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1. Introduction

This document has been developed to set the standard technical evaluation criteria to be used when evaluating tender submissions for mini substations used in Eskom. These mini substation product range types will include Type A mini subs, Type B mini subs and all related components per type used. The technical evaluation criteria have clauses developed to address various aspects required to perform the technical evaluation. It has been developed in line with the Eskom mini substation equipment standard 240-56062752.

This document contains both the evaluation criteria used for the documentation evaluation, factory evaluations and factory sample evaluations. In addition it contains the questions which are required for technical evaluation purposes.

2. Supporting clauses

2.1 Scope

The document covers the criteria for the evaluation of the mini substations within Dx Eskom Holdings SOC Limited (Ltd).

2.1.1 Purpose

The document addresses the standard documented technical evaluation criteria to be used when evaluating the tender submissions for the mini substations in line with the Dx Eskom Holdings SOC Limited (Ltd) requirements and it is applicable to all stages of the technical evaluations for the related tender submissions.

2.1.2 Applicability

This document shall apply for the Eskom Holdings SOC Limited, Distribution division wherein Eskom has a controlling interest.

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 National document(s)

[1] SANS 1029, Mini-substations for rated AC voltages up to and including 24 kV.

[2] SANS 1874, Switchgear — Metal-enclosed ring main units for rated AC voltages above 1 kV and up to and including 36 kV.

[3] SANS 876, Cable terminations and live conductors within air-filled enclosures (insulation coordination) for rated AC voltages from 7.2 kV and up to and including 36 kV.

[4] SANS 1332, Accessories for medium-voltage power cables (3,8/6,6 kV to 19/33 kV).

[5] SANS 121 / ISO 1461, Hot-dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods.

[6] SANS 1019, Standard voltages, currents and insulation levels for electricity supply.

[7] SANS 1091, National colour standard.

[8] SANS 60076-7, Power transformers – Part 7: Loading guide for oil-immersed power transformers.

[9] SANS 60269-2 /IEC 60269-2, Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to I.

[10] SANS 60529, Degrees of protection provided by enclosures (IP Code).

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[11] SANS 60815-1, Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 1: Definitions, information and general principles.

[12] SANS 60947-3 /IEC 60947-3, Low-voltage switchgear and controlgear – Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units.

[13] SANS 61243-5, Live working – Voltage detectors – Part 5: Voltage detecting systems (VDS).

[14] SANS 61439-1, Low-voltage switchgear and controlgear assemblies – Part 1: General rules.

[15] SANS 780, Distribution transformers.

[16] SANS 62271-202, High-voltage switchgear and controlgear - Part 202: High-voltage/low-voltage prefabricated substation.

[17] SANS 62271-200, High-voltage switchgear and control gear - Part 200: AC metal-enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 52 kV.

2.2.2 Eskom document(s)

[18] 240-56062752: Standard for medium voltage miniature substations for systems with nominal voltages of 3.3 kV, 6.6 kV, 11 kV and 22 kV standard.

[19] 240-70413291: Specification for electrical terminal blocks.

[20] DSP_34-1080 Specification for fault path indicators for overhead line and cable systems up to 132kV

[21] 240-75655504: Corrosion protection specification for distribution outdoor equipment manufactured from steel.

[22] 240-64685228: Generic Specification for Protective Intelligent Electronic Devices (IEDS).

[23] 240-56030406: Ring main units for systems with nominal voltages from 11 kV to 33 kV.

[24] 240-124520996: Switchgear Training Requirements from Original Equipment Manufacturers Standard.

[25] 240-45395762: Specific requirements for distribution pole and ground-mounted transformers up to 33 kV and 1 MVA.

[26] 240-57648800: New oil filled auxiliary transformers rated 1 MVA and below and 33 kV and below.

[27] 240-48929482 - Tender Technical Evaluation Procedure.

[28] D-DT-0859: Type B mini-substation plinth details.

[29] D-DT-0860: 11 kV and 22 kV Type A mini-sub cable termination detail.

[30] D-DT-0868: Schematic and wiring diagram.

[31] D-DT-1013: Mini-sub meter plate details.

[32] D-DT-3034: LV circuit breakers.

[33] D-DT-3088: Distribution transformer LV neutral surge arrester.

[34] D-DT-3132: Wire, meter sealing s/steel, Ferrule, tinned Cu sealing 12mm LG

[35] D-DT-3181: LV fuses.

[36] D-DT-3034: MCBs/MCCBs.

[37] D-DT-3409: Fuse holder, vertical 3P 440V.

[38] D-DT-3202: Danger sign (unauthorised entry prohibited).

[39] D-DT-6073: Signs D & E (Treatment and Full First Aid Instructions).

[40] D-DT-8017: Screened separable connectors (22kV).

[41] D-DT-8019: Cable Clamp (black polypropylene).

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[42] D-DT-8029: Sealant strip for mini-sub/ RMU.

[43] D-DT-8050: Mini-substation 11 kV, Type B.

[44] D-DT-8051: Mini-substation 22 kV, Type B.

[45] D-DT-8052: Mini-substation 11 kV, Type A.

[46] D-DT-8053: Mini-substation 22 kV, Type A

2.2.3 Informative

[47] 32-9: Definition of Eskom documents.

[48] 32-644: Eskom documentation management standard.

[49] 474-65: Operating manual of the Steering Committee of Technologies (SCOT).

2.3 Definitions

2.3.1 General

Definition	Description
Eskom Evaluating Representative(s)	The person(s) appointed by Eskom to perform the evaluation of tender submission(s) in line with the Eskom requirements.
Nominal voltage	The stated r.m.s. phase-to-phase voltage of the supply to which equipment is connected.
Rated voltage	The highest r.m.s. phase-to-phase voltage of the supply for which equipment is designed to operate continuously.
Ring main unit	A medium voltage metal-enclosed switchgear assembly that comprises a combination of two ring switch-disconnectors and a circuit-breaker tee-off function. These functions incorporate integral cable earthing switches and have facilities for cable testing.
Type A mini-sub	A mini-sub that is fitted with an off-load, dead-break isolating arrangement in the MV compartment, that consists of extensible screened separable connectors at 11 kV and 22 kV.
Type B mini-sub	A mini-sub that is equipped with a ring main unit in the MV compartment.

2.3.2 Disclosure classification

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

2.4 Abbreviations

Abbreviation	Description
LV	Low Voltage
MCCB	Moulded Case Circuit Breaker
MCB	Miniature Circuit Breaker
Mini-sub	Miniature Substation
MV	Medium Voltage
OEM	Original Equipment Manufacturer
RMU	Ring Main Unit

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Abbreviation	Description
TEAP	Technically evaluated and approved products
SHEQ	Safety, Health, Environmental and Quality

2.5 Roles and responsibilities

All Eskom employees and/or appointed bodies involved in the procurement of the mini-subs shall ensure that the mini-subs offered for tender evaluation meets the technical requirements of the stated technical evaluation criteria.

Prospective tenderers of mini-subs to Eskom must be conversant with the requirements of the applicable standards and shall comply with the requirements. Prospective tenderers shall ensure that they obtain clarity where required and obtain all supporting information or documents necessary to comply with this document.

2.6 Process for monitoring

The acceptance of the mini-subs shall be based on the evaluation of the fully compliant documentation submission, factory evaluations and the exact replica factory sample evaluations for each mini substation product, product type and its associated main components.

2.7 Related/supporting documents

Refer to clause/ section 2.2.

3. Requirements

This document contains the technical evaluation criteria for all type of mini-subs. The three stages of the technical evaluation criteria are specific to each of the mini-sub types and its associated main components evaluated. The evaluation methodology will include three main stages, namely the documentation evaluation, factory evaluation and factory sample evaluation.

3.1 Documentation Evaluation

a) The documentation evaluation exercise is performed by the Eskom evaluating representatives. This initial part of the evaluation starts when technical submissions are opened and assessed for the first time after the Commercial evaluations are concluded, unless otherwise agreed. Only Commercial compliant submissions shall be considered for technical evaluations to conclude the tender process, any evaluation of non-Commercial compliant tenderers will be at the discretion of Eskom. The submitted documents will be evaluated against the evaluation criteria as stated in clause 3.4 of this document;

b) The documentation evaluations are meant for establishing if all the key tender deliverables are met with regard to the product offered. The documentation evaluation will be performed in two levels: 1) the Mandatory Technical Evaluation requirements and deliverables Level 1 (mandatory requirements), and 2) the level 2 the Qualitative Evaluation (scoring phase);

c) Failure to submit all documents required for mandatory technical evaluation will lead to immediate disqualification;

d) During the documentation evaluation; the submission need to prove full compliance and that type testing for the mini subs were done in accordance with Eskom specifications and normative references where applicable. Failure to submit and comply with all test requirements specified in the Eskom specifications or the related normative referenced documents will lead to immediate disqualification, unless otherwise indicated by Eskom;

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e) The documentation tender submission must meet all the level 1 mandatory technical evaluation requirements. Failure to meet all the mandatory requirements will result in immediate disqualification. Tenderers which were found compliant and successful on level 1 Mandatory requirements will proceed to Level 2 Qualitative Evaluation (scoring phase);

f) In order to proceed to the factory and factory sample evaluation stage; the tenderer will need to obtain a minimum of 80% for the Level 2 Qualitative Evaluation (scoring phase) in table 2 of this document. Any submissions that do not meet the 80% threshold will result to immediate disqualification;

g) Immediate disqualification during the level 1 mandatory technical evaluation stage will mean that Eskom will be allowed to stop the technical evaluations without concluding the review of all the level 1 Mandatory Technical Evaluation requirements not yet reviewed;

h) Only tenderers that have scored a minimum of 80% in the Qualitative Technical Evaluation Criteria will proceed to the next stage of the Factory Evaluation and Factory Sample Evaluation. During this stage the tenderers shall be required to provide clarifications to ensure full compliance with Eskom's technical criteria. Note: This will ensure that the product is fully compliant with the technical evaluation criteria and a score of 100% is achieved for the Qualitative Evaluation Criteria;

i) Such post tender clarifications as required shall not be used to render a non-responsive tender responsive or to change the outcome of scoring or ranking. Clarifications shall not trigger changes in the price, scope, lead times or risk position of Eskom or the tenderer. The objective is to provide assurance to Eskom that any remaining ambiguities arising during the qualitative technical evaluation stage are resolved prior to contract award recommendation. During this stage of clarification that will be administered through the relevant appointed Procurement Practitioner, documents that are required to resolve outstanding matters for full compliance in support of the technical requirements shall be submitted by the tenderer. This is required prior to contract award recommendation;

j) Eskom reserves the right to list technically compliant tenderers on Eskom's TEAP listing database for the items approved;

k) Evaluation for the LV interconnection cables, MV interconnection cables, MV cable terminations (SSC's) and the LV switchgear used in the mini substation shall be performed as part of the mini substation technical evaluations. If more than one product option is offered for the above, a full technical submission (i.e. technical documentation in accordance with the Eskom specification, manufacturing plant location and the complete mini substation samples fitted with the different options) will be required for each option offered, including the detailed cost breakdown; and

l) For Type B mini subs: prospective tenderers will only have to submit one option of an Eskom compliant RMU which will be evaluated with the mini sub.

m) If the additional type test requirements from Eskom std 240-56062752 namely:

1) Transformer temperature rise test and

2) Internal arc classification test for Type B mini-subs

Could not be performed before tender close a signed letter from a testing authority confirming that the type test has been booked and will be completed no later than 6 months after the tender closing date shall be submitted.

n) **Where an Eskom tender requires miniature substation training to be added to the contract then**: The tenderer shall submit a training proposal for the installation, operation and maintenance of all mini-substation types and configurations offered, including associated equipment and manufacturer options. The requirement is not limited to Type B mini-subs. Practical sessions shall be performed at installed minisub sites where required. The exact locations shall be communicated based on the first installation of the miniature substation.

o) **Where an Eskom tender requires Type B msub training to be added to the contract then:** Training requirements for the type B miniature substation RMU shall be as per the Eskom standard 240-124520996- SWITCHGEAR TRAINING REQUIREMENTS FROM ORIGINAL EQUIPMENT MANUFACTURERS STANDARD, with the below points to be noted:

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1) Level 1, 2 and 3 training shall be required as per the standard and the training material shall be submitted in electronic format and will be required to be submitted as part of the tender submission and be evaluated under the Qualitative Evaluation section. The submission shall include the training levels required, a list of the documentation that will be used for training material, time required and a list of practical sessions;

2) Level 4 training shall not be required for this contract;

3) From the mentioned standard: “For new contracts up to 132 kV, a switchgear unit shall be supplied locally by the OEM within the contractual lead time, for training and quality assurance purposes.” This unit shall be a 2R 1B 11kV RMU unit as used in the miniature substation. A unit per Eskom Dx OU shall be provided by the successful tender at the requested training centre and shall be delivered directly and positioned in the Eskom RMU training centre that shall be indicated. The supply, transport and installation cost shall be solely at the expense of the successful tenderer;

4) Level1 training to be delivered by the OEM using online technology e.g. MS Teams(Eskom has standardised on using MS Teams). All other conditions of the training shall apply, and the training material shall be provided in electronic format so it may be shared with Eskom staff as required by Eskom;

5) Level 2 and 3 training shall be held in on-site locations in Eskom Dx where the first unit is installed and at the RMU training centre location. The exact locations shall be communicated based on the first installation of the type B miniature substation and RMU training centre in each area; and

3.2 Factory Evaluation

a) The factory evaluations are only performed on the submissions that have achieved a minimum of 80% at level 2 Qualitative Evaluation (scoring) phase. Eskom Commercial shall make the arrangements for factory visits and ensure the companies are notified and the technical representatives are invited on time;

b) At the factory, the Eskom evaluating representative(s) conducts the evaluation through the use of checklists. The checklists are used to verify factory capability and manufacturing method compliance to the type tested mini substation offered;

c) At the end of the factory evaluation, the Eskom evaluating representative(s) list all the deviations and identified risks if any. The representatives conduct a formal discussion of the deviations and risks in line with Eskom’s requirements. The Tenderer and their OEM will be required to address the discrepancies and risks identified during contract negotiations (if Tenderer is successful);

d) The tenderer will be disqualified if it is found that the Tenderer/Manufacturer does not have capability and ability to manufacture mini-subs in accordance with Eskom’s requirements as stated in this document and in line with what was submitted during tender; and

e) The factory evaluations will be performed at the mini sub manufacturing factory.

3.2.1 Type A mini subs factory evaluated:

The following component assembly for Type A mini subs will be evaluated

1) The mini substation enclosure manufacturing;

2) The mini substation enclosure painting/ protective coating application;

3) The transformer manufacturing;

4) The fitting of the bushing to the transformer;

5) LV assembly and wiring;

6) LV switchgear fitting to the mini sub;

7) The LV interconnection cable terminations;

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8) The MV interconnection cable terminations;

9) The mini substation final assembly, and

10) Testing facilities including certification and calibration of testing equipment.

3.2.2 Type B mini subs factory evaluated:

In addition to the items listed in clause 3.2.1 above; the following component assembly for Type B mini subs will be evaluated:

1) The Type B mini-subs RMU assembling into the mini-sub enclosure.

2) The Type B mini subs relay settings configuration and functionality tests, and

3) The mini substation final assembly.

4) Testing facilities including certification and calibration of testing equipment.

3.2.3 Manufacturing and assembly plant verification

The manufacturing and assembly plant verification for the main components and final assembly will include the verification of the following:

1) The product and manufacturing design and design software capability.

2) The manufacturing plant setup.

3) The machinery capability.

4) Raw material and compounds type tested.

Production process and critical check points.

5) Material handling and storage.

6) Testing facilities including certification and calibration of testing equipment.

7) Sample testing and procedures.

8) Routine testing and procedures.

9) Final packaging of materials.

3.3 Factory Sample Evaluation

a) The factory sample evaluations will be the evaluation of the exact replica product that is offered to Eskom during tender. A product range sample quantity allowance will be made by Eskom whereby each tenderer will be required to prepare only one exact replica sample per product range type offered for factory sample evaluations. Eskom will notify successful tenderers and indicate the sample to prepare for sample evaluation.

b) The factory sample evaluations will only be performed on the submissions that have achieved a minimum score of 80% at level 2 scoring phase.

c) It is required that the tenderer ensure that the required exact replica samples in accordance with the Eskom mini substation specification and technical evaluation criteria are manufactured, assembled, functionally tested and ready for evaluation after Eskom has notified the tenderer that Eskom will proceed with factory evaluations and factory sample evaluations.

d) The costs for the exact replica sample manufacturing will be for the tenderers own cost. Should the tenderer be found compliant during the factory evaluations and factory sample evaluations and was successful during the possible contract negotiations and awarding, the manufactured sample units may be corrected accordingly and supplied on contract when required.

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e) At the end of the factory sample evaluation, the Eskom evaluating representative(s) list all the deviations and identified risks if any. The representative conducts a formal discussion of the deviations and risks in line with Eskom's requirements. The Tenderer and their OEM will be required to address the discrepancies and risks identified during contract negotiations (if Tenderer is successful).

f) The relevant technical documents submitted during tender shall be evaluated against the prepared sample during factory sample evaluation. The tenderer will be disqualified if it is found that the Tenderer/Manufacturer does not have capability and ability to manufacture mini-sub in accordance with Eskom's requirements as stated in this document and in line with the technical documents which were submitted during tender.

g) Eskom Commercial shall make the necessary arrangements for the exact replica factory sample evaluations, by ensuring the companies are notified and the technical representatives are invited on time.

h) The exact replica factory sample evaluations shall be performed at the mini substation final assembly factory in South Africa.

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3.4 Technical Evaluation Criteria for the Documentation Evaluation Stage

3.4.1 Level 1 mandatory technical evaluation requirements for mini subs

Tenderers will be required to fully comply will all the requirements/ criteria as stated in table 1 below to proceed to level 2 evaluation.

Table 1: Level 1: mandatory technical evaluation requirements

Number	Criteria	Applicability	Clause	Acceptance: Yes/No
1.	Is a detailed covering letter containing a list of items offered with the OEM and product code indicated submitted?	Types A&B	As per tender list of items.	
2.	Signed and completed transformer, miniature substation and where applicable RMU type test schedule summaries submitted electronically in the provided excel format. **NOTE:** **1. If the additional type test requirements from Eskom std 240-56062752 namely:** **a) Transformer temperature rise test and** **b) Internal arc classification test for Type B mini-subs** **Could not be performed before tender close a signed letter from a testing authority confirming that the type test has been booked and will be completed no later than 6 months after the tender closing date shall be submitted.** **2. The test schedule shall not have blanks in it and where it is required to explain a test requirement submission a supporting letter shall be submitted to explain any test submission response.**	Types A&B	Test schedules	
Any one "NO" on the above scores the prospective tenderer will be disqualified.				

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3.4.2 Level 2 scoring technical evaluation requirements for mini subs

Tenderers will be required to score a minimum of 80 points from table 2 below to proceed to factory and factory sample evaluation.
Where negative marking is applied scores will not go below zero.

Table 2: Level 2: Scoring technical evaluation requirements

Number	Criteria	Clause	Applicability	Acceptance: Yes/No/NA	Weight: 25	Score
Type test reports						
1.	Have all the type test reports as listed in the type test schedule been submitted and are the type tests compliant to the specified Eskom standards?	240-56062752 SANS 1874, SANS 1029, SANS 62271-200 and SANS 62271-202.	Types A&B		25	
2.	For type B mini subs: are internal arc type test reports in accordance with IEC/SANS 62271-200 submitted for the RMU?	240-56062752	Type B			
3.	Mini sub enclosure IAC-AB FLR Type test reports in accordance with IEC/SANS 62271-202 submitted	240-56062752	Type B only			
4.	Have all applicable type tests been performed by a testing laboratory accredited by an ILAC MRA signatory accreditation body?	240-56062752	Types A&B			

NOTE:

1. **If the additional type test requirements from Eskom std 240-56062752 namely:**
   a) **Transformer temperature rise test and**
   b) **Internal arc classification test for Type B mini-subs**

Could not be performed before tender close a signed letter from a testing authority confirming that the type test has been booked and will be completed no later than 6 months after the tender closing date shall be submitted

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2. **Any one "NO" on the above criteria the prospective tenderer will lose all the 30 points.**
3. **IAC Type tests are not applicable to Type A miniature substations and no penalty for non-submissions of test will apply. Full points will be allocated if criteria are not applicable for the type of mini sub offered.**

Number	Criteria	Clause	Applicability	Acceptance: Yes/No/NA	Weight: 10	Score
2	**Routine test reports**					
2.1	Submitted transformer routine test reports compliant. **Note:** The list of routine test reports/certificates required is shown in the excel provided type test schedules. **Note:** The prospective tenderer will lose all applicable points for each missing routine test report.	SANS 780	Type A&B		3	
2.2	Submitted mini sub routine test reports compliant. Note: The list of routine test reports/certificates required is shown in the excel provided type test schedules. **Note:** The prospective tenderer will lose all applicable points for each missing routine test report.	SANS 1029	Type A&B		3	
2.3	Submitted RMU routine test reports compliant. **Note:** The prospective tenderer will lose all applicable points for missing routine test report.	SANS/IEC 62271-200	Type B		2	
2.4	Is the top oil temperature gauge design compliant to Eskom requirements? Note: the compliance to be proven by a test report which shows that the shunt trip operates at a set temperature. Note: Prospective tenderer will lose all applicable points for failure to submit the test report as stated above.	240-56062752	Type A&B		2	

Full points will be allocated if criteria are not applicable for the type of mini sub offered.

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Number	Criteria	Clause	Applicability	Acceptance: Yes/No/NA	Weight: 25	Score
3	**Schedules**					
3.1	Completed, compliant and signed technical schedules A& B for the offered miniature substation electronically submitted in the provided excel format.	Msub Technical Schedule A&B	Types A&B		21	
3.2	Completed, compliant and signed transformer design schedules electronically submitted in the provided excel format.	Transformer design schedule	Types A&B		1	
3.3	Completed, compliant and signed transformer general information schedules electronically submitted in the provided excel format?	Transformer general information schedule	Types A&B		1	
3.4	Completed and signed tools, spares and drawing schedules electronically submitted in the provided excel format.	Tools, spares and drawing schedules	Types A&B		1	
3.5	Completed and signed component schedule summaries submitted electronically in the provided excel format. The list to include the following items: a) Screened Separable Connectors, b) MV Cables, c) LV Cables, d) Switch disconnectors/ MCCBs, e) RMUs f) LV surge arrestors, g) Bushings, h) Tap changer, i) CTs, j) Top oil temperature gauge, l) VDS (as per SANS 61243-5) m) Earth fault indicator	Component schedule	Types A&B		1	

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Note: A penalty of 10 % will be applicable for each incorrect completion of the technical schedule with no acceptable alternative of explanation stated in the Deviation Schedule.						
Number	**Criteria**	**Clause**	**Applicability**	**Acceptance: Yes/No/NA**	**Weight: 5**	**Score**
4	**Other Technical Documents: manuals, brochures, operating procedure, training material and etc**					
4.1	Technical manual of the hand-held push-button remote control unit submitted.	240-56062752	Type B		0.5	
4.2	Technical manuals of the relay offered submitted in accordance with the Eskom specification.	240-56062752	Type B		0.5	
4.3	Detailed bill of materials (BOM) for mini-sub submitted.		Type A&B		1	
4.4	Top oil temperature gauge design, make and test reports proofing the gauge functionality submitted, and compliant to Eskom requirements.	240-56062752	Type A&B		0.5	
4.5	Operating procedure or manual for RMU submitted and compliant.	240-56062752	Type B		0.5	
4.6	Does the gas density monitoring device meet the minimum requirements of Eskom?	240-56062752	Type B		0.5	
4.7	Technical brochures for all the individual components used to assemble the mini sub submitted? The brochures required are for the following items: a) Screened Separable Connectors, b) MV Cables, c) LV Cables, d) Switch disconnectors/ MCCBs (as per SANS 60947-2) e) RMUs f) LV surge arrestors, g) Bushings, h) Tap changer, i) CTs, j) Top oil temperature gauge, l) VDS (as per SANS 61243-5?				1	

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	m) Earth fault indicator. In accordance with the Eskom (240-56062752). Kindly complete the list in the attached excel format (Components sheet).					
4.8	Comprehensive training proposal submitted covering installation, operation and maintenance of all mini-substation types, configurations and associated equipment offered.	240-56062752	Type A & B and LV MCCB and fuse holder configured		0.5	
Note: Full points will be allocated if criteria are not applicable for the type of mini sub offered and or tender requirements. Note: Prospective tenderer will lose all applicable points for failure to submit the applicable documents as stated above.						
Number		**Clause**	**Applicability**	**Acceptance: Yes/No/NA**	**Weight: 35**	**Score**
5	**Drawings**					
5.1	General assembly drawings for complete mini-subs submitted with dimensions and are the main compartments shown as per Eskom's standard.	240-56062752	Type A&B		23	
5.2	Auxiliary wiring diagrams submitted and comply with D-DT-0868 submitted.	240-56062752	Type A&B		1	
5.3	Does the msub with LV MCCB feeder protection have a drawing submitted for MCCB mounting plate complies with Eskom's requirements?	240-56062752	Type A&B		1	
5.4	Does the mini-sub make provision for the support (clamping) of two three core cables in the MV compartment? (a drawing to be submitted) showing the distance from bushing centre line to the support clamp and from the base level to the support clamp?	240-56062752	Type A		1	
5.5	RMU cable termination enclosures suitable for the termination of 3-core or 3x1-core cables of conductor cross-sectional area up to 300 mm^2. Drawing to show the distance from bushing centre line to the support clamp and from the base level to the support clamp.	240-56062752	Type B		1	

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	Note: A drawing that shows a range of size of cables that can be terminated to the RMU of the mini sub to be submitted.					
5.6	Drawing of the rating plate submitted, and does it comply with Eskom's requirements.	240-45395762	Type A&B		1	
5.7	Drawing number shown on submitted drawings.		Type A&B		0.5	
5.8	Revision number shown on submitted drawings.		Type A&B		0.5	
5.9	Detailed description provided in "Title" of submitted drawings.		Type A&B		0.5	
5.10	Approved & date shown on submitted drawings.		Type A&B		0.5	
5.11	Position of holding down bolt holes (Oversized 24 mm) and alignment to the concrete plinth shown on assembly drawing.		Type B		0.5	
5.12	Position of MV bushings including spacing between bushing centres and between the outer bushing centres and the cable termination enclosure side wall.		Type A&B		0.5	
5.13	Position and location of cable test facilities.		Type B		0.5	
5.14	Position of the earth terminals or bars.		Type A&B		0.5	
5.15	Position of the live indication system (VDS).		Type A&B		0.5	
5.16	Position of the earth fault indicator.		Type A&B		0.5	
5.17	Removable base sections for cable installation.		Type A&B		0.5	
5.18	Positions of lifting eyes.		Type A&B		0.5	
5.19	Position of the documentation pocket.		Type A&B		0.5	
5.20	Position of the operating handle storage facility.		Type B		0.5	
Note: Full points will be allocated if criteria are not applicable for the type of mini sub offered. Note: prospective tenderer will lose all applicable points for not showing the items listed above on the relevant drawings.						
Grand Total					**100**	
Minimum required score/100 to proceed to factory and factory sample evaluation					**80**	

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3.5 Conclusion

This report is effective to specify the technical evaluation criteria for mini subs to be used in Eskom. The mini subs prospective tenderers are to complete the provided excel schedules aligned with 240-56062752, and other documents listed in the normative references of the documents above as part of the tender deliverables.

4. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Lerato Lekhema	Senior Manager: Dx Technology & Engineering
Jacques Paulse	Senior Engineer SI WCOU/ Chairperson MV & LV Cable System CG

5. Revisions

Date	Rev	Compiler	Remarks
Sep 2026	6	N. Booyens	1.Fixed Qualative overall scoring from 120 to 100 2.Changed grammar for some evaluation criteria from questions to statements 3. Training requirements for all minisubs added in evaluation requirement description and Qualitative Evaluation section. 4. Edited under Qualitative Evaluation criteria Other technical docs the Note: Full points will be allocated if criteria are not applicable for the type of mini sub offered and or tender requirements.(added tender requirements)
Aug 2026	5	N. Booyens	1. Removed references to High Risk msubs as the enclosure was standardised on a high risk enclosure 2. Scope amended to state “Dx” The document covers the criteria for the evaluation of the mini substations within Dx Eskom Holdings SOC Limited (Ltd). 3. Introduction amended to state the 240 no :It has been developed in line with the Eskom mini substation equipment standard 240-56062752.” 4. Removed applicability to Transmission and Generation; 5. Removed Eskom normative references of DST and DSP as these are now 240 no’s 5. Added to Eskom normative references 240-48929482 - Tender Technical Evaluation Procedure. 6. Removed reference to 240-56364491: Standard design for distribution protection schemes.

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Date	Rev	Compiler	Remarks
			7. Replaced ref 240-75655480: Specification for earth fault indicators used for MV cable networks with DSP 34-1080 Specification for fault path indicators for overhead line and cable systems up to 132kV. 240 -75655480 only covers overhead line fault path indicators; 8. 240-56065202 corrected to 240-124520996 Switchgear Training Requirements from Original Equipment Manufacturers 9. Refer D-DT-3196 removed as Ferrule is now on D-DT 3132; 10. Added to references D-DT-3034: MCBs/MCCBs 11.Removed reference D-DT-8026: LV flexible cables. This is copper cable and the msub std has changed to Al or equivalent cable 12. Roles and Responsibilities: Changed project deliverables to mini-subs offered and prospective tenderers to Prospective tenderers 13. Added to Abbreviations : MCB 14. Changed Scoring Evaluation to Qualitative Evaluation 15. Added TEAP abbreviation 16. Added: Eskom reserves the right to add compliant products to its TEAP database 17. Added under Documentation Evaluation: Post clarification requirements 18. Mandatory Criteria for offer letter amended to include OEM and product code 19. Moved from Mandatory to Qualitative section the following: 19.1 Is a full list listing all the individual components used to assemble the mini sub submitted? 19.2 The technical brochure submission for components 19.3 Technical Schedules A&B 19.4 Trf design, general schedules 19.5 Tools, spares drawings schedules 19.6 Component schedule summary 19.7 Msub general dwgs and aux dwgs 19.8 Does the mini-sub make provision for the support (clamping) of two three core cables in the MV compartment? (a drawing to be submitted) 20. Mandatory specific reference to SANS 780 trf type test submission removed. 21. Freestanding RMU and minisub enclosure IAC Type test video evidence submission removed.

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Date	Rev	Compiler	Remarks
			22. Moved Mandatory to qualitative criteria: drawing requirements for cable test facilities, cable termination size range and cable termination enclosure dimension 23. Moved Mandatory to qualitative criteria: Relay and remote control manuals submission 24. Removed from the Note under the Mandatory Eval Criteria table: The mini sub should fully comply with Eskom specifications where applicable to obtain a YES on the mini sub assembly and construction. 25. a)Mandatory criteria for test schedule summary amended as follows: Signed and completed transformer, miniature substation and where applicable RMU type test schedule summaries submitted electronically in the provided excel format b)Added notes to the amended test schedule submission. 26. Changed the word supplier to prospective tenderer 27. a) Under the Qualitative Evaluation criteria Removed specific summarised Type Tests requirements and stated the test requirements as follows: Have all the type test reports as listed in the type test schedule been submitted and are the type tests compliant to the specified Eskom standards? b) The only specific tests left were the IAC tests for the RMU and Type B msub enclosure c) 28. Testing laboratory requirements amended to read: Have all applicable type tests been performed by a testing laboratory accredited by an ILAC MRA signatory accreditation body? 29. Amended the Tech Schedules A&B, trf, component, tools, spares and drawing requirements to be a once off check for submission and correctness 30. Removed from Qualitative criteria: Are the rated lightning impulse peak with-stand levels for all MV equipment in accordance with the Eskom requirements? This is covered msub and RMU tech schedules A&B 31. Removed from Qualitative criteria: Are the total cost calculations for each transformer size submitted in accordance with the Eskom requirements? See transformer losses and capitalisation equation. Eskom commercial to perform this calculation. 32. Component list incorporated into the Component Schedule submission under Qualitative Evaluation

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Date	Rev	Compiler	Remarks
			33. VTs removed from component list as there are not VTs used in msubs 34. Under Qualitative evaluation changed the following: a) Are the general assembly drawings for complete mini-subs submitted with dimensions and are the main compartments shown as per Eskom's standard? b) Are all auxiliary wiring diagrams submitted and comply with D-DT-0868 submitted? c) Does the msub with LV MCCB feeder protection have a drawing submitted for MCCB mounting plate complies with Eskom's requirements? d) Is a drawing of the rating plate submitted, and does it comply with Eskom's requirements? e) Msub cable support clamp dwg combined with another similar question 35. For Qualitative Criteria where negative marking was applied stated that scores will not go below zero. 36. Under the Desktop Evaluation added clarification notes on post desktop evaluation clarifications and test requirements and TEAP listings. 37. Changed some Mandatory and Qualitative Criteria statements from questions to statements and fixed some grammar where required. 38. Changed the Qualitative Scoring weights and sub scoring to weigh more on items that not submitted will cause a failure.
April 2021	4	Q. Khumalo	Addressed comments from Auditor. Table 2 revised.
May 2020	3	B. Olivier	Addressed comments from Auditor. Corrected total score for table 2.
Aug 2019	2	B. Olivier	Removed the requirements for IRTU fitted RMUs. Restructured the document.
March 2016	1	Q. Khumalo & T. Du Plessis	New Document

6. Development team

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

- Neville Booyens: Chief Engineer Dx Technology & Engineering; and
- Jacques Paulse: Senior Engineer SI WCOU.

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7. Acknowledgements

Not applicable.

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