	REPORT Technical Returnables	Technology
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Title: **Procurement LimLanga Technical Returnables for Contract Establishment: Calibration and Testing of Test Instruments Used Within the LimLanga Cluster (EIA-1075)**

Unique Identifier: **SI-MOU 424**

Alternative Reference Number: **N/A**

Area of Applicability: **Engineering**

Documentation Type: **Report**

Revision: **2**

Total Pages: **12**

Next Review Date: **N/A**

Disclosure Classification: **Controlled Disclosure**

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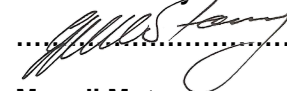


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1. Introduction

This document sets out the technical requirements that tenderers must meet in order to be considered for the calibration of test instruments used within the LimLanga Cluster when required for a period of 60 months. The formal or informal tender process will be followed whereby tenderers will submit the technical Returnables and approval will be obtained in accordance with this document.

2. Supporting Clauses

2.1 Scope

The document elaborate on the calibration and testing of instruments used within the LimLanga Cluster by the maintenance and operation.

2.1.1 Purpose

The purpose is to develop the technical evaluation criteria for the test Instrument, spares, repairs and calibration to outsource the service provider as and when required in a period of five years. It is also to provide the guidance to maintenance and operation personnel with regards to calibration of test instrument requirements.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.3 Normative

2.3.1 Normative

[1] ISO 9001: Quality Management Systems

[2] DST 34-2151, *Standard List for Protection Technician Tools and Test Instrument*

[3] 240-70732876, *Metering Technician Tools and Test Instrument Standard*

[4] 240-76624513, *Standard for the calibration of test instruments used by Field Staff.*

[5] 40-129145608, *Standard tools, test equipment and workshop equipment list for Tele control technicians*


[6] ILAC-G24 Ed.2007, *Guidelines for the Determination of Calibration Intervals of Measuring Instruments*

[7] SANS 61010-1:2011, *Safety requirements for electrical Instrument for measurement, control, and laboratory, Part 1: General requirements.*

[8] SANAS TR-9301-Criteria For The Accreditation Of Calibration Laboratories Performing High Voltage Calibrations.

[9] SANAS TR-8701-Calibration of Installation and Appliance Testers

[10] SANAS TG-0202-Guidance on the Calibration Of Insulation Testers

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2.4 Informative

[1] TESP0019, *Policy for the Calibration of Test Instruments Used in PMC*

2.5 Definitions

Table 1: Definitions

Definition	Description
Accredited Calibration/Test Facility	A laboratory that has been accredited by SANAS in accordance with SABS ISO/IEC 17025 or an internal Eskom calibration/test facility approved by the Eskom Calibration Care Group.
Accuracy	The degree of closeness between a measured value and the true or nominal value
Adjustment	The operation that is intended to reduce the differences between the values indicated by an instrument and the values realized by a reference standard to within a predetermined tolerance.
Calibration	The set of operations that establishes, under specified conditions, the relationship between the values indicated by a measuring system and the corresponding values of a quantity realized by a reference standard or a working standard.
Calibration Interval	A specified or designated period of time between calibration adjustments or verifications. During this interval the instrument should remain within specific performance levels, with a specified probability, under normal conditions of handling and use.
Calibration Sticker	A sticker affixed to an instrument that shows its calibration status. The sticker typically indicates the instrument's identification, who performed the last calibration and when, and the date of the next scheduled calibration.
Degradation	A gradual reduction in an instrument's performance that proceeds until the instrument fails to meet its performance specifications.
Drift	A slow variation over time in the performance of an instrument. In contrast to "degradation", the instrument may continue to operate within its performance specifications.
Fixed Instrument	Equipment fastened to a support, or otherwise secured in a specific location [IEC 60050-826:2004, 826-16-07, modified]
Hand-Held Instrument	PORTABLE EQUIPMENT intended to be supported by one hand during NORMAL USE [SANS 61010-1, <i>modified</i>]
Portable Instrument	Equipment intended to be carried by hand [SANS 61010-1, <i>modified</i>]
Test Instrument	This is an instrument which by electromagnetic means tests, measures, indicates or records one or more electrical or physical quantities, also non-measuring equipment such as signal generators, measurement standards, power supplies for laboratory use, transducers, transmitters, etc. Note: This includes <i>portable instruments, hand-held instruments and fixed instruments</i> [SANS 61010-1, <i>modified</i>]
Traceability	A process whereby the indication of a measuring instrument can be compared, in one or more stages, with a national standard for the measure in question.
Approved by	The accountability of the Approver of the document is equivalent to the specified role of Functional Responsible/Owner as identified in 240-53114186 and 32-6 for Documents and Records Management.

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Desktop Evaluation	An evaluation of the documentation included in the tender returnable.
Functionality	The capability and capacity of a tenderer to provide goods or services in accordance with specifications as set out in the enquiry documents. Tenders evaluated on functionality must be carried out in accordance with 32-1034.
Informal Tender	It is the Procurement mechanism that may be used for transactions not exceeding the Informal Tendering lower limit as set in the Eskom DOA Policy. These transactions must be executed by a Procurement Practitioner and approved by an accredited Procurement Practitioner
Mandatory Requirements	This are requirements that must be submitted by the tenderer, fail to provide any mandatory tender returnable as clearly specified in the tender enquiry, the tender submission will be deemed non-responsive.
Procurement	Procurement is the process which creates, manages and fulfils contracts relating to the provision of goods, services and engineering and construction works or disposals, or any combination thereof.
Schedule A	Minimum requirements stipulated by the purchaser i.e. Eskom
Schedule B	Offered by the manufacture in response to purchasers requirements
Standards Implementation	Is the department that is responsible for the implementation of standards and also for the equipment's Technology at an OU level.
Tenderer	A manufacturer or supplier who wishes to bid on the listed tender.

2.6 DISCLOSURE CLASSIFICATION

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

Abbreviations


Table 2: References

Abbreviation	Description
DoL	Department of Labour
DT	Distribution Technology
ECS	Eskom calibration services
LPU	Large power users
MOU	Mpumalanga Operating Unit
OEM	Original Equipment Manufacture
PDE	Power Delivery Engineering
SANAS	South African National Accreditation System
SANS	South African National Standards
SI	Standards Implementation
SPU	Small Power Users
TET	Technical Evaluation Team

2.7 Related/Supporting Documents

As per Normative and Informative of all documents listed

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2.8 External Impact on the contract

a) Environmental

The service provider shall assess the impact, of calibration of test instruments operations performed, on the environment and take appropriate action to rehabilitate.

b) Safety

The service provider shall adhere to all safety requirements as set out in SANS 61010-1:2011, and the documents which the standards refer to.

c) Statutory

All SANS documents referred to by 240-70732876 and DST 34-2151 should be complied with when rendering services.

2.9 Responsibilities

Technical Support:

- It is the responsibility of the Technical Support department to use the latest revision of this document before issuing it for a tender.

Maintenance and Operations Managers:

- Shall ensure that the test instruments calibration certificates are valid before performing any work.
- It is the responsibility of the relevant department and or Section in the LimLanga Cluster to schedule the calibration of test instrument as per table.


Maintenance and Operations Supervisors:

- Shall ensure validity of calibration of test instruments is done in accordance with the maintenance frequency in Table 3 of this document.
- Upon receipt of calibrated test equipment supervisors shall ensure that it is accompanied by a calibration certificate and calibration sticker pasted on the test equipment. The following information shall appear:
 - The sticker must have the calibration date;
 - The sticker must state pass;
 - The sticker must have a signature;
 - The sticker will be applied in such a way should the equipment be open then the seal be broken;
 - The next calibration date;
 - Calibration certificate must be issued together with the calibrated test equipment;
 - Defective report/certificate must be issued for all defective test equipment; and
 - Should the cost of repair be above the book value of the equipment, then it shall be scrapped

Tenderers (Testing Laboratory):

Tenderers to ensure that he does the following:

- To attend the clarification meeting;
- To attend all evaluations;
- All SANAS accreditation are complied with;
- That all records are maintained;
- That corrective action is taken on reported non-conformances;
- On request of Eskom to provide any and all documentation;


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- That the original documentation and a copy of relevant evidence is provided to Eskom prior to evaluation;
- The service providers will test the equipment if repairs are required they must provide a detail report of the defects and quotation; and
- Prior the repair where necessary, the cost of repair shall be communicated with the senior supervisor.

3. Grouping of Test Instruments

Test instruments are used by numerous sections within Eskom and in order to specify calibration intervals it is required to group test instruments based on the application of the test instruments and the criticality of the measurements.

Name of Group	Description	Test Instruments in Group	Maintenance/ Calibration Frequency
Group 1	These test instruments shall be classed as instruments used on power plant in live conditions. These instruments are generally used by field services staff to determine for example the presence and level of voltages and/or currents.	HV ammeter Earth Resistance Tester Earth continuity tester Voltage detectors	1 Year / as per OEM maintenance frequency intervals.
Group 2	These test instruments shall be classed as instruments used to determine the accuracy of metering Instrument. These instruments are generally used by Metering field staff verifying LPU, Transmission and Generation metering Instrument and field services staff verifying accuracy of SPU and prepayment meters.	Meter reference standards, meter accuracy verification unit, etc.	1 Year / as per OEM maintenance frequency intervals.
Group 3	a. These test instruments shall be classed as instruments used by staff to test the operation of Instrument. b. And only for major repairs, which will be approved by the CPM Manager if the CPM lab can't perform those repairs.	Digital multi-meter, AC current clamp, etc.	2 Year / as per OEM maintenance frequency intervals.

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Note 1: all test instruments shall be withdrawn from service and shall be returned to an accredited calibration/test facility for calibration as per the maintenance frequency

Note 2: The following calibration intervals shall be supplemented by regular safety and functional checks. Such checks shall be conducted and recorded at least every 3 months.

3.1 Calibration Interval Policy

- The safety and functional checks shall be conducted according to the test instruments' operation manuals.
- Where such manuals are unavailable or are available but do not cover safety and functional checks, the responsible person shall consult with the test instrument's manufacturer to determine the nature of safety and functional checks that should be conducted.

3.2 Frequently used Test Instrument

Test instruments are sometimes over utilised or mishandled, Examples are when over-voltages or over-currents are applied or when an instrument is dropped. In many instances the instrument will still appear to function normally, but may be producing wrong readings/outputs. The LimLanga Maintenance and Operation personnel shall report incidents to the LimLanga supervisors or managers, involving test instruments,

3.3 Defective Test Instrument

A "Defective" sticker as described in Annex A shall be attached to defective instruments by the accredited calibration/test facility before returning such Instrument back to their owners.

4. Informal Tenders

The outstanding documents following the first evaluation may be solicited from tenderer on discretion of the technical evaluator and the procurement department, and the following conditions will apply:


1. Resubmissions will be requested only when no tenderer has submitted all required documentation and met the minimum requirements as stipulated in this document.
2. All tenderers that have responded to this particular informal inquiry will be given the same opportunity to submit all outstanding documents on condition that point number 1 of this section is validated.
3. Resubmissions shall be submitted within the period that will be determined by the procurement department.

5. Technical Tender Requirements

5.1 Technical Evaluation Strategy

The Technical Evaluation Team (as per 240-48929482) will evaluate the submissions. The submissions shall be subjected to a progressive series of evaluation levels. Passing of each stage is a prerequisite for proceeding to the next evaluation stage. The evaluation stages are as follows:


- Stage 1 Mandatory Requirement
- Stage 2 Functional Scoring Criteria
- Stage 3 Site Evaluation

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6. Technical Evaluation Strategy

The Technical Evaluation criteria comprises of Desktop Evaluation of Technical returnable (mandatory requirements and functional requirements) Site visits to tenderers to assess the compliance with TR 8701, TR 9301 and TG 0202. The Technical Evaluation Team (as per 240-48929482) will evaluate the submissions. The submissions shall be subjected to a progressive series of evaluation levels. Passing of each stage is a prerequisite for proceeding to the next evaluation stage. The evaluation stages are as follows:

- Stage 1 Mandatory Requirement
- Stage 2 Functional Scoring Criteria
- Stage 3 Site Evaluation

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6.1 Mandatory Requirements

- SANAS/LAB accreditation
- Critical equipment to perform the calibration with the following tools, indicating serial numbers and quantities. *Copy of calibration certificate is required. In case of new tool or Instrument, then copy of manufacturers test report is required.

6.2 Functional Scoring

The tenderers will be assessed as per table 1 below and in order to progress to the next stage of evaluation i.e., site visit, the minimum weight score of 80% shall be obtained by the tenderer.

Table 1: Functional Requirements

Item No.	Description	Weight	Notes on the item	Evidence
1	Training Requirements Key Person or Team Leader	30%	Certificates to be certified with dates and the certification must be valid i.e. not older than 3 months from tender closing date. This gives assurance to Eskom that the company has competent people it is employment. .	Certified and dated certificates
2	Tools and Instrument	40%	The service provider can outsource provided the facility meets the requirements outlined in this document.	Testing equipment calibration certificate.
3	Test Facility	30%	This test facility must meet the conditions as specified on ISO17025 of 2017 standard.	Site location in a for proof of residence..


7. Authorization

This document has been seen and accepted by:

Name and surname	Designation
Mmedi Motaung	LimLanga SI Manager

8. Revisions

Date	Rev.	Compiler	Remarks
June 2021	2	DB Shabangu	LimLanga cluster naming to accommodate LOU/MOU and added LAB accreditation
April 2021	1	DB Shabangu	First Issue of document.

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9. Development Team

The following people were involved in the development of this document and will be the technical evaluation team are as follows:

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Mbongeni Ngobeni: PPM Mbombela

Hennie van der Westhuizen: Technical Support

Heaven Ngomane: Maintenance and Operations (Figtree CNC)

10. Acknowledgements

None

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11. ANNEXURE A:

REQUIREMENTS FOR DEFECTIVE STICKER

- It shall be a polyurethane, permanent sticker.
- Printing shall be on a white background.
- The Size of the sticker shall be 45mm long and 10mm wide
- The printing on the sticker shall be bold Aerial font size 20 and all in capital letters, see sample
- The letter spacing shall be as shown in the sample

DEFECTIVE

Figure: 1

Instruction for the use of the sticker

The sticker shall be applied to the display of the instrument by the person responsible

12. ANNEXURE B:

TECHNICAL EVIDENCE – TEST FACILITY

Mandatory Requirements:

- Include the premises address and the test facility should have controlled temperature environment.
- The test facility must also have a document control system.