

Scope of Work for provision of calibration service of test equipment at Hendrina Power Station

Unique Identifier:
Revision: **1**
Page: **1 of 11**

Title: **Scope of Work for provision of calibration service of test equipment at Hendrina Power Station**

Unique Identifier:

Alternative Reference Number: **N/A**

Area of Applicability: **Engineering**

Documentation Type: **Specification**

Revision: **1**

Total Pages: **11**

Next Review Date: **N/A**

Disclosure Classification: **CONTROLLED DISCLOSURE**

Compiled by

Functional Responsibility

Functional Responsibility

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Date:

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Authorised by

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Date:

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1. INTRODUCTION

This document will support the procurement and contracting phase for the provision of calibration service of test equipment required at Hendrina Power Station. The intent is to have a 5 year NEC3 Term Services contract in place to support this objective.

This document defines detail description of requirements which will form the core of the final services contract, between Eskom and the Contractor providing the calibration service for the test equipment detailed herein.

2. SUPPORTING CLAUSES

2.1 SCOPE.

This document collects all the information from related stakeholder requirements for the supply of calibration service of test equipment and forms the basis of the scope.

There shall be a predefined method provided in the contracting phase for newly acquired equipment to be added to the scope of work provided the equipment is of a similar type or functional purpose outlined in the scope.

2.1.1 Purpose

The purpose of this document is to provide a clear statement of the scope of work for the provision of calibration service of test equipment required at Hendrina Power Station.

2.1.2 Applicability

This document shall apply to Test Equipment at Eskom Hendrina Power Station

2.2 NORMATIVE/INFORMATIVE REFERENCES

2.2.1 Normative

- [1] Occupational Health and Safety act number 85 of 1993
- [2] ISO 9001 Quality Management System
- [3] ISO/IEC - 17025 General requirements for the competence of testing and calibration laboratories
- [4] 32-1034 Eskom Procurement and supply chain management procedure
- [5] 32-1033 Eskom s Procurement and Supply Chain Management Policy
- [6] 32-727: Safety, Health, Environment and Quality Policy

2.2.2 Informative

N/A

2.3 DEFINITIONS

Definition	Description
Employer	Eskom or Eskom Hendrina Power Station representative appointed in writing.

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When downloaded from the EDMS, this document is uncontrolled and the responsibility rests with the user to ensure it is in line with the authorised version on the system.

Contractor	Service provider contracted for supply specific service to Eskom Hendrina Power Station.
Maintenance	A combination of all technical, administrative and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a condition in which it can perform the required function.
Maintenance Philosophy	The principal approach decided upon for performing maintenance, such as pro-active or reactive maintenance.
Maintenance Strategy	The type of maintenance selected for specific plant and equipment, such as time or condition-based maintenance, corrective or preventative maintenance.
Maintenance Plan	A plan that details the maintenance that needs to be done on a specific plant item or component and the frequency and quality requirements for that maintenance.
Maintenance Schedule	The timing of the Maintenance Plan information stipulating when in the calendar year, work needs to be done.
Preventive Maintenance	Planned time or schedule-based maintenance carried out with the explicit objective of preventing functional failures and is directed towards maintaining the physical condition of the plant or equipment. It includes scheduled overhauls and scheduled replacement of worn out parts or failure prone components.
Corrective Maintenance	The process of restoring plant and equipment which have failed or deteriorated to a state which renders it unable to meet the acceptance criteria required for its particular application.
Inspection	Activities, which by means of examination, observation or measurement, determine the conformance of material, parts, components etc, to predetermined specifications and quality requirements.
In-service Inspection	All inspection and testing conducted on plant and equipment at regular intervals and prescribed by regulatory and statutory codes or other types of specification throughout its service life.

2.3.1 Disclosure Classification

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

2.4 ABBREVIATIONS

Abbreviation	Description
C&I	Control & Instrumentation
IED	Instrument Engineering Department

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Abbreviation	Description
IMD	Instrument Maintenance Department
PPD	Plant Performance Department
SANAS	South African National Accreditation System
SOW	Scope of Work
SABS	South African Bureau of Standards
SANAS	South African National Accreditation System
SANS	South African National Standards
SHE	Safety, health and environment
T	Temperature
URS	User requirements specification
V	Volts

2.5 ROLES AND RESPONSIBILITIES

C&I Engineering at Hendrina Power Station is responsible for issuing spares SOW.

C&I Maintenance will be responsible for managing the contract.

2.5.1 Contract Manager

- a) Co-ordinating and manage contract budget and expenses
- b) Ensure that the contractor operates within the budget
- c) Holds monthly meetings with the contractor
- d) Communicate technical interface between Eskom and the contractor
- e) Ensure that all work performed complies with the OHS act regulation and quality requirements
- f) Review, verify, and approve receipt of services/deliverables from the contractor
- g) Manage and maintain a contract records and correspondence between the employer and the contractor
- h) Ensure that the contractor compliance with the conditions of contract.
- i) Resolving any deviations and breaches in relation to the agreed conditions of the contract
- j) Contracts manager must keep the original copy to file for history purposes

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2.5.2 Contract Supervisor

- a) Assign works order as per maintenance schedule issued by the planner at pre-determined interval
- b) Obtain technical reports from the contractor supervisor, evaluate the information where necessary include identified defects.
- c) Assist contract manager with contract management administration
- d) Assess any work completed and align it to the scope of work and task order.

2.5.3 Contractor

- a) All other maintenance activities to be performed in accordance with the relevant procedure and specification where applicable
- b) The Contractor to provide technical support and advice on constant failure trends of the equipment
- c) Provide consistent and cost-effective maintenance service.
- d) Ensure that the application and implementation of appropriate maintenance tools and innovative techniques
- e) To provide adequate resources capabilities to carry out maintenance and inspection work and that support the Employer's objectives in line with contractual obligations.
- f) The contractor to adhere to all Employer's health and safety requirements and procedures on site
- g) The contractor to provide relevant documentation caters for the employer's equipment. This will include all records keeping of all activities.
- h) The contractor shall comply with all relevant SABS standards, OHS Act 1993 and also with the Employer's standards as specified from time to time
- i) The contractor shall record and report to the Employer the following
- j) All incidents and equipment failure to be reported to the Employer within the same day.
- k) The contractor must provide all required reports for overall system performance.
- l) The contractor submits to the Employer, a fully substantiated written damage report specifying the nature, scope and cost of rectification work required including a programme for execution.

2.6 PROCESS FOR MONITORING

Item	KPI	Targets
1	Calibration certificate issuing period	With Delivery
2	No. of NCR's	< 2

2.7 RELATED/SUPPORTING DOCUMENTS

Not applicable

2.8 SITE VISIT REQUIREMENTS

- a) Site induction must be done before commencing any work repairs
- b) Contractors must be informed to bring own PPE.

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- c) All communication must be in a form of writing.

3. SERVICE INFORMATION

3.1.1 Summary

The contract is for the provision of calibration of test equipment in accordance with the minimum designated frequency and in accordance with the "Occupational Health and Safety Act 85 of 1993", ISO/IEC 17025:2017. The *Contractor* calibrates the test equipment to a standard which is traceable to National Standards. Hendrina Power Station has a number of equipment that they use in the plant to perform parameter checks on instruments to confirm or verify the inputs, outputs and also test functionality. The correctness of these equipment is very important, and this is achieved by calibrating them once a year or as per equipment requirements.

3.1.2 Description of the Service

- The *Contractor* calibrates test equipment to a standard which is traceable to National Standard
- The test equipment calibration period expires.
- The Contractor collects expired test equipment from site to place they will be calibrated.
- Contractor dispatch expired test equipment for calibration to a SANAS accredited Laboratory for calibration
- Provide a SANAS calibration certificate with each item of equipment detailing:
 - The test points used.
 - Minimum of five per measuring range
 - Equally spread over the full range
 - The results obtained.
 - Test equipment used to carry out the calibration.
- Provide a fault report with each item that failed the calibration, detailing where the equipment failed the calibration.
- Verify and calibrating all equipment, replacing fuses where necessary.
- The company keeps records of the calibrated equipment for 2 years after the contract has ended.
- The Contractor shall give a one-year warranty on calibrated equipment, if there are any deviations, the Contractor is liable to correct the deviation / defect at no cost to Eskom.
- The Contractor obtain cost per repair and notify Service Manager.
- A complete written quotation must be submitted to the Service Manager who will, after approval of the quotation, issue a separate order for repair and re-calibration of the equipment.
- Calibration outstanding for 2 months, or more is to be expedited and a weekly progress report, detailing the reason for delay and expected completion date, are submitted to Service Manager
- Contractor delivers all completed calibration equipment to site after notification
- The Contractor shall only make use of approved test equipment for calibrations, and which is of higher accuracy than equipment to be calibrated.
- The Contractor shall be in a position to host Eskom employee/s for a site visit to confirm that the calibrating instrumentation is according to SANAS standards.
- The site visit will include but not limited to checking the calibration certificates for the calibrating instruments.
- Contractor submits invoice to APS for calibration or repair after payment certificate is accepted.
- Guaranteed period 30days after delivery to site,

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- Equipment only to be picked up from site after an official order is received.
- List of equipment to be calibrated in next section 3.1.4

3.1.3 Tender Technical Evaluation Strategy

The tender Technical Evaluation Strategy is a separate document which outlines the requirements, roles, and responsibilities for Provision of calibration of C&I test equipment at Hendrina Power Station for 5 years. The services will be outsourced to a suitable supplier and managed through a NEC Terms Services Short Contract. The documents will be read in conjunction with each other.

3.1.4 List of test Equipment

The table below lists the Eskom Hendrina Test Equipment that require calibration **service**. Note, it shall also be required to add new items to this table below when new assets are purchased and acquired by end users. There will however be a requirement to prove that the items purchased or acquired by end users are similar in function to those in the list below.

Description	Quantity	Department
FLUKE 87 TRUE RMS MULTIMETER	1	IED
FLUKE 572-2 IR THERMOMETER	1	IED
FLUKE 773 MILLIAMP PROCESS CLAMP METER	1	IED
SITRANS F US clamp-on thickness gauge	1	IED
BUDENBERG Deadweight Tester	1	IMD
Memocal 81B	10	IMD
Memocal 2000	10	IMD
Fluke 87	14	IMD
Fluke 187	6	IMD
Fluke 77	4	IMD
Fluke 177	8	IMD
Fluke 725	6	IMD
Fluke 8840A	2	IMD
Fluke 871	2	IMD
Fluke 568	2	IMD
Fluke 773 Clamp on Meter	2	IMD
MAJOR TECH OPEN JAW K2300R 1000A AC/DC CLAMP METER	2	IMD
FLUKE TEMPERATURE AND HUMIDITY TESTER	2	IMD
Druck Press Calibrator DPI610	2	IMD
Druck press Calibrator DPI620	5	IMD
Druck press Calibrator DPI615	3	IMD (TRNG)
GW Power Supply	7	IMD
T1270 IMAGING CAMERA	2	IMD

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CRYSTAL DIGITAL PRESSURE GAUGE	6	IMD (TRNG)
Dynamic DC Bench Power Supply	1	IMD (TRNG)
CPG 1500 DIGITAL PRESSURE GAUGE	4	IMD
CPG 1200 DIGITAL PRESSURE GAUGE	4	IMD (TRNG)
BUDENBERG DIAL GAUGE 100MM	5	IMD
BUDENBERG DIAL GAUGE 250MM	7	IMD
Druck Press Calibrator	2	IMS
BLOCK CALIBRATOR TECHE DB 700A	2	IMD
TORQUE WRENCH	2	IMD
DRYWELL CALIBRATOR	2	IMD
RESISTANCE BOX	4	IMD
TEMPERATURE AND HUMIDITY TESTER	2	IMD
ERO ELECTRONIC OHM ERO	2	IMD
HONEYWELL PYROMETERS	56	IMD
FUNCTION GENERATOR	1	IMD
OSCILLOSCOPE	1	IMD
BEAMEX TEMP CALIBRATOR	1	IMD
BEAMEX PRESSURE CALIBRATOR	1	IMD
PHILIPS FUNCTION GENERATOR	1	IMD
MEGGER	2	IMD
PORTABLE MULTI GAS MONITOR (MGT SERIES)	12	IMD
BENKO MULTI GAS TRAP MONITORS	12	IMD
FLEXIM PORTABLE CLAMP ON FLOW METER	2	PPD
QUEST TEMP L89203 HEAT STRESS MONITOR	1	PPD
Drager X-am 8000	1	PPD
Micro Rae PGM-2602 , M032-4111-200 Portable Gas Monitor	1	PPD
Testo 340 O2 Analyser	2	PPD
He, H2 Sniffing Machine Leybold Phoenix XL 300	1	PPD
Scale Mettler PJ 6000	1	PPD
Shaw Dew Point Meter	1	PPD
QUEST Temp 34 Thermal Environment Monitor	1	PPD
MRU AIR Gas Detector 400GD	1	PPD
FLUS InfraRed Handheld Thermometer	2	PPD
Oven Laboratory Supplies	1	PPD
Shaker Analysette3 Pulversette 0	2	PPD

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PF Sampler Iso Kinetic LC4	1	PPD
Fluke 52 Thermometer	1	PPD
Handhled Thermometer Sentry Spot Gun	1	PPD
Ultrasonic Thickness Gauge Time	1	PPD
Ultrasonic Thickness Gauge Time time 2113	1	PPD
Air Neotronics Manometer PDM 309	3	PPD
Kestrel Velocity Meter 1000	1	PPD
Kestrel Heat Stress Tracker 5400	1	PPD
LEAK DETECTOR (HELIUM AND H2) – UL 1000 X 4 PROBES WITH REMOTE CONTROL	1	PPD
O2 ANALYSER – AMPRO 1000	4	PPD
DEW POIN METER – SHAW METER	3	PPD
H2 SNIFFING HANDHELD – GASDEKETO 400GD	2	PPD
GAS ANALYSERS – DRAGER X-AM ALL CELLS 8000	4	PPD
ACOUSTIC MACHINE	2	PPD
(300,150,106,75)MICRON SIEVES- ANALYSETTE SIEVES	10	PPD
SCALE – METTLER PJ 600	2	PPD
HEAT STRESS METER KESTREL 5400	3	PPD
HANDHELD INFRARED XTEMPERATURE MACHINE FLUS IR 866U	3	PPD
HAND WIND METER - KESTREL 1000	3	PPD
THICKNESS TESTER – CYGNUS 3+ PRO	3	PPD
ULTRASONIC CAMERA – DISTRAN ULTRA M V2	1	PPD
OPTICAL GAS IMAGING CAMERA – FLIR GF343	1	PPD
HANDHELD THERMOMETER FLUKE 52II	2	PPD
ULTRASONIC FLOW METER	2	PPD

3.2 MEETINGS

- a) Any other meeting that may be initiated and scheduled by the contract manager or contract supervisor as when required

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4. AUTHORISATION

This document has been seen and accepted by:

Name	Designation
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5. REVISIONS

Date	Rev.	Compiler	Remarks
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6. DEVELOPMENT TEAM

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

7. ACKNOWLEDGEMENTS

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