATCOM enclosure or housing vermin proof, and the spares to be stores secure and free from vermin and dust	4.8.1 (a); 8.1.1 (g)	[5]
22	Anti-vibration and seismic requirements meet the specifications	4.8.1 (b)	[5]
23	Connection method on 22 kV MV Feeder, direct connection with no transformer (Yes/No)	5.1; Table 10; 6; Table 12; Annex A	[10]
24	Service life of the DSTATCOM > 30 years, and MTBF for P&C is > 15 years. Both conditions guaranteed (Yes/No)	Annex A (28)	[10]
	TOTAL SCORE (A)		**[200]**
	SCORE A % = $\frac{\text{Score A x 100}}{200}$		

Annex B – Technical Evaluation score for a ±1 MVAr 22 kV DSTATCOM

Name of Tenderer:			
Name of evaluator:		**Date of Evaluation:**	
Specification	**240-171000117 – Development of Functional specification for Distribution STATCOM**		

Item	Description and area evaluated (Technical)	Clause in Spec 240-171000117	Points awarded if Item is compliant
1	DSTATCOM Efficiency > 99%	Annex A (12)	[5]
2	Extended overload (current) rating for 1 minute > 1.3 x	Annex A (13)	[5]
3	Fault Ride-through Capability (MVAr), Short term overload capability > 300% for 2 seconds	Annex A (16); Annex A (41)	[5]
4	Full current output at reduced voltages of 0.3 pu (Yes/No)	Annex A (18)	[5]
5	Harmonic Distortion < 0.3 %	Annex A (20)	[5]
6	DSTATCOM Losses < 0.5 %	Annex A (25)	[5]
7	DSTATCOM with no maintenance and no moving parts	Annex A (27)	[5]
8	Noise limits not exceeding 80 dBm at 2m from the equipment boundary	Annex A (29)	[5]
9	Operating Temperature Range within required limits	Annex A (31)	[5]
10	DSTATCOM offered is Portable, or a Pole mounted System	Annex A (33)	[5]
11	Power Factor (Pf) Correction > 0.95 continuously guaranteed	Annex A (35)	[5]
12	Protection System & Control systems have dual redundancy.	Annex A (36)	[5]
13	Response Time < 5 ms	Annex A (39)	[5]
14	Settling Time < 100 ms	Annex A (40)	[5]
15	Voltage and Current THD Limits < 3% met (Yes/N)	Annex A (47)	[5]
16	Voltage Unbalance < 2 % (Yes/No)	Annex A (51)	[5]
	TOTAL SCORE (B)		**[80]**
	SCORE B % = $\frac{\text{Score B x 100}}{80}$		

Annex C – Final Technical evaluation score calculation for a ±1 MVAr 22 kV DSTATCOM

Equipment and/or material to be used in the design on offer. Copies of this template may be used if more equipment and materials are required. Ensure all pages are signed, dated, and stamped.

Name of Tenderer:			
Name of evaluator:		**Date of Evaluation:**	
Specification	**240-171000117 – Development of Functional specification for Distribution STATCOM**		
Evaluation Tendering Score	**Evaluation score (%) from Annex A and Annex B**	**Weight**	**Weighted score**
Functional Score – (A)		80 %	Score A x 80 % =
Technical Score – (B)		20 %	Score B x 20 % =
		FINAL SCORE =	(A) + (B) =
Threshold is 80% for submission to pass Technical compliant or be successful. Only bids scoring higher than the 80% threshold will proceed further with other evaluation stages.			**Successful / Not successful**