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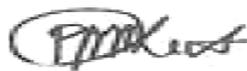
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Compliance Statement

The Quality System described in this plan is binding for all the Project Management Team that will execute the Mookodi 1st 500MVA Transformer Project.

The Project Management Team shall ensure that all the personnel under their responsibility have understood the objectives and lines of action for the Quality System. They must also ensure that these subordinates apply the procedures that are related to their positions, to ensure that all quality, corrective action, prevention, health, safety, and environmental policies are complied with.

The quality resource thereby ensures compliance and, when appropriate, proposes any necessary actions to the Management Team, to ensure that all the Quality System operations are permanent in keeping with the established objectives.

1. Introduction

The Quality Management Systems focuses mainly on how the Management team plans and executes their quality initiatives. This document does not form part of the works information in the request for tender and contract documentation but provides confidence that an agreeable level of quality, of the works and service, will be achieved.

2. Scope

2.1. Applicability

This document applies to the whole **Mookodi 1st 500MVA Transformer Project** management team and covers planning, management, monitoring and reporting of quality related tasks, responsibilities, applicable processes, resourcing, and requirements for all phases in the projects/processes. This also document also applies to all **Mookodi 1st 500MVA Transformer** project employees, stakeholders and interested parties (GBE, procurement, finance, manufacturing, quality, safety, installation, and commission works).

2.2. Detailed Scope/High Level Scope

The project main scope of work:

The primary objective of the project is to install first 400/132/22 kV 500 MVA transformer and a 22/0.4 kV auxiliary transformer, cater for a spare 500MVA transformer bay, 4 x 400kV spare feeder bays, 2 x 400kV Busbar Reactor bays and 9 x 132 kV spare feeder bays. Hence extend both 400kV and 132kV yard terrace and extend both 400kV and 132kV busbars in the north-western and south-western directions. The existing fences and will be dismantled and relocated. The access control building will be relocated.

The high-level scope of work for the 400kV system is as follows:

- Extend 400kV Busbar 1 and Busbar 2 in the north eastern direction to install a Bus Coupler A and Busbar 1 Bus Section 1, and to cater spare bays for Transformer 11, Feeder 1, Feeder 6, Busbar Reactor 12 and Busbar 2 Bus Section 1.
- Extend 400kV Busbar 1 and Busbar 2 in the south western direction to install first 500 MVA Transformer 14 and to cater spare bays for Feeder 4, Busbar Reactor 11 and Feeder 5.
- Establish Transfer Busbar by extending existing Bypass Busbar 2.
- Transfer Bus Coupler A will be installed in the existing spare Busbar Reactor 11 bay.
- Install 400kV Transformer 14 bay
- Install 1 x 500 MVA 400/132/22kV YNaOd1 Auto Transformer.
- Install 1 x 315 kVA 22/0.4 kV Dyn11 Auxiliary Transformer
- Install 400kV Bus Coupler A
- Install 400kV Transfer Bus Coupler A
- Equip 400kV Busbar 1 Bus section 1
- Decommission existing Busbar 1 Earthing Switch placed in the Busbar 1 Bus Section 2 Future Bay
- Install Busbar 1A CVT

The high level scope of work for the **132kV** system is as follows:

- Extend 132kV Busbar 1 and Busbar 2 in the north eastern direction to install Bus Coupler A and to cater spare bays for Transformer 11, Feeder 1, Feeder 12, Feeder 13, and Feeder 14.
- Extend 132kV Busbar 1 and Busbar 2 in the south western direction to install Transformer 14 and to cater spare bays for Feeder 8, Feeder 9, Feeder 10, Feeder 11, and Capacitor 13.
- New spare feeder bays are built with bypass facility
- Existing spare feeder 3 will be the ninth spare bay under this project

- Install 132kV Transformer 14 bay
- Install 132kV Bus Coupler A
- Equip 132kV Busbar 1 Bus section 2
- Decommission existing Busbar 1 Earthing switch placed in the Busbar 1 Bus Section 1 Future Bay
- Install 132kV Busbar 1B VT

Target Dates

Start: 01 March 2020

End: 31 March 2028

2.3. Normative/Informative References

2.3.1. Normative

(Report Number: GP_21/15) – Northern Grid Transmission Capacity Assessment North West and Limpopo province 2021-2030

Mookodi first 500MVA Transformer User Requirement Specification

(Report Number: GP_20/206) – Northern Cape Strengthening for Renewable Generation Integration (IRP 2019)

(240-55922824) - Substation Layout Design Guideline

(240-109644476) - Standard for implementation of Substation Layouts for Transmission Substations

(240-55921217) - Substation Engineering Product Realisation

South African Grid Code

Occupational Health and Safety Act (OHS Act) 85 of 1993

(32-1205) - Eskom Maintenance Management Policy

(TST41-794) - Substation and Facility Maintenance

(240-43008621) - Eskom Generation and Wires Operating policy

- (32-727) - Eskom Safety, Health, Environment and Quality policy
- (32-846) - Operating Regulations for High Voltage Systems
- (SANS 10400-XA) Energy Usage in Buildings
- (SANS 204) - Energy Efficiency in Buildings
- (SANS 1200) - Standardised Specification for Civil Engineering Construction
- (IEEE Std 80) - IEEE Guide for Safety in AC Substation Grounding
- (240-53459042) - Process Control Manual (PCM) for Perform Substation Engineering
- (240-46977482) - Process Control Manual (PCM) for Perform Technical Assessment
- (240-120804300) - Standard for the Labelling of electrical Equipment within Eskom Wires Networks
- (240-96393507) - Soil Resistivity Testing for Substation Applications
- (240-101940513) - Earth Electrode Resistance Measurement standard
- (240-95773230) - The Transmission Substation Earth Fault Application Guide
- (240-134369472) - Substation Earth Grid Design Standard
- (240-53113685) - Design Review Procedure
- (240-606480018) - Terms of Reference for Design Review Teams presiding over Power Delivery Infrastructure Designs in Eskom
- (240-83382076) - Standard for Operational Floodlighting in Substations
- (240-83382122) - Emergency Lighting in Substations
- (240-109589380) - Direct Lightning Stroke Protection of Substations
- (240-97758043) - Short Circuit Capability of Substation Portal Structures from 6.6kV to 765kV
- (240-94743192) - Specification for Fabrication Steelwork used in Eskom Transmission Substations
- (240-68972308) - Standard Procedure for Single Line Diagram Development
- (240-68972746) - Standard Template of Information Required to produce Substation Drawings

(240-82736997) - Stringing, Cabling, Earthing, and Erection Specification for Transmission Substations

(240-68971972) - Standard for Stranded Flexible Conductor Selection

(240-53113927) - Specification for Substation Clamps for Stranded Aluminium Conductors

(240-83534936) – Tubular and Stranded Conductor Clamps Additional to the Existing Standards

(240-85524358) - Standard for Determining Busbar Conductor Short-Circuit Forces and Phase Conductor Displacement in Outdoor Substations

(240-85524376) - Standard for Determining Dropper Conductor Short-Circuit Forces on Equipment in Outdoor Substations

(240-68972898) - Standard for the Choice of Single and Three Mechanism Circuit Breakers

(240-77297024) - Standard for the Operating Diagrams for Eskom Transmission Substations

(240-68971742) - Standard for Corona Studies

(240-97364498) - The Design Philosophy for 132 kV Strung Flexible Stranded Conductor Busbar Yards

(240-97364660) - The Design Philosophy for 132 kV Tubular Conductor Busbar Yards

(240-98447933) – The Design Philosophy for 275 kV Strung Flexible Stranded Conductor Busbar Yards

(240-95242258) - The Design Philosophy for 400 kV Strung Flexible Stranded Conductor Busbar Yards

(240-95242252) - The Design Philosophy for 400 kV Tubular Conductor Busbar Yards

(240-68972170) – Standard for Independent Power Producers Connection at Main Transmission Substations

240-68972408 – Standard for Flexible and Tubular Conductor Heights and Phase Spacing

(240-108982466) – Standard for HV Yard Stones in Eskom Substations

(240-105658000) – Supplier Quality Management: Specification

(240-68972408) – Standard for Flexible and Tubular Conductor Heights and Phase Spacing

2.3.2 Informative

- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)
- 240-69119603: Start up Project
- QM 58
- ISO 9000:2005 Quality Management Systems – Fundamentals and Vocabulary
- ISO 9001:2015 Quality Management Systems Requirements
- ISO 10005:2005 Guidelines for Quality Plans Standards
- ISO 10006:2003 Guidelines for Quality Management Systems in Projects
- ISO 14001 Environmental Management Systems
- Occupational Health and Safety Act (Act 85 of 1993)

3. Quality Objectives

The purpose of this document is to describe the Project Quality Management System (including quality planning, assurance, and control) established the **Mookodi 1st 500MVA Transformer project** site, in order to ensure that all quality planning, assurance and control programmes, policies and procedures are complied with.

The Project Manager in conjunction with the appointed project quality resource shall ensure that the Quality System is utilised to determine customer needs (both stated and implied) to enhance customer satisfaction. The activities of the **Mookodi 1st 500MVA Transformer** project contractors, suppliers and sub-contractors shall conform to the contractor's project approved Quality Management Systems, and to the **Mookodi 1st 500MVA Transformer** Project's Quality Management System, to ensure compliance with the contract requirements. Other relevant project procedures shall be prepared before the commencement of the construction activities, and to be approved by the project before implementation.

The responsibility for preparation, implementation, revision, review and approval of this plan, policies, procedures, and quality plans are outlined in the Quality Management System procedures.

4. Roles and responsibilities

4.1. Quality Assurance

- a) The appointed quality assurance resource will be responsible for ensuring that quality activities as outlined in this document are implemented appropriately and complied with,
- b) Conducting internal audits to ensure continuous improvement.
- c) Conducting external audits where required to assess and report to procurement that the suppliers are compliant to international and client's standards.
- d) Report on any non-compliance to the requirements of this document to the Project Manager,
- e) Promote quality through forums, awareness sessions and training etc.
- f) Communicate the requirements of this document to the management team and the contractors.

4.2. Project Manager

- a) The Project Manager is responsible for the implementation of this document, the Project Implementation Management System (PIMS) / Business Plan and ensures that the requirements are complied with.

5. Quality overview

The Mookodi 1st 500MVA Transformer project's approach to the management of the quality of its implementation includes a combination of quality planning, quality assurance and quality control by the management team, contractors, suppliers, sub-contractors, and other stakeholders or interested parties who are or will be involved in the implementation of the project. This Project Quality Plan details the systems and controls that the **Mookodi 1st 500MVA Transformer** management team has or will put in place so that the quality of the project will meet the requirements specified in the projects plans. The document provides definition and overall management of the quality approach to be followed by employees, contractors, suppliers, sub-contractors, and consultants. The quality of the project's implementation will be ensured through an

integrated system of quality planning and assurance performed by the Project quality resource and quality control provided by both the projects and contractor's supervisors. The Project quality resource and site supervisor is responsible for the day-to-day coordination of quality planning and assurance and quality control measures on site. Quality contractual requirements for the contractors, suppliers and sub-contractors are stipulated in the contract quality requirements standard (QM58).

5.1. Project Processes

This Project Quality Plan been developed in accordance with standard no. QM58. **The Mookodi 1st 500MVA Transformer project** processes will be managed through the Project Life Cycle Model (PLCM). The PLCM is a process-based approach for project management providing an easily tailored and scaleable method for the management of projects. Each process is defined with its packages, key inputs and outputs together with the specific objectives to be achieved and activities to be carried out. The Project quality plan sets out the aims of the project as a framework to guide the Project Management Team in achieving success.

6. Document and Data Control

The Mookodi 1st 500MVA Transformer management team has established a document control procedure to control documents and data to ensure that:

- a) All necessary and appropriate documents are available.
- b) All documents and changes are in writing, reviewed and approved, and promptly implemented.
- c) The dates of issue and receipt of documents and amendments are recorded.
- d) Obsolete documents are promptly removed from issue or use.
- e) Documents of external origin are identified and controlled.

Documents to be controlled will normally include: Project implementation manual (PIM)/business plan/charter, manuals, procedures, plans, processes, records of decisions, safety, health and environmental procedures and processes, financial documents, HR documents and other relevant documents, commercial procedures and processes, customer Instructions, project briefs, design statements, calculations,

drawings (whether internally or externally produced), specifications, conditions of contract, inspection and test plans, resulting records etc.

7. Records Control

The Mookodi 1st 500MVA Transformer management team has established a procedure to control all project records to comply with the Quality Management System and Contract requirements. Quality Records are generated in many forms, such as minutes of contract review meetings, inspection and test results, calibration certificates, product conformity certificates, confirmations of verbal instructions, resolved non-conformance reports, drawings, designs, defects, data on computer disks, communications, etc. Compliance is demonstrated as described below:

- a) Quality Records are prepared and maintained to demonstrate (1) that the work meets specification and (2) the effective operation of the **Mookodi 1st 500MVA Transformer Quality** Management System.
- b) The scope and retention of Quality Records shall be agreed with the customer for the project. Quality Records are made available to the customer, or its representative as specified in the Contract (URS).
- c) A systematic approach is applied to the storage, protection, and retrieval of Quality Records. Records are kept for a minimum period determined by the AME Project policy and Contract requirements.

Project documents will be managed through a combination of a secure document filing and controlled storage system and a computerised document tracking system.

Guidance on how the contractor must control their documents and records is given in the Contract Quality Requirements standard, QM58

8. Management Responsibility

8.1. Customer Focus

The Mookodi 1st 500MVA Transformer management team recognises the importance of customer needs. **The Mookodi 1st 500MVA Transformer** management team shall make themselves familiar with the contract requirements (URS) both stated and implied.

All post delivery requirements, as well as statutory or regulatory constraints, shall be addressed to ensure that the customer's requirements are satisfied.

The Mookodi 1st 500MVA Transformer management team will monitor information and data, relating to the customer's perception of the management team, to determine whether the organisation has complied with the customer requirements.

The Mookodi 1st 500MVA Transformer management team places particular emphasis on ensuring customer satisfaction by:

- a) Preventing non-conformities at all stages,
- b) Adhering to the project schedule,
- c) Employing efficient project techniques,
- d) Providing value for money,
- e) Ensuring the safety of all concerned and meeting applicable regulatory and statutory requirements.

8.2. Quality Policy

The Quality Management Division has established a Quality Management Policy which guides everything that the Division does in relation to Quality Management System Policy and its effective implementation. **The Mookodi 1st 500MVA Transformer** management team has further established objectives that are aligned to the Division's objectives.

8.3. Management Review

The Quality Management System shall be formally reviewed at least two times a year by the **Mookodi 1st 500MVA Transformer** management team to ensure its continuing suitability and effectiveness in meeting requirements, and applicable statutory and regulatory requirements. The review meeting will be attended by 50% of the management team to form a quorum. The agenda for the review meeting will as a minimum meet the requirements of ISO 9001:2015.

The policies and objectives are reviewed for compliance and any changes will be implemented and documented accordingly for continual improvement. Records of such

reviews shall be maintained by the quality resource in the form of minutes of the review meeting with actions for follow-up and distribution.

9. Resources Management

9.1. Management team

The **Mookodi 1st 500MVA Transformer** management team shall ensure that all personnel under their responsibility have understood the objectives and lines of action for the Quality System. They must also ensure that these subordinates apply the procedures that are related to their positions, to ensure that all quality, safety, health and environmental policies are complied with.

Employees are responsible for ensuring that quality requirements are adhered to and all the non-conformances are reported to the relevant personnel for investigation and action.

9.2. Contractors

The contract quality requirements standard (QM58) has been established and will be issued to all contractors. The standard forms part of the scope of work in the request for tender and contract documentation and provides confidence that an agreeable level of quality of work and service will be achieved. The purpose of the standard is to ensure that contractors, suppliers, and sub-contractors are guided to comply with quality requirements as specified. Consistent quality management system requirements are applied to all projects and gives confidence that the contractor, supplier and sub-contractor comply with the scope and the expected quality requirements.

Pursuant to the Contract Quality Requirement standard (QM58) each contractor will submit an organisational chart developed to show all QA/QC personnel and how these personnel integrate with other management, production and execution functions and personnel. All QA/QC staff members are subject to acceptance by Eskom. These personnel shall ensure that contract compliance is achieved. **The contractor shall always have a QA/QC representative on-site during execution of the works and this person shall have authority to take any action necessary to ensure compliance with the contract.** The contractors must exercise authority over their workforce (employees and sub-contractors), including QC personnel and their third-party QC support services.

9.3. Project Communication (Internal communication)

The Project Manager has developed a communication plan to ensure that there is a clean line of communication within the project. The need for effective communication within the organisation, and the importance of meeting customer, statutory, and regulatory requirements is stressed throughout the quality documentation.

The Functional Managers are responsible for ensuring that the activities which they control function effectively in accordance with this plan and the associated procedures.

The quality assurance system defines how each personnel contribute towards the fulfilment of the Quality Policy. Ultimately, the responsibility for quality rests with all Management team members.

The competence of all personnel will be monitored through the management system. The organisational structure defines the relationships between the members of the Management team and shows how authority to control quality is delegated.

9.4. Competence, Awareness, and Training

The Project Manager shall put significant emphasis on the competence of its personnel for effective quality control of the work. They shall monitor the competence of the personnel and shall develop plans to ensure that:

- a) The personnel and operatives employed in the execution and supervision of works must be adequately competent for the duties they perform.
- b) Training needs must be identified, and records are kept of training received and employee performance.
- c) All personnel, including new recruits, who affect quality, must have access to a (controlled) copy of the Project Quality Plan, the Quality Manual, and the associated procedures so that the quality requirements are widely understood from the start of the employment.
- d) Quality forms part of the induction program to ensure that every new member of the organisation know their requirements.
- e) Rewards and recognition programmes to be implemented.

As part of a continuing education program, the Project may use external courses and/or in-house training courses specific to site, including training in Quality Management Systems, Health & Safety, Technical, Commercial, Human Resources, Finance and Environmental requirements. Other forms of empowerment like mentoring and coaching can be used. These records must be maintained in a system file.

10. Project Execution

10.1. Requirements review

The project has established a procedure/process (team/squad checks) for contract review and for effective coordination of contract activities, including contractor and customer liaison (32-188).

The contract is reviewed to ensure that the requirements are adequately defined and documented, and that the Management team has the capability to meet these contractual requirements with suitable resources. The contract is formally reviewed before and after contract award to ensure that the proposal and award requirements of the contract are identical, and, where they differ, differences are resolved. The review is carried out at tender and contract strategy, scope and works information definition, project execution, the contract hand-over and close-out meetings. Channels of communication and interfaces with the contractors are subsequently established. Items of discussion/review include schedule, progress, resources, changes, (manpower, materials, scope of work) risk and safety. These meetings will provide data for satisfaction monitoring. All reviews are recorded and maintained as part of the Quality Records.

10.2. Customer communication

Customers will be kept up to date with the progress of the project through formal meetings, communications, and any other documented form of communication. Customers issues and complaints shall be collected and analysed, and actions taken to resolve the issues/complaints. A customer complaint process will be established to ensure that customer perceptions are collected and analysed to improve the processes.

10.3. Design Control

The Mookodi 1st 500MVA Transformer management team have established and maintain procedures to ensure that designs are planned, controlled, and verified to conform to the specified requirements. The following procedures are available: - **Mookodi 1st 500MVA Transformer System** Engineering Change Management Process for Contract Works Information; and Design Review Processes, Concession Acceptance process, etc.

The measures established in the procedure will ensure that:

- a) Design planning is carried out in a controlled manner by qualified personnel with adequate resources. A design plan or procedure will be reviewed and updated when necessary.
- b) Design interfaces are identified, (e.g., organisational, technical) the necessary information is documented, transmitted, and reviewed until accepted.
- c) Design input requirements are identified, documented and their selection reviewed for adequacy. Ambiguities, if any, shall be resolved by reviewing these against requirements.
- d) Design output is checked to ensure it meets the design input and reviewed before its release.
- e) Design changes and modifications shall be identified, documented, reviewed relative to original specification and/or product liability, and submitted to the Project Manager for approval where contractually required.
- f) Design verification is subject to independent verification and as defined by the contract documents.
- g) Design validation is achieved by successfully following the previous steps

10.4. Purchasing

The purchasing procedure (32-188) shall be followed for all the purchases to ensure that:

- a) Products and services are provided by contractors, suppliers and sub-contractors who can demonstrate their ability to supply products or services which conform to the specified purchase requirements (quality, schedule, and price).
- b) Selection of the contractors, suppliers and sub-contractors must be based on:

- I. Their fulfilment of the requirements as specified in the Contract Quality Requirements Standard, and other requirements stated by Eskom.
 - II. All contractors shall be pre-evaluated/pre-qualified in line with applicable procurement policies, processes, and procedures to establish their ability and suitability to supply the required products or services
 - III. Inspection and assessment of contractors, suppliers, and sub-contractors' Quality Management Systems, where appropriate.
 - IV. Review of previous records, qualifications of personnel and performance to provide materials/services like those to be procured. Exceptions will be new contractors, suppliers and sub-contractors, specialists, and when only one source is available / sole supplier.
 - V. Survey and evaluation of the contractors, suppliers, and sub-contractor's facilities to ensure quality is consistently achieved, and to assess whether the materials/services conform to the required standards of quality, on a specific contract. A reassessment may be necessary if survey and evaluation warrant such action.
- c) When purchase orders are issued to contractors, suppliers, or sub-contractors, they will incorporate:
- I. Material/product specifications and relevant quality standards.
 - II. A requirement to identify environmentally hazardous materials and provide Material Safety Data Sheets.
- d) Purchase requisitions are reviewed (squad checks) and approved to ensure the adequacy of the specified purchase requirements prior to communication to the supplier.
- e) **The Mookodi 1st 500MVA Transformer** project will only use approved contractors / suppliers / sub-contractors who are registered in the Eskom vendor list. If approval of a contractor, supplier or sub-contractor is required prior to placing an order, approval will be obtained by the Procurement Manager.

10.5. Process Control (Work Environment)

The Project Manager shall, by a process of review and/or reporting, establish a work environment that promotes completion of the work according to the contract requirements or works information.

10.6. Process Control (Works Control)

The Project has established and maintains a process to comply with the following objectives (QCP / Inspection process):

- a) Control works activities and deliver work that meets contract requirements.
- b) Define the manner of meeting the specification set, with reference to Standards and Codes of Practice (where applicable).
- c) Outline the work and administrative procedures and ensure that they are identified in the Contract Quality Plan (CQP).
- d) Provide a means of monitoring and controlling the execution process, via an Inspection and Test Plan / QCP. Ensure that contractors observe the documented work procedures and method statements.
- e) Ensure the designers follow all the specifications and requirements stated in the contract.
- f) Keep records of supervision and the circumstances under which the work was accomplished and include the measures required to protect the permanent works (where applicable).
- g) Maintain records of special processes (e.g., welding, complex computer programs, use of ground anchors, etc) including equipment and personnel (with qualifications) as appropriate. The Contract Quality Plan will identify any special processes and procedures to control this activity.

The contractors are required to implement the project in accordance with the contract documents or work information and are responsible for the quality control of their product as well as the necessary inspections and tests required to ensure that their work complies with the contract requirements.

The contractors are responsible for executing the work in accordance with the plans and specifications or work information. Each contractor is also responsible for controlling the quality of their work to meet contract plans, specifications, and related requirements. The contractor's Quality Control is a systematic implementation of a program of inspections, tests, and production controls to attain the required standards of quality and to preclude problems resulting from non-compliances/defects. Pursuant to the Contract Quality Requirements Standard, each contractor will establish an independent Quality Control program and develop a Contract Quality Plan (CQP) and the Quality Control Plan (QCP or ITP). The QCP must provide for tests and inspections pursuant to various technical specifications. It will define procedures to ensure that activities affecting quality are properly documented and accomplished in accordance with contract documents, written instructions and industry standards, codes, and procedures. Furthermore, the CQP will define methods for ensuring that activities affecting quality will be accomplished under controlled conditions.

Independently of the contractors, the quality resource will provide Quality Assurance through daily monitoring and **scheduled audits** and **inspections** to verify the effectiveness of the contractor's Quality Control program and assure that the quality and contract requirements are met by the contractors. The quality resource assures that the contractor's Quality Control is working effectively, and that the resultant product or service complies with the quality requirements established by the contract.

10.7. Control of customer property

The Mookodi 1st 500MVA Transformer management team shall exercise care with customer property while it is under its control or is being used by the team. The Management team shall identify, verify, store, and maintain customer property, provided for use or incorporation into the product (works). The procedure will ensure that:

- a) Incoming property is not used or processed until it has been inspected or otherwise verified as conforming to the specified requirements.
- b) Any property that is lost, damaged or otherwise unsuitable for use is recorded and reported to the customer and records maintained.
- c) Agreement is reached with the customer regarding the fitness of the supplied property for its purpose and incorporation into the product.

Note: Customer Property may include 'Intellectual' property e.g., Specification, Drawings, Computer Software, etc.

10.8. Product Identification and Traceability

The Mookodi 1st 500MVA Transformer management team shall suitably identify products from applicable drawings, specification, or other documents during all stages of production, delivery, and installation, as required by the contract documents.

Where, and to the extent that traceability is a specified requirement, individual products or batches shall be given unique identification. This identification will be recorded including their status and location in the works. These records will form part of the quality documentation.

10.9. Inspection and Testing

The inspection and testing procedure has been established and maintained to ensure that (QCP / Inspection Process):

- a) Acceptance of incoming products is achieved by signing the delivery note. Upon delivery, visual inspections will be made, and any damage / discrepancy will be noted on the delivery note. Where inspection is not possible (due to, say, bulk delivery), a note may be made on the delivery note stating 'not checked' etc.
- b) When a product is to be inspected and checked at the supplier's premises, the Management team shall specify the checking and compliance criteria to be fulfilled prior to product release, QCPs are signed by all parties if standards are met, and NCR/defects issued where standards are not met.
- c) Effective in-process checks, inspections, and tests must be put in place and identified in the Contract Quality Plan. The Contract Quality Plan shall identify the records to be kept and maintained to provide evidence that the product has passed these inspections and tests. Any non-conforming/defective product will be identified and remedied as described in the control of non-conforming products procedure (39-64). Contractors, suppliers, and sub-contractors' quality documents must provide for the management team's "hold / witness / verify, review, points" within the process (as appropriate).

- d) Where traceability of a product is required, records containing the unique identification, status and location of the product are maintained.
- e) Quality Control Plans prepared by the contractor shall allow for the Project Manager (or his/her representative) to insert their 'hold, witness, verify, review points'. "Hold" - No further activity to progress until cleared by signing off. (Verbal clearance may not be accepted, all work must be signed-off and records must be retained by the Management team).
- f) Prior to handover by the contractors, all works is subjected to final inspection and tests in accordance with the Quality Control Plan and records collated to provide evidence of conformance of the finished product to the specified requirements. A punch list (list of defects or non-conformances) must be produced by the Management team (in conjunction with the contractor) of items requiring remedial action. Completion of such listed work will be considered final satisfactory inspection. Punch-lists shall be signed off by the contractor or its representative, to confirm substantial completion of works.
- g) The records are formatted so that persons authorising the release / acceptance are identified.

10.10. Control of Inspection, Measuring and Test Equipment

In a case where the **Mookodi 1st 500MVA Transformer** management team will keep inspection and test equipment, a procedure shall be established and maintained to ensure:

- a) All equipment used in the inspection, measurement and testing is maintained and calibrated. The equipment is to be used in a manner which ensures that its limits of accuracy are known and applied to ensure that the measurements taken are meaningful relative to tolerances specified, and in appropriate environmental conditions. At times, comparing results with other calibrated equipment may be satisfactory, provided that the calibration history of the reference instrument is recorded.
- b) All testing standards are approved to known and acceptable Standards.
- c) All measuring equipment having a bearing on Quality will have a tag, sticker, or other marking, indicating its calibration status. Handling, presentation and storage

of all measuring and test equipment will be such that fitness for use is maintained.

- d) Records of the results of the calibration tests of the measuring equipment are maintained and will include, details of equipment, type, frequency of checks, check method, acceptance criteria and actions taken when results are unsatisfactory, e.g., re-testing.
- e) Templates, profiles, and other equipment used in setting out are checked regularly and records of these checks maintained, where appropriate.
- f) If computer software is used for monitoring and measuring of specified requirements, then the ability of the software to satisfy the intended application shall be confirmed prior to initial use and, later, while in use.

In addition to all survey equipment, the requirement will apply to concrete batch plants, weigh stations, laboratory equipment, pressure gauges, etc. If these services are procured from external sources, they are subject to procedures for the control of contractors, suppliers, and sub-contractors.

10.11. Inspection and Test Status

The **Mookodi 1st 500MVA Transformer** Quality Management System ensures, via established procedures, that the inspection and test status of each part of the work is evident at all stages of works.

Inspection records generated on a contract show either compliance to the specification or non-compliance via Non-Conformance/Defects Reports, until resolved.

Items or parts of the works which do not conform to the specified requirements are identified by the means of a Defect Notification or Non-Conformance report depending on the nature of the non-conformance. All relevant personnel are copied. The Defect Notification or Non-Conformance Report notifies them of the date, location, and the nature of the non-conformance. These items or parts of the works are only deemed acceptable to become part of the works when the Defect or NCR has been satisfactorily resolved. Completion of a particular part of a project is achieved only when the appropriate records identify completion of work together with any inspections and proving tests which have been completed, giving acceptable records.

Where traceability is a requirement, the **Mookodi 1st 500MVA Transformer** Management team will control and record the unique identification and location in works to the extent specified in the contract documents. This will apply to non-conforming products released after satisfactory inspections/tests, as applicable.

10.12. Handling, Storage, Packaging, Preservation and Delivery

If required, procedures will be established to provide:

- a) Methods and means of handling to prevent damage or deterioration.
- b) Secure storage area pending use or delivery, stock assessment at frequent intervals to detect deterioration, methods for authorizing receipts and dispatch from storage yards.
- c) Control on packing, preservation and marking processes to the extent necessary to ensure conformance to specified requirements.
- d) For the protection of the product after final inspection and test until handover to the customer. The protection shall include delivery to destination where specified.

Note: Partially or fully completed sections of works are protected until handover to the customer.

11. Measurement, Analysis of Data, and Improvement

11.1. General

The Mookodi 1st 500MVA Transformer management team measures the performance of its processes by:

- a) Evaluating the work relative to specified and implied requirements.
- b) Assessing the capability of its processes.
- c) Comparing the achievement of project objectives against project expectations.
- d) Examining comments received from the customer and other interested parties.

Since most the works/installation projects are unique, it is not feasible to carry out statistical analysis. When there is a repetitive activity, statistical techniques could be developed to verify the acceptability of process capabilities and product characteristics in

accordance with specified acceptance criteria, for that activity. Procedures would then be established for statistical analysis.

Note: The process of measurement, analysis and improvement is performed in full for all processes and is addressed via the applicable process procedures as in the PLCM. The items covered include, for example, conformity of products, conformity to the Quality Management System, customer satisfaction, characteristics and trends of processes and products highlighting opportunities for preventive measures and improvement.

11.2. Monitoring and Measurement

The Project Manager and Client Liaison Officer are responsible for establishing customer relations. This may involve direct contact with the customer on a periodic basis to determine levels of customer satisfaction. The quality resource will analyse customer complaints and identify corrective actions where required. Results of such analysis will be reported as necessary at management meetings.

11.3. Monitoring and Measurement of Processes

All processes are controlled by their own procedures. If required, the quality resource will identify the scope, type, and frequency of measurement of characteristics necessary to assess a process and, if necessary, will produce specific instructions for processes which affect performance. The quality resource will produce, monitor, and revise, at a suitable frequency, a non-exhaustive measurement and monitoring description for the processes. This will be referred to during internal audits.

11.4. Monitoring and Measurement of Product

The Mookodi 1st 500MVA Transformer management team will, as necessary, implement monitoring and measurement processes to ensure that: A documented procedure/process for inspection of incoming goods to be developed.

- a) Incoming products are inspected at the time of delivery, taking due note of quality controls exercised at the source and quality documents provided with the incoming product(s). (Inspection check sheets to be completed during inspections). (This includes contracted out design related work as well as sub-contract work and bought-in supplies/products). When a product is required urgently to be released for production purposes, it shall be positively identified

and recorded to permit immediate recall in case of non-conformance to specified requirements.

- b) Effective in-process checks, inspections and tests will be identified in the Quality Control Plan.

The Contract Quality Plan shall identify records to be established and maintained to provide evidence that the product has passed its inspections and tests. Any defect or non-conforming product will be identified and remedied as described in control of non-conforming product procedure. Contractors, suppliers, and sub-contractors' quality documents will comply with the **Mookodi 1st 500MVA Transformer** Quality Plan.

Prior to completion, all construction is subjected to final inspection and tests in accordance with the Quality Plan. Records will be gathered to provide evidence of conformance of the finished product to the specified requirements. Normally, a punch list is jointly produced of items needing some work. Completion of such listed work will be considered final satisfactory inspection. The customer's acceptance of the works will be considered as satisfactory delivery of the final product.

11.5. Monitoring and Measurement of the Interested Parties

The Project Manager has appointed a Client Liaison Officer who will collect whatever information is required to meet its needs and contract requirements. Measurements will be in the form of:

- a) Performance reviews.
- b) Financial performance.
- c) Customer complaints and compliments.
- d) Community complaints, etc.

11.6. Control of Non-Conforming Product, Corrective and Preventative Action

The **Mookodi 1st 500MVA Transformer Management** team has established a procedure (39-64) to identify and control any product which does not conform to specified requirements (and where possible to be segregated from the fabrication/construction activities to avoid inadvertent use). Non-conformance Reports

shall be written by the persons responsible for the activity or by the quality resource and logged on the SAP QIM.

Non-conformances are recorded and reviewed for appropriate remedial action using non-conformance reports and remedial action sheets. Response is also required to avoid recurrence of the non-conformity. This will be verified before closure. Remedial actions taken are inspected and tested, as necessary, in accordance with specified requirements.

This could be achieved either through rework, concessions, scrap or return to the supplier.

In appropriate circumstances, the customer will be consulted to approve the remedy. Consent/approval will be documented.

The Mookodi 1st 500MVA Transformer management team has established a procedure and a process used for identifying any non-conformance or defects (i.e., an occurrence not in conformance with procedure) within the Quality Management System. Such occurrences require the implementation of corrective actions where evidence of failure within the Quality Management System is apparent, or where the possibility (potential) of failure within the Quality Management System exists.

Corrective action is taken in accordance with established procedures to:

- a) Review and investigate the cause of non-conforming products or work by analysis of all relevant processes, work operations, concessions, quality records, audit observations, complaints and initiate corrective action to prevent recurrence.
- b) Initiate preventive actions to deal with problems including Developer complaints to a level corresponding to the risks encountered.
- c) Apply controls to ensure that corrective actions are taken and are effective.
- d) Implement record and review changes resulting from corrective and preventative actions in the procedures, and for general improvement of the Quality Management System.
- e) In general, the quality resource will raise the NCRs (Non-Conformance Request/Report). The non-conformance, corrective and preventive actions process together with the associated procedures elaborate further on the raising and resolution of defects, non-conformances, and risks.

11.7. Analysis of Data

The quality resource is responsible for collating and analyzing factual data from all relevant sources to demonstrate that the Quality Management System is effective. Sources can include Internal Quality Audits, Defects and Non-Conformance Reports, Contractor, Supplier and Sub-Contractors' Performance Information, Customer Rejections and / or Complaints,

Process Performance, Data based on adherence to schedule, Site Progress, and Developer Satisfaction Monitoring. Any trends and characteristics of process and products will be considered for opportunities of improvement.

Review of any such analysis shall be reported to the General Manager and Supervisory Board.

11.8. Continuous Improvement

The Mookodi 1st 500MVA Transformer management team will pursue a policy of continuous improvement of this quality management system via internal audits, review of NCRs and defects, process reviews, management reviews and any intervention deemed necessary.

11.9. Continual Improvement of the Organisation

The Mookodi 1st 500MVA Transformer

management team is encouraged to seek out improvements for existing practices. Their recommendations will be reviewed and, if implemented, monitored, and controlled. The quality resource will prepare an audit schedule on a predetermined basis. The frequency of audits will be at least two times a year for a department's activity. Contracts will be audited at least four times a year or as necessary.

The results of the audits are documented and brought to the attention of the management representative of the section audited for timely corrective action. Copies are also distributed to the Project Manager.

The quality resource may perform an unscheduled audit under special circumstances.

12. Handover

The appointed quality resource will be required to monitor and maintain all quality documentation, reports, and records during the project life cycle. This should be maintained as per QM-58 requirements. A duplicate Data book should be handed to the customer upon handover.

13. Authorisation

This document has been seen and accepted by:

Name	Designation
Puleng Tsatsi	Quality Manager
Allen Masuku	Manager: Projects

14. Revisions

Date	Rev.	Compiler	Remarks
17 March 2023	0	Phuti Ratau	New Document