

 Eskom	Standard	Transmission
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Title: **TECHNICAL EVALUATION
CRITERIA FOR HIGH VOLTAGE
AIR INSULATED SWITCHGEAR -
OUTDOOR DISCONNECTORS
AND EARTHING SWITCHES**

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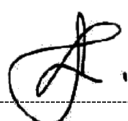
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1. Introduction

This standard is aimed at setting the Eskom Transmission standardised technical evaluation criteria to be used when evaluating the Tenderer(s) technical submissions. This covers the technical evaluation of the air insulated switchgear (AIS) outdoor disconnectors (conventional type, pantograph type and knee type) and earthing switches, as well as their associated electronic devices and the equipment training for Eskom Transmission personnel. It has Annexures developed to address various aspects required to perform the technical evaluation and factory design reviews inspections. It has been drawn from the equipment Standards.

Each voltage level according to the issued Technical A & B Schedules shall be treated and evaluated separately through all the technical evaluation stages contained in this document. The successful Tenderer, prior to manufacturing the first Eskom Transmission specified switchgear, shall be required to prepare for a detailed Design Reviews with the Eskom Technical Evaluator(s), and this will be conducted also at the manufacturing premises with the Supplier, unless Eskom Transmission discretion determines otherwise.

After the manufacturing of the first Eskom Transmission specified switchgear, the Supplier and its OEM factory shall prepare for and notify Eskom Transmission to attend the Factory and Acceptance Testing (FAT) and inspection to compliance to Eskom Transmission standard specification requirements and if all noted deviations have been addressed. Upon the first delivered Eskom Transmission specified switchgear, the Supplier shall arrange for Eskom Transmission to attend the inspection to ensure compliance to Eskom Transmission specification requirements. The Supplier shall arrange with Eskom Transmission to attend the first of installation and testing of the Eskom Transmission specified disconnector and/or earthing switch, during this time the first training shall be offered. The Supplier shall roll out training as a once-off event, to Eskom Transmission Grids switchgear personnel along the provincial boundaries.

2. Supporting clauses

2.1 Scope

This standard covers the technical evaluation criteria for all air insulated switchgear (AIS) outdoor disconnectors (conventional type, pantograph type and knee type) and earthing switches, as well as their associated electronic devices and the equipment training for Eskom Transmission personnel.

2.1.1 Purpose

This standard addresses the standardised documented technical evaluation criteria to be used when performing the technical evaluation of the Tenderer(s) technical submissions in line with Eskom Transmission requirement. The technical evaluation report shall be compiled for Eskom purposes, based on this document specified evaluation criteria.

2.1.2 Applicability

This document shall apply throughout Eskom Transmission.

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

NOTE: IEC standards (including IEC documents adopted as SANS standards without changes)

- [1] ISO 9001, Quality Management Systems.
- [2] Occupation Health and Safety Act (OHS Act) No 85 of 1993 – Construction and Electrical Machinery Regulations.

- [3] SANS/ IEC 60050(441):1984: International Electrotechnical Vocabulary – Chapter 441: Switchgear, controlgear and fuses
- [4] SANS 62271-1, High-voltage switchgear and controlgear – Part 1: Common specifications.
- [5] SANS 62271-102, High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches
- [6] SANS 62271-203, High-voltage switchgear and controlgear – Part 203: Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV
- [7] 240-180000569, Specification for High Voltage Air Insulated Switchgear rated for Voltages 1 kV and above - Outdoor Disconnectors and Earthing Switches
- [8] MEMORANDUM: Simplified Technical Evaluation Process of Equipment Commodity Suppliers, dated 19 March 2023 (this document is internal to Eskom Transmission)

2.2.2 Informative

- [9] 32-1034, Eskom procurement and supply management procedure

2.3 Definitions

2.3.1 General

Definition	Description
Isolator (standard IEC name – “Disconnector”)	[IEV 441-14-05 definition] The mechanical switching device which provides, in the open position, the isolating distance in accordance with the specified requirements. [Additional Notes from SANS 62271-102 definition 3.4.101] Note 1: Negligible current" implies currents such as the capacitive currents of bushings, busbars, connections, very short lengths of cable, currents of permanently connected grading impedances of circuit-breakers and currents of voltage transformers and dividers (see also IEC 62271-305). For rated voltages of 420 kV and below, a current not exceeding 0,5 A is a negligible current for the purpose of this definition; for rated voltage above 420 kV and currents exceeding 0,5 A, the manufacturer should be consulted. "No significant change in voltage" refers to such applications as the by-passing of induction voltage regulators or circuit-breakers and bus transfer. Note 2: For a disconnector having a rated voltage of 52 kV and above, a rated ability of bus transfer current switching may be assigned.
Earth Switch (IEC standard name – “Earthing Switch”)	[IEV 441-14-11 definition] The mechanical switching device for earthing parts of the circuit, capable of withstanding for a specified time currents under abnormal conditions such as those of short-circuit, but not required to carry current under normal conditions of the circuit. Note: An earthing switch may have the short-circuit making capacity.
Submission	The tender in accordance with the requirements of the enquiry
Threshold for qualification	This is the threshold that has been determined by Eskom Transmission technical evaluation, which the technical submission must meet in-order to proceed with the technical evaluation after scoring stage.
Technical Evaluator	End-users, technical experts nominated by the end-user and Eskom Transmission technical functionaries with the necessary technical expertise. NB: The switchgear technical evaluation shall be performed by the switchgear representatives in the Commodity Cross Functional Team.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
AM SED	Asset Management, Substation Equipment and Diagnostics
CG	Care Group
DS	Disconnecter
Eskom	Eskom Holdings SOC (Ltd)
ES	Earthing Switch
OEM	Original equipment manufacturer
PTM&C	Protection Telecoms Metering and Control
SANS	South African National Standards
STT	Switchgear Task Team
Tx	Transmission
USB	Universal Serial Bus

2.5 Roles and responsibilities

Tx AM SED – shall ensure that the approved standard is in place for use by Eskom Transmission. Compiles this document with inputs from the switchgear Care Groups and Task Teams (namely, AIS CG and Tx STT) and Substation Engineering, PTM&C and Research. Maintains this document up to date with the technical standard specification.

Commercial Management/ Procurement Management – Make use of the up to date version of this document during procurement processes.

Project Management and Contract Management – Make use of the up to date version of this document during procurement processes and all stages of projects or asset creation.

Grids, Asset Management, Quality Management and Warehouse Management (Logistics) – Make reference to this document and the technical standard specification during switchgear asset entering service

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

The Supplier or Tenderer – shall ensure that the Eskom Transmission requirements on this document and the Eskom Transmission standard specification (240-180000569) are complied with in-order for technical evaluation of their tender technical submission.

2.6 Process for monitoring

None.

2.7 Related/supporting documents

Related Documents:

- Technical A & B Schedules,.

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-
- GA Outline drawings
 - Wiring Schematic drawings
 - Nameplate drawings

This standard specification supersedes these documents in Eskom Transmission:

240-46425564 Rev 7, Technical evaluation criteria for High Voltage Switchgear standard

3. Technical Evaluation Criteria for High Voltage Air Insulated Switchgear – Outdoor Disconnectors and Earthing Switches

This document contains the technical evaluation criteria for air insulated switchgear (AIS) outdoor disconnectors (conventional type, pantograph type and knee type) and earthing switches, as well as their associated electronic devices and the equipment training for Eskom Transmission personnel.

All Tenderers shall submit complete technical documentation required for the technical evaluation (subclause 3.2 and Annex A or Annex B). The evaluation process has these parts, namely, Desktop (Stage 1 and Stage 2) and after Eskom has selected the potential successful Supplier/Tenderer for contract awarding, then Design Reviews at their manufacturing facility. Design Reviews at the factory shall be undertaken post contract award.

All Tenderers who are supplying, any of switchgear covered by this document (namely, disconnectors and earthing switches and associated accessories) to Eskom Transmission currently and have not changed their product and their manufacturing plant (factory) will be exempted from the technical evaluation (subject to them indicating compliance to the current issued Eskom Transmission standard specification, 240-180000569), but they shall still submit all required technical documents listed in (subclause 3.2 and Annex A: Table 1) and complete the declaration form to indicate if there are changes to their product or not, also confirm compliance to the current Eskom Transmission standard specification, 240-180000569. Eskom Transmission shall assess the changes (in accordance with the issued current Eskom Transmission standard specification, 240-180000569) and decide if the Tenderer qualifies or not.

Below are the detailed contents of the Eskom Transmission Technical Evaluation Criteria for High Voltage Air Insulated Switchgear (AIS) – Outdoor Disconnectors and Earthing Switches.

3.1 Scope of Work (Supply)

Unless otherwise stated by the procurement documentation, the scope of work (of supply) shall be the design, manufacture, testing, packaging, supply, delivery, off-loading, installation, testing, commissioning and building of the switchgear and to provide technical training in accordance with Eskom Transmission disconnectors and earthing switches standard specification (240-180000569).

3.2 Design and construction

This evaluation exercise is performed by the Eskom Transmission Technical Evaluator(s). This part of the evaluation starts when the tender technical submissions are opened for the first time. It begins at evaluation of the Mandatory criteria Stage 1, then proceeds to the Scoring – Stage 2, and refers to relevant Annex for each switchgear item required (refer to Annex A and Annex B).

The Eskom Transmission Technical Evaluator(s) will go through the details of the returnable submissions that are required and will ensure that Stage 1 qualification criteria are met. Stage 1 returnables are the following:-

- 1) Completed Technical A & B schedules
- 2) Type test reports
- 3) Drawings
- 4) OEM Operation and Maintenance Instruction Manuals

NOTE: If the above 4 returnables are not available on each tender technical submission of that particular item tendered for, that tender technical submission is disqualified.

Only the tender technical submission that has complied with the Stage 1 requirement, shall be taken through to Stage 2 of Desktop evaluation. The full scoring that the technical submission can score under Stage 2 is 100%. The technical threshold for qualification is 75%.

The successful tender technical submission that scores 75% and above, shall be considered for further technical evaluation process. Any tender technical submission that scored below 75% is disqualified for any further evaluation.

3.2.1 The successful tender technical submission which meets the threshold of 75%

The Eskom Transmission Technical Evaluator(s) shall perform the following to the tender technical submission that has successfully met the technical threshold for qualification of 75%:-

- a) The list of technical deviations shall be compiled.

NOTE: It must be noted that when the Supplier has listed the technical deviations on an offered item, it does not mean that such are already acceptable to Eskom Transmission.

- b) The Supplier(s)/ Tenderer(s) of the item that meet technical threshold for qualification threshold will be included in the confidential Technical Evaluation Report that is handed over to internal Eskom Transmission's processes of further evaluations, in order to select the successful potential Supplier(s).
- c) The Eskom Transmission registered confidential Desktop Evaluation Report which indicates the technical submission items that were received from Tender Office submitted documentation and evaluated by Technical Evaluator(s) and those that were found to be meeting the technical threshold for qualification, will be presented to Eskom Transmission Commercial. The subsequent selection of the potential successful Supplier(s)/ Tenderer(s) and their factory who meet Eskom Transmission requirement for contract awarding shall be addressed.

It shall be noted that after Eskom Transmission has selected the potential successful Supplier(s)/ Tenderer(s) for contract awarding, subject to Eskom Transmission discretion, that shall be subjected to further technical interaction which amongst others includes Design Reviews at the OEM factory manufacturing facility, also addressing the technical deviations that form part of the Objective or Discretionary requirements.

3.3 Design Reviews at the factory (only Eskom Transmission selected Supplier)

The Supplier and OEM factory of the successful tendered item(s) that meet Eskom Transmissions conditions for contract awarding shall, subject to Eskom Transmission discretion, be approached for the OEM factory visit for purpose of Design Reviews and addressing technical deviations to meet the Eskom Transmission standard specification (240-180000569).

The purpose of the factory visit is to perform the Design Reviews, to assess the capability of the factory to deliver the requirements. The Design Reviews at the factory is to ensure the product meets the Eskom Transmission technical requirements as specified. During this visit Eskom Transmission will also discuss the technical deviations that the Technical Evaluator(s) found during the Desktop evaluation. The Technical Evaluator(s) shall populate the applicable Product Inspection Checksheets for all findings, and these shall be raised with the Supplier and Factory Representatives and recorded under the Design Reviews Inspection Agreement (Annex E). An Eskom Transmission confidential report will be produced for this factory visit. This will be taken into account for the contract and honouring of Eskom Transmission specified requirements.

The Technical Evaluator is responsible to explain to the Tenderer and factory representatives that the purpose of the factory visit is a Design Review to ensure the product compliance with Eskom Transmission requirements as specified.

NOTE: Where applicable, the minimum required notification period for overseas travel from South Africa is 12 weeks.

3.3.1 OEM factory visit (Design Reviews)

Eskom Transmission Technical Evaluator(s) shall communicate with the selected Supplier/ Tenderer and their factory for the factory visit of the technical item (product) that has been selected by Eskom Transmission for contract awarding. This factory visit will be for the purpose of Design Reviews inspections to assess the capabilities of the factory, machinery, skills and technical processes, to ensure the factory can deliver on the Eskom Transmission specified requirements and technical deviations addressed. The following will be included:-

- Equipment detailed engineering design, tested capabilities and OEM factory awareness of limitations
- Verify the type test records kept by factory – of copies received during tendering.
- Designed equipment drawings and alignment to Eskom Transmission standard interface drawings
- Where applicable, design details of – electronic controller, on-line condition monitoring and/or integrated diagnostic device; secondary control and protection devices (including the optional digital secondary plant interface)
- Design Practices and Application
- Manufacturing Methods and Workshop Practices – and Factory Performance (including the On Time Delivery (OTD), Factory Failure Rate (FFR)) and
- Raw material sourced, Metallic parts and Sub-contractor practices,
- Manufacturing - Inspection Test Plans (ITP's), the system implementation for the compliance to Eskom Transmission specified requirements
- Packaging, handling, product preservation requirements and Storage
- Testing Facility and Practices
- Site and Other Services – Inspection Test Plans (ITP's), compliance to Eskom Transmission specified tests
- OEM Instruction Manuals compliance to Eskom Transmission standard specification – development of maintenance digital video record (portable format e.g. USB memory stick)
- Training of the Eskom Transmission switchgear personnel - Maintenance

3.3.1.1 OEM factory visit – deviations, product inspection and recorded details

At the factory that is being visited, the Eskom Transmission technical representatives that were part of the Technical Evaluators shall raise all the technical deviations captured during Desktop Evaluation, that form part of the Objective or Discretionary requirements with the Supplier and OEM factory. Furthermore, they shall inspect the offered product (offered equipment design) in accordance with the Eskom Transmission standard specification and record any visible deviations on the Checksheets (Annexes C, D and E). Eskom Transmission, Supplier and OEM factory representatives shall discuss to resolve these deviations and capture the list all those deviations that still require action taken by the Supplier and OEM factory on the Design Reviews Deviations Inspection Agreement document (Annex E). The action dates and department to resolve the deviations shall be clearly indicated.

The Checksheets and Deviations Inspection documents are used to compare the offered product (item) compliance to the Eskom Transmission standard specification. Any deviations to be raised with the Supplier and OEM factory, and all those deviations that were found by Eskom Transmission during Desktop evaluation shall be listed on the Deviations Inspection Agreement document (Annex E) and signed-off.

After the technical OEM factory visit, Eskom Transmission shall compile a Factory Visit Design Reviews Report taking into account the Desktop Evaluation Report and the Objective or Discretionary requirements (deviations still to be addressed and dates).

3.4 Post contract award - closing out deviations and final Eskom Tx product

3.4.1.1 Finalisation of the design/ pre-construction review (pre-manufacturing)

NOTE: Where applicable, the minimum required notification period for overseas travel from South Africa is 12 weeks.

Prior to manufacturing and onsite works, the following shall be addressed by the Eskom Transmission technical representatives that were part of the Technical Evaluators with the successful Supplier and their OEM factory:-

- Closing out of technical deviations listed during OEM factory visit on the Deviations Inspection Agreement document (Annex E). All outstanding technical deviations and/ or factors shall be closed out within the agreed time frames.
- Final drawings commenting and approval sign-off – equipment, secondary wiring schematics, and where applicable, the optional digital secondary plant interface
- Training documentation and the details of training rollout strategy as per Eskom Transmission standard specification (240-180000569)
- OEM Instruction Manuals compliance to Eskom Transmission standard specification – development of maintenance digital video record (portable format e.g. USB memory stick)

3.4.1.2 Factory Acceptance Tests and witnessing of Routine testing (manufacturing)

Eskom Transmission shall witness factory and routine testing (FAT). During this visit all the electronic controller or on-line condition monitoring and/or integrated diagnostic device and secondary control and protection devices (including the optional digital secondary plant interface) shall be inspected and witnessed their designed functionality. The following shall be included:-

- Manufacturing - Inspection Test Plans (ITP's), the system implementation for the compliance to Eskom Transmission specified requirements
- Packaging, handling and product preservation requirements

3.4.1.3 Inspection of the first off installations and final closing out of deviations

Upon knowledge of the first delivery and first installation dates of the Eskom Transmission specified disconnecter and/or earthing switch, the Supplier shall well in advance notify the Eskom Transmission technical representatives that were part of Technical Evaluators to make necessary arrangement to meet at site of delivery or installation. The two parties shall inspect the delivered disconnecter and/or earthing switch for compliance with Eskom Transmission standard specification (240-180000569), and ensure all outstanding technical deviations and/ or factors that the Supplier and OEM factory agreed to rectify as per the signed Deviations Inspection Agreement document (Annex E) are closed out. In case there are few deviations that had been targeted to be addressed on a different time frame (longer date), example:-

- The training documentation readiness
- Development of maintenance digital video record (portable format e.g. USB memory stick)

the Eskom Transmission technical representatives that were part of Technical Evaluators shall make the follow-up to ensure closing out post contract award.

If training documentation is resolved, then two parties shall address as per clause item .

3.4.1.4 Training of Eskom Tx switchgear personnel upon the first off installations within province

The Supplier shall well in advance notify Eskom Transmission technical representatives that were part of Technical Evaluators of the site of first installation at the province. Eskom Transmission representatives shall arrange within Eskom who shall attend as per agreement.

4. Authorization

This document has been seen by:

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Name and surname	Designation
Bheki Ntshangase	Senior Manager Substation Equipment & Diagnostics
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Matome Matlhadisa	Transmission HV Plant Corporate Consultant
Lerato Morife	Middle Manager Procurement, Commodity Sourcing, Transmission Commercial

5. Revisions

Date	Rev.	Compiler	Remarks
Oct 2023	2	S Nkosi	Final authorised official document – Incorporating all contents of the MEMORANDUM [8] subclause 12 (refer to this document subclause 3, 3.2 and 3.3)
Mar 2023	1	S Nkosi	Oct 2023 – a request to revisit this document revision in-order to incorporate all contents of the MEMORANDUM [8]
Jan – Feb 2023	0.3	S Nkosi	Circulated for comments to interested and affected parties.
Oct-Dec 2022	0.2	S Nkosi	Prepare the technical evaluation criteria; exclude details of circuit-breakers and HVDC; update factory visit
Sept 2022	0.1	S Nkosi	New document applicable to Eskom Transmission only with its 240-numbering, which will focus on disconnectors and earthing switches only
Sept 2015	6	S. Nkosi	240-46425564 Rev 7 Final Document for Authorisation

6. Development team

The following people were involved in the development of this document as well as previous revisions of this standard. The original document was compiled by Transmission and Distribution switchgear representatives.

- Sphiwe Nkosi Substation Equipment & Diagnostics, Asset Management, Transmission
- Jabulani Cebekhulu Substation Equipment & Diagnostics, Asset Management, Transmission

7. Acknowledgements

The Compiler acknowledges the contributions to this new document and all those who contributed on the last 240-46425564 Rev 7.

Annex A – Technical evaluation criteria for desktop exercise – DS and ES

Below is Eskom Transmission technical evaluation criteria for desktop exercise for outdoor disconnectors and earthing switches:-

Table 1: Basic compliance and scoring criteria for outdoor disconnectors and earthing switches

1	STAGE 1- BASIC COMPLIANCE: TENDER DELIVERABLES AND MANDATORY TECHNICAL REQUIREMENTS FOR DS & ES			
Item	Description of technical requirement	Weight	Yes / No	Eskom assessment
a)	The completed Technical A&B schedules (of the Disconnectors and/or Earthing Switches.)			
b)	List of type test reports (The copies of the type- test reports)			
c)	Drawings and constructional features <ul style="list-style-type: none"> The general arrangement outline drawing (for each offered disconnector type or earthing switch type) 			
	<ul style="list-style-type: none"> Wiring diagrams (Electrical secondary wiring schematics (NOTE: This shall include the wiring schematics of the offered electronic controller and/or condition monitoring device and Optional digital interface) 			
	<ul style="list-style-type: none"> Rating / Name plates 			
d)	Operation and Maintenance Instruction Manuals			
	NB : FAILURE TO SUBMIT THE TENDER RETURNABLES IN STAGE 1 ABOVE SHALL RENDER THE TENDERER NON-RESPONSIVE AND WILL BE DISQUALIFIED FOR FURTHER EVALUATION			
2	SCORING AGAINST CRITERIA FOR EVALUATION – STAGE 2 (Total = 100 %, threshold for qualification = 75 %)			
Item	Description of technical requirement	Met	Weight	Score
a)	Rated values and characteristics (correct value) NB: If one requirement is not met 26 % is automatically deducted		26 %	
	Rated voltage (U_r); Rated normal current (I_r) and Temperature rise; Rated Power frequency withstand Level (PFWL) – (U_d); Rated Lightning Impulse withstand voltage (peak) (LIWL) - (U_p) Rated Switching Impulse withstand voltage (peak) (SIWL) - (U_s) (applicable to $U_r \geq 245$ kV); Rated Short-Time Withstand Current (I_k) Rated Peak Withstand Current (I_p) Specified creepage distance (response on Technical B schedule);			
b)	Type test reports NB: If one requirement is not met 26 % is automatically deducted		26 %	

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	a) Power frequency withstand voltage tests (SANS 62271-102 subclause 7.2); b) Lightning impulse dry withstand voltage tests (SANS 62271-102 subclause 7.2); c) Switching impulse voltage tests (SANS 62271-102 subclause 7.2) (applicable to $U_r \geq 300$ kV); d) Measurement of the resistance of main circuit (SANS 62271-102 subclause 7.4.4); (<i>applicable to disconnecter only</i>) e) Continuous Current Tests (temperature rise) (SANS 62271-102 subclause 7.5); (<i>applicable to disconnecter only</i>) f) Short time withstand current and Peak withstand current tests (SANS 62271-102 subclause 7.6); g) Operating and mechanical endurance tests (SANS 62271-102 subclause 7.102.3);			
	NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.		6 %	
	<u>The Supplier/ Tenderer shall provide the following or the written commitments to perform these tests subject to contract award:-</u> h) Radio interference (RIV) test (SANS 62271-102 subclause 7.3) (applicable to $U_r \geq 123$ kV); i) Verification of the degree of protection (SANS 62271-102 subclause 7.7); j) Extended mechanical endurance test ((SANS 62271-102 subclause 7.102.5)) (as specified by Eskom Transmission on the Technical Schedule section A)			
c)	Drawings and constructional features (GA outline drawing) NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.		10 %	
	Drawing number Detailed description provided in "Title". Overall dimensions Main HV terminal details Indication to interface with Eskom Transmission standard drawing			
d)	Wiring diagrams NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.		10 %	
	Drawing number Detailed description provided in "Title" Details of secondary terminals (DS – 7G; 7M; 7N) (ES – 5M; 5N) Indication to interface with Eskom Transmission standard drawing			

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e)	Rating / Name plates NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.	6 %	
	Name of manufacturer Type designation and serial number Technical rating details		
f)	Manuals and requested information (operation & maintenance) NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.	10 %	
	<ul style="list-style-type: none"> Manuals submitted in both hardcopy & Electronic copy and in written in English. Following topics covered:- <ul style="list-style-type: none"> Transport, storage, installation, operation instruction and maintenance Dismantling, repair, settings, inspections & lubrication List of special tools and List of recommended spares parts 		
g)	Training Standard compliance NB: The score will be the ratio of the successfully met over the total number of items listed here-under, then multiplied by the weight.	6 %	
	NOTE: Refer to, Eskom Transmission standard specification: 240-180000569 – taking into account the Eskom Transmission specified details of training:- <ul style="list-style-type: none"> Written commitment by supplier to provide training and develop training material as specified – disconnecter and earthing switch and its accessories including Electronic Controller and/or Online Condition Monitoring Device and Optional digital interface Written commitment by supplier to develop and provide the maintenance digital video record (portable format e.g. USB memory stick) Written commitment by supplier to provide LOCAL aftersales technical specialist support during equipment life expectancy. 		
	Subtotal		
	Grand total	100 %	

Annex B – Switchgear training and its material


Below is questionnaire to evaluate if Training response complies to Eskom Transmission requirements.

Table 1: Questionnaire for switchgear training if it meets Eskom Transmission requirements

Questionnaire on offered switchgear training if meets requirements of the Eskom Transmission standard specification (240-180000569)			
* If the Supplier does not comply, then it shall be covered in the Deviation Schedule			
240-180000569 Clause	Question/ Item	Response (Yes or No)	Eskom Tx Assessment (Yes or No)
3.8 & Annex E	Does the Supplier provide OEM accredited instructors to do first-hand training of Eskom Transmission personnel?		
3.8 & Annex E	where applicable – Does this training include the CB's electronic online condition monitoring and/or integrated diagnostic devices?		
3.8 & Annex E	Does the Supplier provide training in English, and its training material documentation?		
3.8 & Annex E	Upon contract award, the Supplier shall prepare training material documentation with guidance of Eskom Transmission in terms of the details covered?		
3.8 & Annex E	Training material development – to be submitted to Eskom Transmission to ensure compliance with Eskom		
3.8 & Annex E	Does the Supplier offer to rollout technical equipment training on first-off delivery (installation) basis to each of the Eskom Transmission grids (at provincial level) for the duration of the contract?		
3.8 & Annex E	Does the Supplier training consist of 30% theoretical training and theoretical examination? Certification		
3.8 & Annex E	Does the Supplier training consist of 70% practical training and practical examination?		
3.8 & Annex E	Does the Supplier and OEM factory have available the intrusive switchgear technical training (major maintenance internal inspection and repairs upon breakdown)?		
3.8 & Annex E	Will the Supplier provide training as and when required?		
3.8 & Annex E	Will the Supplier agree with Eskom on location where training will be offered?		

Annex C – Factory Checksheet for outdoor disconnectors and earthing switches

Below is the Checksheet to be used by Eskom Transmission during at factory design reviews inspection on the offered outdoor disconnector and earthing switch design:-

		DISCONNECTOR AND EARTHING SWITCHES CHECKSHEET (DESIGN REVIEW)	
NOTE: This Checksheet must be completed using the Standard: 240-180000569. The deviations found shall be used for Annex D completion.			
Manufacturer (OEM) details:			
Name			
Country & City			
Supplier and OEM Factory Representatives			
Supplier rep			
OEM Factory rep			
Disconnector			
Manufacturer:		Type designation:	
Voltage (kV):		BIL (kV) & SIL (kV)	
Amp rating (A):		kA rating:	
Phase spacing (mm)		Contact Arrangement (DSB/ Knee/Panto+Trapeze)	
Insulator Manufacturer		Insulator Class C=?/ Creepage/ PCD	
Operating Mechanism			
Manufacturer:		Type designation:	
Motor Voltage (V DC):		Motor current (A):	
Hand or Motor Drive	Operating Handle Torque (Nm) (max)		
ES Auxiliary contacts (M,N):	DS Auxiliary contacts (G,M,N):		
Inspected By Eskom Tx Technical Representative (part of Evaluators)			
Name:		Signature:	
Designation:		Date:	

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Sheet Number (X of Y): ____ of ____					
Item	Items Inspected and findings made	Details on Eskom Tx Standard Specification			Eskom comments
No#		Clause	Page	Comply?	
Disconnecter/ Earthing Switch Overview – Main current path (including Trapeze assembly) and insulators					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					

Inspected By Eskom Tx Technical Representative (part of Evaluators)			
Name:		Signature:	
Designation:		Date:	

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Disconnecter & Earthing switch Operating Mechanism			
Manufacturer:		Type:	
Number of mechanisms		Facilities for manual operation:	
		ES Auxiliary contacts (M,N):	

Item	Items Inspected and findings made	Details on Eskom Tx Standard Specification			Eskom comments
		Clause	Page	Comply?	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Inspected By Eskom Tx Technical Representative (part of Evaluators)			
Name:		Signature:	
Designation:		Date:	

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Base Frame Structural Support Steelwork and Associated Fittings - clearance from ground level			
Type:		Technical details:	
Does it fit to Eskom standard interface drawing:			


Item No#	Items Inspected and findings made	Details on Eskom Tx Standard Specification			Eskom Tx comments
		Clause	Page	Comply?	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Inspected By Eskom Tx Technical Representative (part of Evaluators)			
Name:		Signature:	
Designation:		Date:	

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Annex D – Factory Design Reviews disconnectors and earthing switches Inspection Agreement

		FACTORY DESIGN REVIEWS – INSPECTION AGREEMENT							
No	DEVIATION	RESPONSE	SUPPLIER		FACTORY		Eskom Transmission		Target date
Sec	Comments	Comments	Agree	Disagree	Agree	Disagree	Agree	Disagree	
Eskom Transmission Technical Representative (part of Evaluators)									
Name:				Signature:					
Designation:				Date:					
Supplier Representative I									
Name:				Signature:					
Designation:				Date:					
OEM Factory Representative I									
Name:				Signature:					
Designation:				Date:					

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