	<b>Plan</b>	<b>Medupi Power Station Project</b>
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## Content

	Page
1. Introduction.....	3
2. Supporting Clauses .....	4
2.1 Scope.....	4
2.1.1 Purpose.....	4
2.1.2 Applicability .....	6
2.1.3 Effective date.....	6
2.2 Normative/Informative References .....	6
2.2.1 Normative.....	6
2.2.2 Informative.....	7
2.3 Definitions .....	7
Abbreviations.....	9
Table 2: Abbreviations .....	10
2.4 Roles and Responsibilities .....	10
2.4.1 General Manager.....	11
2.4.2 Project Quality Manager (PQM).....	11
2.4.3 Assurance & Compliance Manager .....	12
2.4.4 Senior Construction Manager .....	12
2.4.5 Quality Assurance Manager .....	12
2.4.6 Site and Off-Site Quality Control Manager (S/O QCM) .....	13
2.4.7 Discipline Quality Managers (DQM).....	13
2.4.8 Quality Auditors .....	14
2.4.9 Quality Control Inspector – Onsite, Offsite and Offshore.....	14
2.4.10 Document Control Manager.....	15
2.4.11 Construction Supervisors.....	15
2.4.12 Approved Inspection Authority (AIA) .....	15
2.5 Related/Supporting Documents .....	16
3. Document Content.....	16
3.1 Project Objectives .....	16
3.2 Project Context.....	17
3.2.1 Understanding the Project and its context .....	17
3.2.2 Internal and External Issues .....	17
3.1.3 Interested Parties.....	18
3.1.4 SWOT Analysis.....	20
3.2. Scope of the QMS .....	21
3.3.1 Quality Management System and its processes .....	21
3.4 Leadership .....	22
3.4.1 Leadership and Commitment.....	22
3.4.2 Customer Focus .....	23
3.4.3 Quality Policy.....	23

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3.5	Planning .....	24
3.5.1	Project Risks and Opportunities.....	24
3.5.2	Project and Quality Objectives.....	25
3.5.3	Planning of Changes to the QMS .....	25
3.6	Support .....	25
3.6.1	Resources .....	25
3.6.2	Competence .....	28
3.6.3	Awareness.....	29
3.6.4	Communication .....	29
3.6.5	Documented Information .....	29
3.7	OPERATION .....	31
3.7.1	Operation planning and control.....	31
3.7.2	Requirements for Products and Services.....	31
3.7.3	Design and Development of Products and Services .....	33
3.7.4	Control of Externally Provided Processes, Products and Services.....	35
3.7.5	Production and Service Provision .....	36
3.7.6	Control of Nonconforming Outputs .....	39
3.8	PERFORMANCE EVALUATION .....	39
3.9	IMPROVEMENT.....	41
4	Process for Monitoring.....	42
4.3	Key Performance Areas and Indicators .....	42
4.4	Document Review and Self-Assessment.....	43
4.4.1	Document Self-Assessment .....	43
4.4.2	Revision Period .....	43
4.5	Training Requirements .....	43
5	Acceptance.....	43
6	Revisions.....	44
7	Development Team .....	44
	Appendix A – Process Self-Assessment Checklist.....	45

## Figures

Figure 1: Medupi Quality Management Processes .....	21
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## Tables

Table 2: Definition.....	7
Table 3: Abbreviations .....	10
Table 4: RACI Matrix.....	10

## 1. Introduction

Medupi Project consists of the construction of a coal fired power station comprising of six (6) dry cooled units to provide electricity in order to alleviate the shortage of electricity in South Africa.

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Once completed, Medupi Power Station in Lephalale will be one of the largest (produces 794 MW per Unit) dry-cooled coal fired power plant in the world and also the biggest thermal power plant ever constructed in South Africa.

The project will be delivered in accordance with client (being Eskom Generation Division) requirements, as defined in the User Requirement Specification (URS) Divisional Client Office (DCO) URS Rev 4.

## **2. Supporting Clauses**

### **2.1 Scope**

The scope of this Project Quality Plan is to define and describe the Medupi Power Station Project quality management system (QMS) at Lephalale. Team Medupi (TM) is responsible to develop and implement a quality management system based on ISO 9001:2015 in order to satisfy the customer's requirements and continuously improve the overall execution of the project.

#### **2.1.1 Purpose**

The objective of this document is to define how the project Quality Management System (QMS) will be executed by Team Medupi who is tasked with providing Project Management and Construction Management services in support of the Medupi objectives. This plan covers the objectives from 2021 until the end of 2024. The document will continuously be reviewed with the standard review frequency of 3 yearly. The primary Medupi Project objectives being:

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- Completion of the ISO 9001:2015 Re-Certification Audit within 2021/2022 Financial Year, and thereafter maintain the world class Quality Compliance to the standard
- Completion of the ISO 45001:2018 Transition within the 2021/2022 Financial Year, and thereafter maintain the world class Safety Management System compliance to the standard
- Maintain Safety focus: 0 LTIs, 250 LTI free Days, improve compliance, improve ownership and improve housekeeping
- Maintain Environmental focus: No legal contraventions, improve contractor compliance, improve ownership
- Contractors monitored to deliver their works within the Contracts up to acceptable Taking Over and Handing Over of the completed works to Eskom Generation
- Complete the Project within the budgeted cost about the P50 Business Case
- Deliver the Units and BOP Plants to Eskom Generation as technically required in the URS
- Handing Over of Unit 1, and completed Balance of Plant (BOP) to Eskom Generation with minimal defects including adequate documentation to enable productive operation and maintenance within this Financial Year (2021/2022)
- Completion of outstanding BOP plant works including plant defects
- Resolve design defects and plant issues during outages within the ERA approved budget and time
- Meet the needs and expectations of Medupi internal and external interested parties to enable a stable environment for the delivery of the Project
- Identify Risks and Opportunities to the Project, and develop plans to mitigate the risks and realise benefits for the opportunities
- Provision of adequate resources and promotion of skills transfer within the Project
- Continual improvement to excellence for Medupi Project in the Eskom GCD performance scorecards
- Deliver a minimum of 4 on all the Medupi BU Compact elements

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This PQP as a mandatory requirement of the quality management system is used internally to guide the projects' employees through the various requirements of the ISO standards and other projects' requirements or standards or regulations that must be met and maintained. This will ensure that the designed processes are in line with clauses 4 to 10 of the ISO 9001:2015 Standard thereby achieving the following:

- Enhancing customer satisfaction
- Continual improvement and
- Provide the necessary instructions that will create and entrench the culture of quality and empower the projects' workforce.

Departmental objectives are defined in the Project Execution Plan (PEP) and will be monitored in the Business Review meeting, OMAC and ManCom meeting.

***Ref: 200-5919 – “Medupi Project Execution Plan”***

### **2.1.2 Applicability**

This document shall apply to Medupi Power Station Project only.

Team Medupi (TM) is made up of Eskom employees, Eskom 3<sup>rd</sup> Party resources and Parsons Brinkerhoff (PB) resources as implementation partners and the word TM will be used to define these partnerships. The PQP therefore, will be applicable to TM, the contractors and all stakeholders.

### **2.1.3 Effective date**

The document is effective from the authorisation date.

## **2.2 Normative/Informative References**

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

### **2.2.1 Normative**

- [1] ISO 9000:2015 - Quality Management System - Fundamentals and Vocabulary
- [2] ISO 9001:2015 - Quality Management System – Requirements
- [3] 32-727 SHEQ Policy
- [4] 200-5919 – Medupi Project Execution Plan
- [5] 32-1034 – Eskom Project Procurement Manual
- [6] 200-1689 – Medupi Quality Specification
- [7] 348-80423 – Document Management Work Instruction

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- [8] 348-80423 – Quality Management System Audits
- [9] 200-1684 – Corrective Action Request
- [10] 200-15327 – Control of Non-conforming Products
- [11] 348-860843– Storage & Preservation
- [12] 240-105658000 – Supplier Quality Management Specification
- [13] 240-53113685 – Engineering Design Review Process
- [14] 240-53114026 – Engineering Change Procedure

### 2.2.2 Informative

- [15] ISO 9004 - Managing for the sustained success of an organisation – A quality management approach
- [16] ISO 10005 - Quality Management System – Guidelines for Quality Plans
- [17] ISO 10006 - Quality Management System – Guidelines for Quality Management in Projects
- [18] SANS 347 - Categorization and conformity assessment criteria for all pressure equipment
- [19] SANS 31000 - Risk Management Principles and guidelines

## 2.3 Definitions

Table 1: Definition

Term	Definition
Assessments	A systematic process of collecting and analysing data to determine the current, historical or projected status of an organization or the act of judging or deciding the amount, value, quality, or importance of something.
Audits	A systematic, independent and documented process of obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.
Client	Generations
Construction	All operations required to build an item in accordance with design drawings and the construction specification.
Databook	A set of quality and engineering documentation generated for the installation or manufacturing that takes place within the boundaries of TM.
Commissioning Databooks Commonly known as H3)	The commissioning databooks compiled by the contractor for handover to Generations.
Onsite Databooks (commonly known as H2)	These are a compilation of construction and/or installation activities by the contractor which are compiled progressively as the work is carried out. The books are submitted to TM as proof of completion of the works.

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Fabrication	Those actions required to manufacture components, parts, and appurtenances. These actions may include forming, machining, assembling, welding, brazing, heat treating, examination, testing, inspection, and certification. Fabrication does not include design.
Inspection	Examination, measurement testing or gauging to verify whether an item or activity conforms to specified requirements. Inspections are performed at hold and witness points during manufacturing, construction, maintenance, testing and final acceptance to verify the conformance to code and / or specification and maintenance activities.
Installation	Those actions required to place and attach components to their supports and join items of a system by welding or mechanical means.
Intervention points	Intervention points are those control points indicated by the various controlling bodies concerned with the implementation of a specific QCP. These can be in the form of inspection, hold points, surveillances, witnessing, reviews, etc.
Manufacturing	Those actions required to manufacture source material, components, parts and appurtenances. These actions may include forming, machining, assembling, welding, brazing, heat treating, examination, testing, inspection and certification. Manufacturing does not include design and on-site construction.
Project context	The business environment, which is a combination of internal and external factors and conditions that, can have an effect on the project's approach to its products, services and investments and interested parties including the achievement of objectives..
Pre-fabrication	Those actions required to manufacture components, parts, and appurtenances. These actions may include forming, machining, assembling, examination, testing, inspection, and certification. Pre-fabrication does not include design. The material properties will not be impacted during the pre-weld preparation of material.
Shop and Field Drawings	Drawings provided by the sub-contractor that describe construction, fabrication, and installation details, physical dimensions, arrangements, and any significant engineering features needed to establish conformance to the Design Drawings, Construction Specification.
Offsite Activities	Any activities that occurs within the South African perimeter but outside TM site
Onsite Activities	Any activities that occurs within the boundaries of TM site
Offshore Activities	Any activities that occurs outside the South African perimeter.
1st Party Inspections	Self-inspections performed by the party responsible for doing or supervising work, i.e., supplier / contractor / sub-contractor Project Manage / Supervisor / Site Manager.
2nd Party Inspections	Independent inspections performed by Eskom (the owner/operator) as provided in the ITP and is not performed by the same person / agency who manages/supervises/directs the contractor or does the work to be inspected.

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3rd Party Inspections	Independent inspections performed by an approved inspection authority (AIA) to verify compliance to statutory and regulatory requirements, as provided in the approved ITP and is performed by the same person / agency that supervises/directs the contractor or does the work to be inspected.
-----------------------	--

### Abbreviations

Abbreviation	Description
AIA	Approved Inspection Authorities
AFI	Application for Final Inspection
CA	Corrective Action
DQM	Discipline Quality Manager
ECN	Engineering Change Note
EoMR	End of Manufacturing Report
GAC	Governance Assurance & Compliance
GRM2	General Machinery Regulations appointed person
IMTE	Inspection, Measuring and Testing Equipment
I&TN	Inspection & Test Notification
ISO	International Organization for Standardization
ITP / ITPL	Inspection and Test Plans
KPI	Key Performance Indicators
KPA	Key Performance Areas
OEM	Original Equipment Manufacturer
OHSAS	Occupational Health and safety
PEP	Project Execution Plan
PIM	Project Instruction Manual
PQM	Project Quality Manager
PQP	Project Quality Plan
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
QMS	Quality Management System
NC	Non-Conformity
RFI	Request for Inspection
SANAS	South African National Accreditation System
SHEQ	Safety, Health, Environment and Quality
TM	Team Medupi/Medupi Project Execution Team
URS	User Requirement Specification
WISPA	Web Integrated System of Processes and Applications

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Table 2: Abbreviations

## 2.4 Roles and Responsibilities

### a) Responsible

Those who are executing the work to achieve the task. There is at least one role with a participation type of responsible, although others can be delegated to assist in the work required.

### b) Accountable (also approver or final approving authority)

The one ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. In other words, an accountable must sign off (approve) work that responsible provides. There **must** be only one accountable specified for each task or deliverable.

### c) Consulted (sometimes counsel)

Those whose opinions are sought, typically subject matter experts; and with whom there is two-way communication.

### d) Informed

Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

Table 3: RACI Matrix

Process Step	General Manager	Assurance Mgr.	Risk Manager	HR Manager	Commissioning Manager	Project Quality Mgr.	Engineering Mgr.	Contracts Managers	Project Controls Manager	Snr Construction Mgrs.
Develop Project Execution Plan	A	R	C	C	C	C	C	C	C	C
Develop Project Organisation Chart	A	C	C	R	C	C	C	C	C	C
Develop Project Job Profiles	A	C	C	R	C	C	C	C	C	C
Develop project Job Descriptions	A	C	C	R	C	C	C	C	C	C
Develop and issue PQP	A	C	C	C	C	R	C	C	C	C
Develop and issue Quality Management Systems Documents	A	C	C	C	C	R	C	C	C	C
Develop and implement Training program	A	C	C	R	C	C	C	C	C	C
Develop and Issue Internal Audit Program	A	C	C	C	C	R	C	C	C	C

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Process Step	General Manager	Assurance Mgr.	Risk Manager	HR Manager	Commissioning Manager	Project Quality Mgr.	Engineering Mgr.	Contracts Managers	Project Controls Manager	Snr Construction Mgrs.
Approval of design deliverables	A	I	I	I	I	I	R	I	I	I
Development of integrated schedule	A	I	I	I	I	I	I	I	I	R
Verification of manufacturing and construction	A	I	I	I	I	R	R	R	I	R
Implement corrective action controls	A	R	R	R	R	R	R	R	R	R
Undertake management reviews	A	C	C	C	C	R	C	C	C	C
Quality / Process improvement	A	R	R	R	R	R	R	R	R	R

The responsibilities defined below only cover functions that closely interact with the quality department on overseeing the maintenance of the QMS; other functional responsibilities are defined in the relevant functional documents.

#### 2.4.1 General Manager

The General Manager takes accountability for the establishment, implementation and maintenance of the QMS.

#### 2.4.2 Project Quality Manager (PQM)

The PQM has the overall responsibility for the implementation of this PQP which includes:-

- Developing, implementing and maintain the QMS and the PQP
- Develop and implement QA/QC processes
- Reporting on the performance of the QMS, opportunities for improvement and the need for change or innovation
- Ensuring the promotion of customer focus throughout the project
- Interfacing internally with all project functions on quality related matters
- Interfacing externally with contractors and 3rd Party Inspection companies for on-and-off site quality Issues
- Interfacing with the regulatory and statutory bodies on statutory and regulatory matters
- Ensuring the adequacy of quality resources to support the project activities
- Establishing measurable departmental and product objectives
- Appointing quality champions in each department to assist with the development, implementation, coordination, improvement, promotion of requirements of the QMS

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- k) Monitoring and/or overseeing all quality activities detailed in this plan
- l) Driving opportunities for quality improvement through issue investigation and lessons learned
- m) Liaison with contractor quality representatives and facilitating periodic meetings with the contractors
- n) Provide the procurement quality function to the project
- o) Create and promote the quality culture to the project
- p) Plans and coordinates quality training
- q) Review data books
- r) NC process management
- s) Develops and coordinates the audit program and audit resources for the site

### **2.4.3 Assurance & Compliance Manager**

The Assurance and Compliance Middle Manager has the overall responsibility for ensuring that proper risk modelling is effective and proper management of the Project, Governance and Assurance processes are established, to provide objective evidence for the purpose of providing an independent assessment on governance and control processes within the project.

### **2.4.4 Senior Construction Manager**

The Senior Construction Manager is responsible for:-

- a) Supporting and enforcing the implementation of this PQP
- b) Monitoring the administration of contractors to ensure conformance to the contract, specifications and contract quality requirements
- c) Oversight of the required Inspection and Test Plan interventions and verification of work within their area of responsibility
- d) Ensuring and verifying that corrective actions are taken when required for non-conforming work
- e) Promoting and participating in the monitoring of the effectiveness of the TM QMS on a continual basis
- f) Ensuring that the construction team adheres to the QMS requirements

### **2.4.5 Quality Assurance Manager**

The Quality Assurance Manager is responsible for:-

- a) Implementing an ISO 9001 based QMS and the PQP
- b) Advising TM on QMS requirements
- c) Providing Procurement Quality processes to the Procurement department
- d) Coordinating quality training
- e) Conducting quality induction for both contractors and TM employees

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- f) Responsible for managing all external quality audit activities
- g) Driving all improvement programmes on site
- h) Analysing and reporting on quality activities
- i) Ensuring the effective implementation of quality practices for the project in their area of responsibility
- j) Monitoring the quality of workmanship performed by the project
- k) Participating in the review of the quality system
- l) Interfacing with DQMs, AIA and contractors to resolve site engineering quality issues
- m) Providing support to the PQM and SQCM/OQCM in processing and closing of NCs.

#### **2.4.6 Site and Off-Site Quality Control Manager (S/O QCM)**

The TM S/O QCM supports the PQM on all product realisation processes. The S/O QCM has the responsibility for quality control in the project:

- a) Has the authority and responsibility for developing, coordinating, maintaining, verifying and validating the product quality
- b) Has the authority to identify non-conforming items and stop work on those items, as necessary, pending resolution
- c) Facilitates the review and approval of contractor quality documentation, i.e. Inspection and Test Plans, databooks, welding documentation, method statements, etc.
- d) Coordinates and monitors all quality control activities which include process and product verifications and validations as defined in the CQP, ITPLs and other product related documentation
- e) Focuses on meeting product quality requirements to enhance customer satisfaction
- f) Communicates and promotes the QMS internally within the departments and the contractors
- g) Ensures that Eskom quality requirements, standards, policies and procedures are incorporated into the TM QMS
- h) Requests non-scheduled audits or assessments of contractors and suppliers based on project risks
- i) Provides technical expertise on quality related matters

#### **2.4.7 Discipline Quality Managers (DQM)**

The Discipline Quality Manager is responsible for:-

- a) Verification of the implementation of the QMS processes, for the disciplines, on-and-offsite
- b) Ensuring that the PQP is correctly implemented in the field to meet the requirements of the project for the discipline
- c) Ensuring documentation, reporting and closing of non-conformances

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- d) Reviewing of data books
  - e) Assuring that tests and inspections are performed in accordance with the QCPs / ITP's
  - f) Monitoring contractor quality control activities
  - g) Monitors materials management programs for handling, storage and preventive maintenance of goods and equipment
  - h) Assuring implementation of applicable codes, standards and quality requirements
  - i) Liaison with the AIA for statutory compliance issues
  - j) Attending and participating in site progress meetings
  - k) Ensuring adherence to the QMS requirements
  - l) Managing project quality related risks
  - m) Conducting pre-commissioning reviews (PCR's) of statutory equipment
- Verifying compliance to design and codes

#### **2.4.8 Quality Auditors**

The Quality Audit Advisor is responsible for the following:-

- a) Developing and managing both the TM and Contractor audit programme
- b) Implementing the audit programme
- c) Following up on audit findings
- d) Driving improvements based on audit findings

#### **2.4.9 Quality Control Inspector – Onsite, Offsite and Offshore**

The Quality Controllers are responsible for the following:-

- a) Attend kick-off meetings
- b) Perform 2<sup>nd</sup> party inspections as per the intervention points in the QCP/ITP
- c) Ensuring Implementation of QA/QC management system on site
- d) Monitoring the implementation of the approved quality control plans
- e) Verifying that the quality related activities are in accordance with the applicable codes and standards
- f) Ensuring all quality control documentation is compiled and completed during and after completion of the works
- g) Assuring all technical documents related to fabrication processes are current
- h) Controlling of all non-conformance reports and undertake remedial action
- i) Completing and coordinating the approval of the sites quality control technical submittals
- j) Ensuring risk assessment practices are adhered to

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- k) Monitoring the status of punch list and ensuring closure

#### **2.4.10 Document Control Manager**

The Document Management Manager is responsible for the following:-

- a) Ensuring the development of the document management procedures, processes and guidelines to support the project
- b) Ensuring the document management system is fully implemented across the Project structures
- c) Ensuring that a Master Record List exists for each functional area
- d) Managing the flow of documentation throughout its life cycle
- e) Developing templates for project documents to ensure consistency
- f) Ensuring that the revision due process is upheld
- g) Ensuring safe storage and maintenance of project documentation

#### **2.4.11 Construction Supervisors**

The Construction Superintendents/Supervisors are responsible for the following:-

- a) Ensuring compliance with relevant codes, specifications and procedures pertinent for their Contractors
- b) Have the authority to reject any nonconforming product / process under the direction and guidance of the TM Site Construction Manager and or SQM
- c) Providing a link between TM Quality and the contractor
- d) Enforcing supplier quality performance through supplier inspections and assessments
- e) Conduct first line inspections together with the contractor supervisor
- f) Monitor the non-conformance and corrective action processes in accordance with the established procedure
- g) Coordinating risk management programmes
- h) Surveillance monitoring of contractor in process activities (e.g. pre-and-post weld heat treatment)
- i) Ensuring and verifying authorized resolutions are taken when nonconforming work is identified
- j) Follow-up and expediting non-conformance report that have been raised
- k) Ensuring adherence to the TM QMS requirements

#### **2.4.12 Approved Inspection Authority (AIA)**

The AIA, as appointed by the Department of Labour and monitored for certification and compliance by SANAS, operates independently whether appointed by the client / contractor. The AIA is responsible for:

- a) Perform 3<sup>rd</sup> party statutory inspections as per the QCP/ITP

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- b) Upholding the legal compliance required by OSH Act No. 85 of 1993
- c) Enforce compliance to code requirements
- d) Performing inspections and witnessing the tests as established in the contractor QCPs / ITPLs
- e) Preparing records of inspections / tests and making these available to the PQM
- f) Endorsing supplier's quality documentation to confirm regulatory compliance and allow commissioning of pressure equipment
- g) Leading all tests and issuing of COCs for all compliant equipment as defined in the contract
- h) Conducting pre-commissioning reviews (PCR's) of all statutory equipment to verify compliance with design and codes
- i) Reviewing databooks as applicable to their scope

## **2.5 Related/Supporting Documents**

- **200-47329 "QMS Index & Forms Register**

## **3. Document Content**

### **3.1 Project Objectives**

The primary Medupi project objectives are:

- Achieve first synchronisation of all units no later than the P50 Business Case scheduled dates
- Keep cost within the current R135 Bn, P50 Business Case budget (ERA6)
- Meet the specified quality criteria for each Contract Package
- Ensure compliance with the specifications provided to each Contractor
- Meet the scope requirements of the DCO URS Rev 4
- Ensure compliance with specifications prepared by Engineering
- Ensure that the total risk profile of the project remains acceptable to Eskom in order to achieve the above objective

The QMS as addressed in the PQP is broken down into seven (7) Sections and alignment to the ISO 9001:2015 standard will be maintained. The requirements of the standard will be implemented without exclusions. These include:-

- a) Project context (Clause 4: Context of the organization);
- b) Leadership (Clause 5);
- c) Planning (Clause 6);
- d) Support (Clause 7);
- e) Operation (Clause 8);
- f) Performance evaluation (Clause 9); and

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g) Improvement (Clause 10).

## 3.2 Project Context

### 3.2.1 Understanding the Project and its context

TM Top Management has determined both the internal and external issues that are relevant to its purpose and its strategic direction and that will affect the ability to achieve the intended result(s) based on the environment that the project operates in. These factors provide the necessary information for the decision making in relation to project risks.

### 3.2.2 Internal and External Issues

Internal Issues	External Issues
<p>Board and Exco</p> <ul style="list-style-type: none"><li>• Progress on the New build</li><li>• Target on the budget</li><li>• Turnaround to the Target date to hand over the Power Station to Generation.</li></ul> <ul style="list-style-type: none"><li>• Contractual arrangements-</li><li>• People<ul style="list-style-type: none"><li>- High staff turnover leading to resource constraints</li><li>- Work stoppages</li><li>- Limited skills and capability</li></ul></li><li>• Systems<ul style="list-style-type: none"><li>-Unreliable key applications</li></ul></li><li>• Processes</li><li>• Site stability<ul style="list-style-type: none"><li>- Labour Unrest</li><li>-Staff demobilisation</li></ul></li></ul>	<ul style="list-style-type: none"><li>• Regulatory Issues<ul style="list-style-type: none"><li>- Environmental Licenses</li></ul></li><li>• Political Issues<ul style="list-style-type: none"><li>- Labour Unrest</li></ul></li><li>• Economic Environment</li><li>• Changes in Technology</li><li>• Resource availability<ul style="list-style-type: none"><li>- Local skilled labour</li></ul></li><li>• COVID-19 Pandemic Impact</li><li>• High Unemployment rate</li></ul>

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- Health and Safety; Covid-19 Impact
- Environmental

### 3.1.3 Interested Parties

Internal			
Interested parties	Requirements/Needs and Expectations	Communication	Responsible Person/s
Eskom Board and Exco	project delivery on time and within budget, whilst providing staff training and ensuring compliance (SHEQ)	<ul style="list-style-type: none"> <li>• Feedback and Medupi Progress Reports to the Board and Exco Meetings. Weekly and Monthly Project Progress Reports</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager</li> </ul>
Generation Division	Handover of a functioning plant that can be optimally operated and maintained	<ul style="list-style-type: none"> <li>• Client Feedback Meetings</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager/the Delegate</li> </ul>
Contractors	Feedback on performance in relation to contractual agreements, Payments in relation to the work completed	<ul style="list-style-type: none"> <li>• FIDIC Contractors Meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Employers Representative/ FIDIC Engineer</li> </ul>
Eskom employees, Eskom SHEQ Panel resources and Third Party resources	Feedback on the achievement of objectives, Job security. Training and Development, environment conducive for maximum performance	<ul style="list-style-type: none"> <li>• Mass Brief, Medupi Insider, Toolbox Talks, departmental meetings, etc.,</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager/HR department</li> </ul>
Organised Labour	Impact of the implementation of the Turnaround Plan on labour  Compliance with the Basic Conditions of Employment Act	<ul style="list-style-type: none"> <li>• Feedback to union Timeous Payment</li> </ul>	<ul style="list-style-type: none"> <li>• External and Internal Stability Department</li> </ul>
External			
Interested parties	Requirements/Needs and Expectations	Communication	
The three Lephalale Tribal authorities (Seleka, Shongoane and Langa)	<ul style="list-style-type: none"> <li>• Development of their community through the following: <ul style="list-style-type: none"> <li>○ Job opportunity for the community</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Traditional Councils meeting</li> </ul>	<ul style="list-style-type: none"> <li>• External and Internal Stability Department</li> </ul>

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	<ul style="list-style-type: none"> <li>○ Business Opportunity for the Community</li> <li>○ Skill Transfer to the community.</li> </ul> <p>Community Development</p>		
LIBSA and local business forum e.g. NAFCOC, Lephale Black Business Forum, Lephale Business Forum, Marapong Business Forum, Lephale City Chamber and Lephale African Business Forum	<ul style="list-style-type: none"> <li>• Ensure the Procurement opportunities for Local business from the Medupi Power Station Project.</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier Forum</li> <li>• Lephale Development Forum and Lephale Task Team</li> </ul>	<ul style="list-style-type: none"> <li>• External and Internal Stability Department</li> </ul>
Lephale Community	<ul style="list-style-type: none"> <li>• development t by providing training, job opportunities, skill Transfer and business to qualifying local entities</li> </ul>	<ul style="list-style-type: none"> <li>• Dissemination of jobs and business opportunity through satellite info centres at Lephale</li> <li>• Local radio platform Local print media</li> </ul>	<ul style="list-style-type: none"> <li>• External and Internal Stability Department</li> </ul>
3 - Spheres of Government in Limpopo e.g. Limpopo Provincial Government, Waterberg District Municipality and Lephale Local Municipality	Engagements with the governments to share project updates, socio economic development initiatives, CSI and solicit support	<ul style="list-style-type: none"> <li>• Regular &amp; Quarterly meeting through Stakeholder Engagement forums.</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager /External and Internal Stability Department</li> </ul>
Department of Public Enterprises (DPE)	Deliver the shareholder compact Significant Materiality Framework (SMF) PFMA	<ul style="list-style-type: none"> <li>• Shareholder Compact Report</li> <li>• Quarterly New Build Review Session</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager</li> </ul>
The Department of Finance (National Treasury)	Equity, Equity injections conditions, Financial performance; Meeting conditions of equity injection	<ul style="list-style-type: none"> <li>• Feedback Meeting</li> </ul>	<ul style="list-style-type: none"> <li>• Finance Department</li> </ul>
The Department of Energy	Continued supply of energy as required	<ul style="list-style-type: none"> <li>• Meeting to feedback on the Development of the New Build.</li> </ul>	<ul style="list-style-type: none"> <li>• Project General Manager</li> </ul>

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Department of Labour (DoL)	Monitoring compliance and Incident Management	<ul style="list-style-type: none"> <li>Licence and Permit compliance to OHS Act and COID</li> </ul>	<ul style="list-style-type: none"> <li>Environmental &amp; Safety Department</li> </ul>
Insures	Project progress Reporting	<ul style="list-style-type: none"> <li>Weekly construction progress report</li> </ul>	<ul style="list-style-type: none"> <li>Assurance department</li> </ul>

### 3.1.4 SWOT Analysis

<b>Strengths (Internal) – to leverage</b> <ol style="list-style-type: none"> <li>1. Project Management Skills</li> <li>2. Stability i.e. stable worksite</li> <li>3. Compliance to Legislation, Policies and Procedures</li> <li>4. Effective Financial Controls</li> <li>5. Sharing of Knowledge and collaboration with Kusile Project</li> <li>6. Commitment and dedication of Employees</li> <li>7. Support From The board and Government</li> </ol>	<b>Weaknesses (Internal) – to overcome</b> <ol style="list-style-type: none"> <li>1. Managing outputs</li> <li>2. Lack of disciplined execution</li> <li>3. Contract management</li> <li>4. Behavioural issues (in different culture and attitude)</li> <li>5. Over regulating and complexity of policies / procedures</li> <li>6. Resource constraints</li> </ol>
<b>Opportunities (External) – to take advantage of</b> <ol style="list-style-type: none"> <li>1. Productivity Improvement</li> <li>2. Image – Branding Medupi throughout different media of communication (tell the Story of Medupi)</li> <li>3. Security</li> <li>4. Collaborative relationships established with contractors enable growth and development of skills and knowledge within the feeder areas</li> <li>5. Grow knowledge base of contract management</li> <li>6. Leverage our relationship with key stakeholders such as organised labour and government to improve OHS culture and compliance</li> <li>7. Sharing lessons learned and best practises, internally and externally</li> </ol>	<b>Threats (External) – to treat/neutralise/mitigate/ accept</b> <ol style="list-style-type: none"> <li>1. Labour Strikes</li> <li>2. Security</li> <li>3. Legal non- compliance</li> <li>4. Funding</li> <li>5. Coal contracts</li> <li>6. Bad Publicity / Eskom Image</li> <li>7. Economic Climate</li> <li>8. Managing COVID pandemic</li> </ol>

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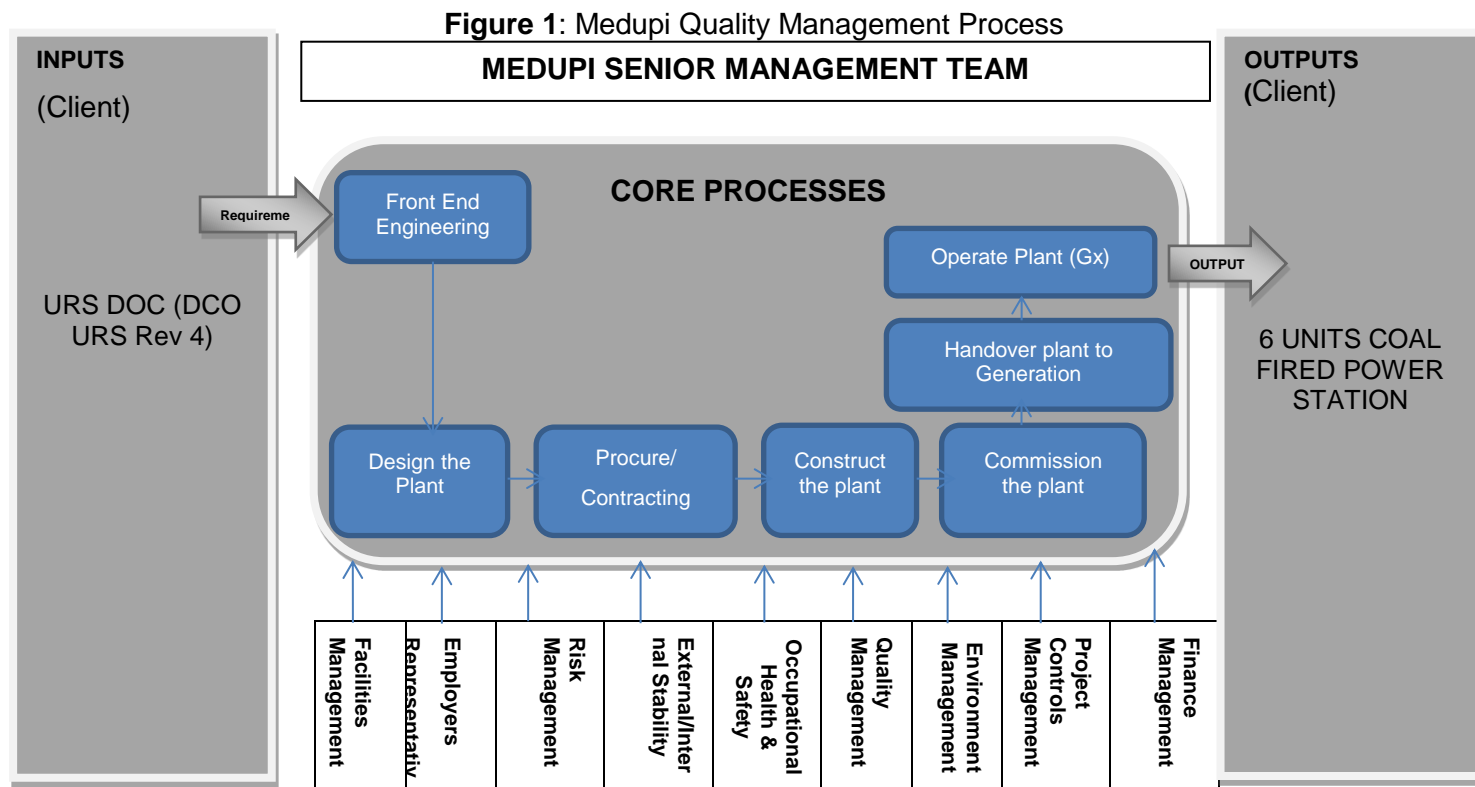
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### 3.2. Scope of the QMS

The scope of the QMS is the Engineering, Procurement, and Project Management of the Medupi Coal Fired Power Station Project which is situated at Steenbokpan Road Lephalale in Limpopo.

#### 3.3.1 Quality Management System and its processes

The Medupi value chain is expressed pictorially via the process diagram below:



Processes are documented via QMS Work Instructions, Plans and guidelines.

- Project QMS Documents are listed in TM's "QMS Index & Forms Register"

**Ref: 200-47329 "QMS Index & Forms Register"**

Additional work instructions shall be developed as and when required by Process Owners.

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### **3.4 Leadership**

#### **3.4.1 Leadership and Commitment**

The General Manager and the Project Quality Manager, with appropriate members of the Management Team will review the Project Quality Plan to ensure its continuing suitability, adequacy and effectiveness. The review will be on-going during the execution of the project and will consider the effect of changes within the project and any specific customer requirements.

The Project Execution Plan identifies this PQP as a project requirement; any changes to the Project Execution plan having an influence on quality shall be considered and if necessary, addressed by revision of the PQP.

TM is led by the General Manager who is supported by an N-1 Organogram which includes a senior management team (N-1) inclusive of:

- a) Senior Construction Managers
- b) Employer's Representative
- c) Delivery Middle Manager
- d) Financial, Risk, and Related Services Manager
- e) External & Internal Stability Manager
- f) Occupational Health & Safety Manager
- g) Project Quality Manager
- h) Human Resource Manager
- i) Project Engineering Manager
- j) Finance Manager
- k) Facility's Manager

The General Manager reports to the Group Executive (Group Capital) in Eskom and is accountable for the effectiveness of the Quality Management System. It is the responsibility of the General Manager and the supporting management team to ensure that the Client's requirements are fully identified and achieved, with the aim of exceeding the requirements to enhance customer satisfaction.

TM Project Quality Manager (PQM) is responsible for the management, monitoring, evaluation and co-ordination of the Quality Management System. The PQM reports to the General Manager and has unhindered access to all members of the Management Team. The PQM shall manage, monitor, evaluate and coordinate the quality management system with the aim of enhancing and improving the system and the project operation.

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The General Manager ensures the development and maintenance and accessibility of an Organisation Chart for the Project.

Job descriptions shall be documented in order to define expected roles, job functions and/or lines of authority.

**Ref: 200-1678 “Statement of Management Commitment”**

### 3.4.2 Customer Focus

To consistently and continuously meet current and future customer requirements, TM Senior Management determines customer requirements and expectations, address risks and opportunities that can affect product and service conformance, regulatory or statutory requirements, and improving customer satisfaction. TM's key customer is the end user, that is, Generation. TM management meets with the end user on a continuous basis to deal with the following matters:-

- 3.4.2.1 Statutory and regulatory requirements
- 3.4.2.2 Risks and opportunities that can affect product or service conformity
- 3.4.2.3 Any issue that the end user feels can affect the operation of the plant
- 3.4.2.4 Management of deficiencies (pre-and-post-delivery)
- 3.4.2.5 Handover / takeover requirements
- 3.4.2.6 Plant performance post delivery

### 3.4.3 Quality Policy

The Eskom SHEQ Policy (32-727) articulating Senior Management's commitment to quality has been developed and implemented throughout Eskom. The Policy is communicated through different forums within the project. The policy integrates all aspects of importance to assist in the implementation, maintenance, continual improvement of performance and the achievement of stakeholder requirements. The SHEQ policy states that: (Please insert the latest issue of the quality policy or you can completely remove it, its not necessary to on the PQP)

#### Organizational Roles and Responsibilities

Senior Management has assigned responsibilities and authorities for all relevant functions in the project. The project structure has been developed and authorized by the General Manager. The Project Quality Manager has been appointed with full responsibility and authority for all matters pertaining to the QMS, including:-

- a) Conformance to this PQP
- b) Reporting performance of the QMS and opportunities for improvement

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- c) Ensuring promotion of customer focus throughout the project

***Ref: 200-1678 – Statement of Management Commitment to Quality***

### **3.5 Planning**

#### **3.5.1 Project Risks and Opportunities**

The effective management of risks is central to the efficient management of any organisation and/or project. The Project Risk Management Plan determines how the Project Risk Management Policy and the Risk Management Framework and Principles will be implemented across the project in order to successfully manage risks during project execution.

Project risks extend to the inherent risks that are posed by functional support processes and systems and the risk management process is therefore extended to include functional work areas.

Identified risks are being managed in accordance with the principles outlined in the Project Risk Management Plan. This includes regular risk reviews with respective teams and the escalation of key risks and opportunities to the monthly Business Review Meeting for review and approval of any residual risks.

The Functional Head is responsible for all risks identified in his Function's Risk Register and must implement the relevant risk management processes within his/her Function. The following is a list of the Functional Heads responsibilities:

- Ensure that the risk management processes are fully embedded within their own area of accountability, if necessary, via clearly delegated accountability;
- Ensure regular internal workshops for risk reviews and updates are carried out to review risk Control, effectiveness and identification of additional risk treatment requirements;
- Attend Functional Risk Review Workshops called by the Site Risk Manager;
- Provide written assurance on the management of risks, control effectiveness and additional risk treatment actions within their own area of accountability, as and when required;
- Review and approve the risk data captured and held in the risk register, to ensure that it is robust and current and is appropriate for risk simulation;
- Assign appropriate individuals responsible for the implementation of risk responses in his/her Function, as and when required; and
- Accept ownership of risks and opportunities allocated to him/her.

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Risk owners are generally the managers with responsibility for the relevant area: they may be package managers, unit managers or functional heads. They ultimately own all relevant risks held in the risk register and, as such, are accountable for overall management and impact mitigation of these risks on the Medupi Project.

***Ref: 348-614061 – “Risk Management Plan”***

### **3.5.2 Project and Quality Objectives**

Project objectives have been established and are communicated to all TM members. The project objectives form the framework for establishing departmental objectives and targets which become the basis of measurements and monitoring at those levels. Performance against these targets is reviewed regularly in the Business Review meeting. Each functional area maintains and monitors its objectives & targets in a form of documented information.

***Ref: 200-5919 – Project Execution Plan***

### **3.5.3 Planning of Changes to the QMS**

Changes to the QMS and other key project management processes will be carried out in a controlled manner and key factors affecting the changes will be defined, these include:-

- 3.5.3.1 The purpose for the change and their potential impacts;
- 3.5.3.2 The integrity of the processes, procedures and systems;
- 3.5.3.3 Resources required to effect the change;
- 3.5.3.4 Roles, responsibilities and authorities necessitated by the change.

***Ref: 348-25418 – “Development & Changes of Project QMS Documents”***

## **3.6 Support**

### **3.6.1 Resources**

In order to achieve project quality management system objectives, Senior Management has determined resource requirements which include, capabilities, human and infrastructure and other requirements to be obtained from internal and external service providers. Additional resource requirements are determined, analysed and assigned in different functions as necessary. The Quality Department's is well resourced to support the project on any quality related matters.

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### 3.6.1.1 People

The project structure has been developed and implemented and roles and responsibilities have been defined. Senior Management ensures that only competent personnel are assigned to perform work that affects conformity to product and service quality. Personnel competency is appraised through the HR processes.

### 3.6.1.2 Infrastructure

TM top management has identified, provided and maintained the infrastructure needed to achieve successful execution of the project. TM has also given consideration to environmental issues associated with the infrastructure such as conservation, pollution, waste and recycling will be covered within the environmental management system.

Infrastructure includes:

- a) Buildings and associated utilities;
- b) Equipment, including hardware and software;
- c) Transportation resources; and
- d) Information and communication technology.

### 3.6.1.3 Environment for the operation of processes

Senior Management has determined, provided and continuously maintains a conducive work environment that promotes the values ZIISCE and THE WAY and the Medupi Way work ethics.

The acronym ZIISCE stands for:

a) **ZERO HARM**

We support a safe and healthy work environment for our employees, customers, suppliers, our country and its people.

b) **INTEGRITY**

We constantly act in a respectful, professional manner that promotes trust, loyalty, transparency, discipline and a commitment to honesty and fairness at all times.

c) **INNOVATION**

We foster an environment that nurtures innovative people who are committed to continuous Improvement through creative, ethical solutions.

d) **SINOBUNTU**

We show that we care by leading by example and providing each other with direction.

e) **CUSTOMER SATISFACTION**

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We are passionate and committed to service delivery of the highest standards that exceeds our internal and external customers' expectations.

f) **EXCELLENCE**

We continuously strive to be the best through exceptional performance, through employee satisfaction and through effective supplier relationships.

Eskom has also developed a Code of Ethics, which is a tool which assists employees in living the Eskom Values in an ethical manner. THE WAY is based on the Eskom Values and the ethical standards in the Eskom Code of Ethics.

**THE WAY:**

- Reflects our organisation's commitment to ethical conduct
- Describes how we should treat each other
- Describes how we should live the Eskom values
- Defines the road that will take us into the future
- Assists to build a proud legacy
- Must be assimilated together with the Supplementary Code Procedure.
- Requires mandatory adherence

The MEDUPI WAY has been developed in line with "THE WAY" code of ethics.

**3.6.1.4 Monitoring and Measurement Resources**

Where monitoring and measuring equipment are kept, controls will be implemented to provide the status of the monitoring and measuring resources. These monitoring and measuring resources are calibrated at intervals stipulated by the supplier. The monitoring and measuring resources are kept safe and safe-guarded from damages, adjustments and deterioration that would render the monitoring and measuring resources results invalid. TM ensures that contractors' monitoring and measuring resources are maintained and the records are kept. Verification of calibration of measuring equipment is done during Supplier Audits by TM.

Equipment for inspection, measuring and testing for final acceptance must be in a known 'state of calibration' and registered by the appropriate owner (department, company, etc.)

The owner shall ensure that:-

- a) Each calibrated instrument is identified with a unique identification code that is traceable to respective calibration documentation
- b) The instrument shall have appropriate measurement ranges consistent with its intended use(s)

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- c) Calibration is verified according to defined procedure requirements to maintain instrument precision inside established limits
- d) Final acceptance tests and inspections are performed using only calibrated instruments.
- e) Handling and preservation of instruments is designed to maintain their precision and characteristic of use
- f) Verification or calibration is performed by means of approved procedures and in accordance with specified tolerances and by approved service providers. All calibrations shall be traceable to a recognized national or international standard
- g) Calibration documentation shall be maintained until the closing of the site

***Ref: 348-106670 "Site Quality Assurance, Control and Verification"***

***Ref: 348-80423 "Quality Management System Auditing"***

### **3.6.1.5 Knowledge Management**

Senior Management has determined the project knowledge necessary for the operation of project processes to achieve conformity of products and services. The knowledge is identified and acquired from various sources. This include:-

- a) Internal sources: (lesson learnt portal, policies, procedures, processes, plans, works instructions, guidelines, tool box talks, knowledge management awareness, external feedback from subject matter experts, or intellectual property) is obtained.
- b) External sources (standards, academia, conferences, or information gathered from contractors or customers, training, peer reviews, lessons learnt, benchmarking (comparative and business analysis), knowledge exchange and sharing, coaching and mentorship), etc.

The project continuously applies the knowledge to improve on its operations; services rendered and deliver the project.

***Ref: 240-115875516 "Lessons Learned Implementation on Capital Projects"***

### **3.6.2 Competence**

Senior Management has determined the relevant competencies and skills required to implement the TM project successfully. Deployment of personnel to various work activities is based on their skills and competencies and where necessary, training is provided to equip personnel with the skills to perform optimally. TM has different programmes for competence appraisal and these include:-

- a) Awareness programmes
- b) Formal and informal training

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- c) Coaching and mentorship programmes
- d) Job rotation

Specific personnel training needs are evaluated by their direct supervisors periodically. This evaluation takes into consideration work activities to be performed by the individuals, and the level of competency that is required.

The project maintains records of training and skills development in the employee file as necessary. HR processes have been established to ensure that competence requirements are met.

### 3.6.3 Awareness

Senior Management ensures that all personnel in the project are aware of critical information including the SHEQ Policy and objectives and how they can contribute to the effectiveness of the QMS and the implications of not conforming to the requirements.

SHEQ Inductions are performed to all TM resources as an awareness intervention for them to understand the quality policy, relevant quality objectives, their contribution to the effectiveness of the quality management system, including the benefits of improved performance and the implications of not conforming with the quality management system requirements.

### 3.6.4 Communication

TM shall ensure that appropriate and effective communication channels are established within the Project. This will include effective communication of the quality policy, requirements, objectives and achievements and the effectiveness of the quality management system.

Activities for communicating shall include training sessions, and may include management led communication in work areas such as toolbox talks, mass team briefings, notice boards, electronic media such as Email, websites, publications, etc.

***Ref: 200-44980 "Medupi Information Centre Management"***

***Ref: 200-44979 "Stakeholder Management"***

***Ref: 200-44969 "Publications"***

***Ref 200-44972 "Handling Media Related Matters"***

### 3.6.5 Documented Information

#### 3.6.5.1 General

Registration and control of documents and data on the Project will be achieved using EDMS such as Hyperwave, SmartPlant Owner Operator (SPO), SharePoint and WISPA.

TM has defined requirements for the identification, storage, security, preservation, retrieval, period of retention disposition of Project Documents through the control of documents and records procedure.

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TM is also being responsible for taking photographic records of the progress of the construction works, where applicable. TM has defined minimum documentation required for handover to Generation on 348-944021 "Documentation Handover List.

The TM QMS takes into account all documented Information required by ISO 9001:2015, and as determined by the Senior Management to be necessary for the effectiveness of the QMS. The extent of the QMS documentation is based on the following:

- a) Relevance to the project
- b) Complexity and interaction of its processes
- c) Risks and opportunities
- d) Competence of personnel

### **3.6.5.2 Creating and Updating**

TM has developed site specific procedures and processes for control of documents. These are implemented and maintained by the Project Documentation Management Team.

When creating and updating documented information, TM ensures:

- a) Review and approval of documents for adequacy prior to initial release
- b) Periodic review, update, and re-approval of existing documents as required
- c) Clear document identification, format, revision indication, and current revision status

### **3.6.5.3 Control of Documented Information**

All documents comprising the QMS, including those of external origin, are controlled. Control measures include:

- a) Availability of current and relevant documents at all locations where quality-related activities are performed
- b) Protected from loss of confidentiality, improper use, or loss of integrity
- c) Obsolete documents are removed from points of use and protected from unintentional use. Obsolete documents will be identified and retained for legal or knowledge preservation purposes
- d) A master index of controlled documents is maintained, indicating the revision level of each document

Quality Records are maintained to demonstrate conformance to specified requirements and shall include:

- e) Controlled distribution, access, retrieval, and use
- f) Periodic audits to confirm documents presence, revision status, and legibility
- g) Storage and preservation, including preservation of legibility

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- h) Control of changes
- i) Retention and disposal

Moreover, TM has developed procedures which detail how databooks are generated and controlled.

***Ref: 348-883808 “Document & Record Management”***

***Ref: 348-25418 “Development and Change of TM QMS documents”***

***Ref: 348-944021 “Medupi Power Station Handover Work Instruction”***

### **3.7 OPERATION**

#### **3.7.1 Operation planning and control**

TM planned on how to ensure that the customer’s requirements will be met. The resulting plans are consistent with the QMS and the organization’s operating methods.

A project programme shall be prepared by TM in line with the time scales set by the Client (Generation – Medupi URS Rev 4). The Project Schedulers and Planning Engineers will provide the programme using Primavera software. The programme will be maintained by the Planning section from information collated and passed back through the Package Supervisors. The programme will contain key milestones to be achieved by the Contractor during the course of the project.

Progress made towards the completion of each activity (design, engineering, manufacture, delivery and construction) shall be regularly reviewed by the Planning Engineers and compared against the agreed programme. This process will highlight delays as soon as they occur, thus identifying areas of the project where additional resources are required. The Planning Engineers shall maintain records of this review. An integrated version of the overall programme shall be prepared by the Planning Engineer and included with each monthly report

***Ref: 200-156890 “Medupi Integrated Master Schedule – Progress Updating Work Instruction”***

#### **3.7.2 Requirements for Products and Services**

##### **3.7.2.1 Customer Communication**

The primary route for day-to-day project communication with the Client shall be through Eskom Programme Manager – New Coal Generation. In addition, a project advisory committee will provide a route for formal communications with the customer. All formal communication shall be recorded within the project’s document management system.

TM management meets with the customer on regular basis to deal with the following matters:-

- a) Product and service requirements
- b) Risks and opportunities that can affect product or service conformity

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- c) Any issue that the end user feels can affect the operation of the plant
- d) Management of deficiencies (pre-and-post-delivery)
- e) Handover / takeover requirements
- f) Plant performance pre-and-post delivery
- g) Training of the key skills required to operate and maintain the plant
- h) Plant maintenance requirements
- i) Customer feedback

### 3.7.2.2 Determine Requirements for Products and Services

Construction Managers and the Employers Commercial Representatives/ Contract Managers (FIDIC Engineer) will form part of TM reporting to the General Manager. The General Manager will be responsible for the overall administration of the site. The Contractors Site Managers and site personnel will work to the requirements and rules laid down by the Project Medupi General Manager through the Construction Managers and Employers Commercial Representative who oversees the Contract Managers and FIDIC Engineer.

The Construction Managers and Construction Supervisors will be responsible for the site activities involved during the erection phase. Construction Supervisor will be allocated to a specific Unit and will interface with the respective Contractors to erect the plant to the required quality levels. The Construction Supervisors will interface with the relevant Package Contract Managers to achieve the necessary degree of coordination and integration between the packages.

Each Contractor involved with site erection, installation and commissioning will produce the necessary work package documentation (drawings, procedures, work instructions, etc.) to achieve installation in accordance with the specified design, standards and specifications. It is the responsibility of the relevant contract package team to ensure all the necessary documents are in place and have been reviewed by relevant disciplines.

As part of the work package documentation, each Contractor will produce the documents identified in the Specification, 200-1689 (Formerly 1253-PRO-010) 'Contractor Quality Requirements for Engineering and Construction Works'. Project Medupi shall review the Contractor's quality assurance arrangements prior to commencement at site and shall monitor by inspection and audit that these procedures are being correctly applied during the execution of the work at site.

Materials, plant and equipment shall be checked on receipt at site by the Contractor who, in the event of deficient material being delivered, shall issue damage reports as appropriate. The materials, plant and equipment and inspection results and reports shall be reviewed by the Site Team for acceptance.

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### 3.7.2.3 Review of the Requirements for the Product or Services

The TM shall monitor actual construction progress and advise any courses of action required to expedite the works in accordance with the programme milestones.

The Commissioning / Delivery Manager ensures that the Contractors Works are fully tested on site and subsequently set to work in accordance with the Contract including ensuring that the Works are:

- a) completed in accordance with agreed procedures and contract requirements
- b) witnessed where required by quality control plans
- c) satisfactory in their results
- d) correctly recorded and certified
- e) Correctly documented in terms of handover for operational use.

The TM shall supervise the pre-commissioning and certification of all plant which shall include the supervision of all pre-operation and running tests, performance and reliability tests.

The Commissioning Delivery Manager shall be responsible for the ensuring the correct issue of handing over and taking over certification in accordance with the Contract.

***Ref: 200-163680 "Unit Construction Work Instruction"***

### 3.7.2.4 Changes to Requirements for Products and Services

TM shall ensure that relevant documented information is amended and that relevant personnel are made aware of the changes in requirements when the requirements for products and services are changed.

## 3.7.3 Design and Development of Products and Services

### 3.7.3.1 General

The User Requirement Specifications (URS) for the Project is produced by Eskom Generation Engineering.

Group Technology Project Engineering, (GTPE) will develop designs the specifications (some of this work will be sourced via the Engineering A/B/C Panel contracts) that express the requirements of the URS. GTPE shall consider the options and make decisions on how the requirements of the URS will be met. GTPE shall demonstrate record and review how the selected designs and specifications meet the URS.

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### 3.7.3.2 Design and Development Planning

Each Contractor will produce detail designs, drawings, procedures and work instruction documents to meet the requirements of the agreed GTPE contract specifications. It is the responsibility of GTPE to review at the appropriate levels; the Contractors engineering documentation to ensure the proposed solutions are in compliance with the requirements of the agreed GTPE contract specifications and will meet the approved Customer URS.

The Functional/Business Units shall be responsible for ensuring the process of review and distribution of designs and supporting documentation is managed to ensure compliance with the Contract, such that the accountability of the Project Team is not jeopardised.

### 3.7.3.3 Design and Development Inputs

TM determines the requirements essential to products and services to be designed and developed, and shall consider

- a) Functional and performance requirements
- b) Information derived from previous similar design and development activities
- c) Statutory or regulatory requirements
- d) Standards or codes of practice that the project has committed to implement
- e) Potential consequences of failure due to the nature of the products and services

Inputs shall be complete and unambiguous. TM shall retain documented information on inputs.

### 3.7.3.4 Design and Development Controls

Integration of engineering between the individual packages will be provided through the services of the Engineering Integration Manager. GTPE shall ensure that effective processes are employed to identify, document and manage engineering interfaces. Eskom Design Review Procedure NMP 45-4 shall form the basis of the GTPE design review process.

### 3.7.3.5 Design and Development Outputs

As part of the process, GTPE will challenge and agree changes to the URS with Generation Engineering as necessary. The outputs in terms of the 'basis of the designs', the integrity of the designs and specifications shall be formally reviewed and approved within GTPE.

### 3.7.3.6 Design and Development Changes

Changes in Engineering Design shall be controlled through GTPE Procedure NMP45-5.

The Project Engineering Manager and the Package Contract Managers shall monitor and participate in the process of changes in Design and Scope, in line with procedure NMP45-5.

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All Scope changes and Variations to Contracts shall be subject to General Manager and the Employer Commercial representative review. Change control shall be effected in accordance with Project Medupi Change Control Work Instruction (200-1829)

The Functional/Business Units shall be responsible for ensuring that the process of review and distribution of change information is suitably managed in order to ensure the accountability of the Project Management Team is not compromised.

***Ref: 200-5664 “Medupi Request for Information, Technical Site Instruction, Engineering Response, Field Change Notice and Engineering Change Notice”***

### **3.7.4 Control of Externally Provided Processes, Products and Services**

#### **3.7.4.1 General**

Purchasing of Equipment, Construction, Erection Services and Inspection, Test and Commissioning of installed equipment and services will be effected through Eskom's established process (32-1034) 'Eskom Procurement and Supply Chain Management Procedure'.

Order (or Contract) placement and payment to the Contractors will similarly be through Eskom's established processes. Accountability and management of the process of project procurement and project commercial management remains the responsibility of the Financial, Risk and Related Service Manager through the Project Controls Middle Manager.

#### **3.7.4.2 Type and extent of control**

A Procurement and Contracting Strategy is developed in advance of the tendering process for each package. This is a key stage in the process as its purpose is to identify and mitigate risks, align the procurement process with sound commercial processes, commit to technical excellence and secure agreement and commitment from stakeholders including Commercial, Legal, GTPE, Treasury, Finance and Project Medupi.

The project Sourcing Manager is responsible for timely development of the strategy document with input from others as necessary and shall use the Purchase Strategy Template held within the Electronic Document Management System.

The strategy shall be authorised prior to starting the supplier pre-selection process and no changes shall be made to the agreed GTPE strategy. The Procurement and Contracting Strategy shall be reviewed prior to going out to tender and any proposed changes shall be submitted for further authorisation.

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### 3.7.4.3 Information for external providers

The Project Sourcing managers in Group Commercial shall, with appropriate members of their teams and input from Eskom GTPE, compile the Enquiry packages. The Package Contract Managers shall manage the evaluation of tenders, including a review of the supporting documentation packages. The QA Dept. shall assist the Functional/Business Managers in reviewing the proposed quality requirements.

Specification “Contractor Quality Requirements for Engineering and Construction Works’, 200-1689 (for FIDIC Conditions of Contract only)), details documents to be submitted by the Suppliers, both at the Tender and post-contract stages. TM under the direction of the Functional/Business Managers shall review the documents submitted with the tender as part of the Tender review process.

Eskom Enterprise Quality Department shall ensure, before any contract is placed, that the prospective Suppliers Quality Management System is robust and fully ISO 9001 compliant, either through previous experience of the Contractor, or through additional quality review, which could include a full ISO 9001 compliance audit.

The Supplier Quality Plan shall be reviewed for adequacy and any comments or discrepancies shall be notified to the Supplier.

The Inspection and Test Plans (ITPs) shall be reviewed and non-statutory intervention points added as deemed necessary for TM to ensure manufacture, erection and test are completed to the satisfaction of the Project team.

Where statutory regulatory interventions are required e.g. under the Pressure Equipment Regulations, a South African Government approved inspection authority (AIA) shall be appointed by the Contractor for compliance with the requirements of the regulations and the applicable design and manufacturing code(s). Selection of the AIA shall require the approval of the Medupi General Manager with advice from appropriate Client specialists.

**Ref: 200-1689 “Medupi Quality Specification”**

**Ref: QM58 (240-105658000) – “Supplier Quality Management Specification”**

**Ref: FIDIC – Red/Yellow Book**

### 3.7.5 Production and Service Provision

#### 3.7.5.1 Control of Production and Service Provision

Document 200-47329 “QMS Index & Forms Register” identifies Plans, Policies and procedure s, etc. along with Quality Records, form the basis of TM QMS which is used to ensure successful quality management of the project.

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For the manufacturing and construction phases, Supplier Inspection and Test Plans (ITPs) will be used to identify the process stages, appropriate inspections, interventions and the parties who will carry out these interventions.

Where statutory regulations are in place, e.g. Pressure Equipment Regulation covering the boiler, turbine, pipework and ancillary pressure parts, the inspections and interventions required by these regulations shall be carried out under the responsibility of the Contractor. Selection of the AIA shall require the approval of the Medupi General Manager with advice from appropriate Client specialists. Off-site inspection activities, whether onshore or offshore shall be conducted on behalf of TM by Eskom Group Capital Department contracted SHEQ Panels.

I&TN shall be issued by to Group Capital (GC) Quality Department's to procure the service of the AIA.

Competency assessment of SHEQ Panel resources shall be the responsibility of GC Quality Dept. SHEQ Panel resources shall document inspection and test activities via Inspections and Test Report (I&TR) and any non-conformity via Notice of Defect (NOD) Report.

I&TRs and NODs shall be issued via email direct to TM Package Delivery Team proxy email addresses

***Ref : 200-47329 "QMS Index & Forms Register"***

***Ref: 348-860842 "Manufacturing Inspection & Testing"***

#### **3.7.5.2 Identification and Traceability**

The Project shall adopt the KKS coding system, as developed by VGB, for plant structures, systems and components. All designs, testing, commissioning, operation maintenance and training documentation and databases shall be suitably and comprehensively marked, cross referenced and indexed with the allocated KKS codes.

***Ref: 200-1689 "Contractor Quality Requirements for Engineering and Construction Works".***

#### **3.7.5.3 Property Belonging to Customers or External Providers**

Customer materials, tooling, test equipment, etc. will be supplied or present on Project Medupi.

Where such materials or equipment are provided, it is the responsibility of the Project Team to ensure that the products meet specified requirements or properties. Where these are not met, it is the responsibility of the appropriate package or function manager to advise the Customer of the non-conformance or where loss or damage occurs, to advise the Customer of same and to agree on the appropriate action.

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#### 3.7.5.4 Preservation

Preservation of product is the responsibility of Suppliers.

TM shall ensure that Suppliers develop and implement preservation procedures consistent with the requirements of the project specifications and manufactures requirements.

TM Package Delivery Teams and QA Dept. shall monitor and verify preservation implementation via I&TR and Audit Report.

***Ref: 348-860843 "Storage and Preservation"***

#### 3.7.5.5 Post-Delivery Activities

On completion of the construction, installation and commissioning phases of the project the Engineering Manager shall confirm that all conditions defined in the contract for handover of the station and equipment have been met.

***Ref: 200-16714 "Commissioning and Completion of Medupi Power Station Project"***

#### Control of Changes

The hand-over certificate and documentation package such as signed-off quality control plans, plant check sheets, erection check sheets, pre-commissioning check sheets, commissioning check sheets, commissioning and optimisation test results, etc. be kept for a period of at least ten (10) years by the Client. These documents should be used as inputs for the development of SAP PM (or similar plant maintenance system) task list masters for the purposes of routine plant maintenance and outage management.

Engineering related information such as technical specifications, designs, P&IDs and drawings, databooks, Operating and maintenance manuals, etc. shall be kept for the life of the power station.

#### 3.7.5.6 Release of Products and Services

TM will hand-over the plant to Generation once all documents have been submitted, reviewed, tests completed, and training done.

When a unit and all of its associated plant is optimised, capabilities demonstrated, the 72-hour run completed and grid code compliant, the General Manager shall arrange for the hand-over of the plant to the Client. Such approvals affect the transfer of the asset and the control of the plant from the Contractors, Unit Manager to the Client (e.g. Power Station Manager), and this includes transfer of statutory accountability.

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All hand-over documentation for packages to be handed-over will be kept in the project documentation management system and Document Management centre until the plant is hand-over to the Client. The relevant hand-over documentation package will be transferred to the Client's documentation centre. It should be noted that the Contract manager is ultimately responsible to ensure that these documents are kept up to date at all times.

### 3.7.6 Control of Nonconforming Outputs

Identified nonconforming outputs shall be documented via Notice of Defect Report and dispositioned. The processing of NOD's shall be effected via WISPA and Manually in case WISPA is not available as stated on the Control of the Non-conforming Outputs (200-15327).

Nonconforming product dispositioned as "replace / rework shall be approved by Contract Managers whereas nonconforming product dispositioned as "repair / accept as is" shall be approved by Engineering and where required, Designer and/or AIA.

QA Dept. shall verify completion of remedial measures effected to eliminate nonconformity.

***Ref: 200-15327 "Control of Non-Conforming Products"***

## 3.8 PERFORMANCE EVALUATION

### 3.8.1.1 General

TM Package Delivery Teams shall monitor the quality of the Supplier processes and products to assure build quality conformity.

QA Dept. and Engineering Dept. shall undertake formal stage / final inspections and tests, facilitated by the inclusion of TM intervention points in the Supplier's Inspection and Test plans (ITPs) at time of ITP review and approval. Further, the same shall undertake patrol and targeted inspections as defined by Supplier performance.

***Ref: 348-106670 "Site Quality Assurance, Control and Verification"***

***Ref: 348-860842 "Manufacturing Inspection & Testing Procedure"***

***Ref: 348-706004 "Level II Target Inspection"***

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### **3.8.1.2 Customer Satisfaction**

In order to determine customer satisfaction levels, TM Senior Management monitors information regarding customer perception of the project's ability to satisfy requirements. Solicitation programs include management meetings, interface meetings, plant walk downs, etc. The customer form part of these interventions. Service non-conformances and customer feedback are also monitored during engagements with the customer, these include:

- a) Customer complaints
- b) Plant performance
- c) Product failures
- d) Programme management
- e) Handover documentation

### **3.8.1.3 Analysis and Evaluation**

TM QA Dept., shall determine, collect and analyse data to demonstrate the suitability of the QMS and to evaluate where improvements can be made. The results of the analysis can be used to determine trends, customer satisfaction, conformity to product and process, Contractor performance etc. Each Functional Manager, will also analyse and trend their achievement of departmental objectives/targets and report these at Weekly Business review meeting.

### **3.8.1.4 Internal Audit**

The Quality Dept. shall develop and maintain a programme of audits which will cover the activities of both TM and Suppliers. The frequency and scope of the audits will be planned in accordance with the status and importance of the area to be audited. The programme shall be considered a live document to allow for revision where additional areas for audit are identified as the Project progresses.

A documented procedure is operational defining the responsibilities and requirements for planning and conducting audits as well as for reporting results and maintaining records.

Auditors are not permitted to audit their own work and as such arrangements will be made by the Quality Manager and the General Manager to ensure an audit of the Project Medupi Quality Management System takes place, at least every twelve months, by an auditor independent of the Project Medupi Quality team.

The results of the audits will form an essential part of the management review process.

***Ref: 200-1697 "Medupi Audit Program"***

***Ref: 348-80423 "Quality Management System Auditing"***

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### 3.8.1.5 Management Reviews

TM will conduct management reviews once every six months to continually check the effectiveness of project operations and to ensure that it continues to meet the requirements with regards to SHEQ policy, project objectives, resources needs, planning and improvement.

All aspects listed below are addressed during each annual management review cycle, in order to accurately assess current system performance and encourage improvement opportunities:

- a) Internal audit results
- b) Customer feedback (including complaints)
- c) Achievement of quality objectives
- d) Process performance, product and service conformity results and review of measurement requirements
- e) Non-conformities and corrective action status
- f) Action item results (from previous management reviews)
- g) Changing business and operational conditions that may affect the QMS
- h) Review of objectives and improvement recommendations
- i) Adequacy of resources
- j) Effectiveness of actions taken to address risks and opportunities
- k) External provider performance results

### 3.8.1.6 Management Review Outputs

Outputs of the management review shall include decisions and actions related to opportunities for improvement, any need for changes to the QMS, project operations and resource needs.

Management review minutes are recorded and made available to all attendees and other affected parties. In addition to documenting the discussed items, minutes clearly indicate action items assigned, including:

- a) QMS improvement measures and effectiveness
- b) Process and service improvement measures
- c) Resource requirements to achieve improvement

**Ref: 348-25418“Management Review”**

## 3.9 IMPROVEMENT

### 3.9.1.1.1 General

TM determines and selects opportunities for improvement and implements necessary measures to meet customer requirements and enhance customer satisfaction, including:

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- a) Improving products and services to meet requirements as well as to address future needs and expectations
- b) Correcting, preventing, and reducing undesired effects
- c) Improving the performance and effectiveness of the QMS

The following are some of the triggers for opportunities for improvement:-

- d) Lessons learnt
- e) Customer feedback
- f) Risks and opportunities
- g) Audit findings
- h) Any issues that the end user feels can affect the operation of the plant
- i) Training requirements
- j) Plant maintenance requirements

#### **3.9.1.2 Nonconformities and Corrective Action**

TM QA Dept. shall coordinate correction and corrective measures to eliminate and prevent reoccurrence of nonconformity.

The processing of Corrective Action Reports shall be effected via WISPA

The result of the action taken should form part of the Management Review.

***Ref: 200-1684 "Corrective Action Request"***

#### **3.9.1.3 Continual Improvement**

TM continually strives to improve the QMS through rigorous application of its Quality Policy and objectives, internal audits, analysis of data, corrective and preventive actions, and management reviews.

### **4 Process for Monitoring**

#### **4.3 Key Performance Areas and Indicators**

Key Performance Area/Indicators (KPA/KPIs) shall be determined by process owners, measured, analysed and reported on at a predetermined frequency.

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#### 4.4 Document Review and Self-Assessment

##### 4.4.1 Document Self-Assessment

The “Process Owner” of this document along with departmental personnel and the project QMS Engineer shall undertake a “self-check” review of the process defined in this document at six monthly intervals, commencing from the effective date of this document, to check:

- a) The process / procedure operational integrity
- b) Process efficiency
- c) The level of stakeholder knowledge and implementation.

Participants and results of the “self-check” review shall be documented by the Process Owner in the “Self-Assessment Checklist” (***QMS Template No. QMS 348-655890***) example included as an Appendix to this procedure which shall be issued to [medupiga@eskom.co.za](mailto:medupiga@eskom.co.za) by the Process Owner once completed.

Process Owner shall proceed with any revision requirements in line with Medupi Procedures 348-25418 “Development and Change of Medupi QMS Documents” and 348-883808 “Document and Record Management”

##### 4.4.2 Revision Period

All QMS document shall undergo a 3 yearly compulsory revision period from the effective date.

#### 4.5 Training Requirements

This PQP will be communicated to all stakeholders via Quality Bulletin, and at Quality Awareness training.

### 5 Acceptance

This document has been seen and accepted by:

Name	Designation
Z Shange	Medupi Power Construction General Manager (Acting)
T Biyela	Senior Construction Manager
E Modise	Employer’s Representative
B Mgidlana	Project Quality Manager
T Raudzingana	Risk & Compliance Manager
G Mkhonza	Internal External Stability Manager/SD&L, Procurement, Communications & CSI

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Name	Designation
N. Molapo	Health & Safety Manager
E Marell	Environmental Manager
I Letsie	Finance Manager
R Nemutandani	Project Engineering Manager
Dr. A Venter	FIDIC Engineer
Ernie Basson	Facilities Department Manager
O Phasha	Project Controls Manager
T Moche	Human Resource Manager

## 6 Revisions

Date	Rev.	Compiler	Remarks
June 2021	8	R. Tshotheli	<ul style="list-style-type: none"> <li>Inclusion of Facilities Department's plan.</li> <li>Update Statement of Management Commitment to Quality</li> </ul>
January 2018	7	R. Tshotheli	<ul style="list-style-type: none"> <li>Aligned contents of the document with the Eskom template</li> <li>Aligned with the ISO 9001:2015 standard</li> </ul>
September 2012	6	R. Moodley	<ul style="list-style-type: none"> <li>Revised in line with ISO 9001:2008.Stage 1 Audit Finding Report QM 26.10.09.2012</li> </ul>

## 7 Development Team

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

- Brenda Mgidlana – Project Quality Manager
- Eugene Memela – Chief Advisor: QA
- Raymond Tshotheli – Senior Advisor: QA
- Lwandiso Zamxaka – Senior Advisor: QA

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## Appendix A – Process Self-Assessment Checklist

### A.1 Process Self-Assessment Checklist

Discipline:		Applicable Document No.: 348-883902				Self-Assessment Date: / /	
Item No	Ref Section	Self-Assessment Question	Compliant			Comment	
			Yes	Part	No		
1	3.2	Are the internal and external issues still relevant to the purpose and strategic direction of the project?					
2	3.1	Are the Quality Objectives still consistent with the purpose and strategic direction of the project?					
3	2.5	Is the RACI Matrix still relevant to the purpose and strategic direction of the project, i.e. is the participation by various roles in completing tasks or deliverables still relevant?					
Comments:							
Self-Assessment by:		Name:	Position:		Revision Required? (Yes / No)	Planned Revision Date:	
Attendees:							

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