Eskom	Manual	Medupi Power Station Project

Title: **Medupi EMS Scope and Manual**

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Content

Figures

Tables

1. Introduction

The purpose of this document is to define the scope of the Medupi Power Station Project's EMS, as well as the method of controlling documents required by the EMS and their relationship within the EMS. This document also provides an overview of how roles and responsibilities are structured within the system.

2. Introduction

The scope of the EMS, and this Document, relates to the Project Management, Construction Management and Commissioning of the Medupi Power Station by Team Medupi. The contents of this Manual shall be applied by the Medupi Project Team. Requirements placed upon Principal Contractors, direct Suppliers and Consultants are specifically defined in Procedures emanating from this Manual. It should also be noted that conformance (or non- conformance) with this Manual, or any other part of the TM EMS, does not absolve Principal Contractors, Suppliers or Consultants to comply with relevant Legal or Contractual requirements. Contractors are specifically viewed as Employers in their own right in relation to their particular Scopes of Work.

Contractors are required to provide information to the TM as per contractual/legal or other requirements, to demonstrate compliance to legal and other requirements/environmental specifications particular to their Scope of Works.

2.1.1Environmental Scope

The scope of Medupi Power Station Project Site's EMS extends to areas over which the Project exerts control. This includes all construction activities on the physical Medupi Power Station Project Site property, as well as the footprint of adjacent properties were related construction activities are conducted.

This procedure applies to all existing or planned activities, products and services at the Medupi Power Station Project (construction and commissioning stages), under normal, abnormal and emergency conditions, as well as to employees and contractors.

The High Voltage yard and Transmission Lines are excluded from this EMS from where Eskom (Transmission) becomes responsible. Once construction of sections is complete, and handed over to Eskom (Generation) for commercial operation, these areas will also be excluded from the Scope of this EMS.

Site activities include but are not limited to:

- Storage and handling of substances associated with the construction of Power Station and all ancillary infrastructures;
- Land management (e.g.'clear and grub'; rehabilitation; erosion control; alien vegetation control; game management);
- Waste management (e.g. handling and disposal of domestic and hazardous waste);
- Air quality management (e.g. dust; noise; gaseous emissions);
- Surface water management (e.g. storm water management; storage, treatment and supply);
- Ground water management;
- Contract management;
- Procurement issues;
- Public liaison;
- Training and awareness; and
- Stopping activities when environmental legal requirements are contravened.

The geographical boundary of the property, over which Medupi Power Station Project exerts control, is depicted in Figure 2 below.

Medupi Power Station Project may attempt to influence activities, products and services that do not fall under their direct control/areas of jurisdiction where reasonably practicable (such as by querying or commenting on environmental concerns, when required) but such activities, products and services may fall under the environmental scope and control of other Eskom Business Units or Corporate functions e.g. the coal supply agreement.

Due to the fact that all actual site construction is undertaken by contactors, contracted companies are specifically viewed as employers in their own right, as per the OHS Act. In this regard, operational documentation for significant environmental aspects and impacts is controlled through the requirements stipulated in the Medupi EMP, and may be controlled further through contractor's method statements and procedures, which is reviewed and influenced by Medupi Power Station Project's Site Environmental Department. Contractors are not required to have EMS certification.

Medupi Flue Gas Desulfurization Plant (FGD):

FGD Plant shall only form part of the EMS scope upon the commencement of the construction phase.

All the required authorizations have been obtained from the relevant authorities and will be incorporated into the EMS upon commencement of construction.

The Medupi Power Station Flue Gas Desulfurization (FGD) Retrofit Project will consists of the addition of FGD systems to six 800 megawatt (MW) coal fired steam electric generating units currently being constructed .The FGD Project will result in the addition of wet limestone open spray tower FGD systems to each of the operating units.

The Medupi plant is currently under construction and nearing completion. Each of these units has been designed and is being constructed with provisions incorporated into the space and equipment design to accommodate the installation of wet limestone FGD systems. Each of the six FGD absorbers will treat the flue gas from one boiler; commercial-grade saleable gypsum, chemical sludge and chemical solids will be produced as by-products. A cluster of three absorbers will be located near each of the plant's two chimneys. Systems for makeup water, limestone preparation, FGD by-product (gypsum) dewatering and storage/disposal and treatment of the wastewater stream will be common to all FGD absorbers in the plant

The FGD areas can be categorised into 2 areas, the limestone off-loading area and the main FGD area. The limestone off-loading area for receipt of limestone via the new Rail Siding or trucked via a new access road network. This area includes the limestone stockpile, pollution control dams and other infrastructure to facilitate limestone offloading. The limestone off-loading area contains a gypsum storage building for the off-take of gypsum via rail in the future. The main FGD area is the area on the western side of the existing Boilers, which comprises of the Process and proposed Waste Water Treatment Plants (WWTP). The limestone and gypsum conveyor servitudes connect the main FGD area and limestone off-loading area.

Program details:

a) A limestone off-loading facility

b) A limestone stockyard and associated handling system

c) A limestone slurry preparation system

d) The FGD absorber and common plant infrastructure

e) A gypsum dewatering system

f) New wastewater treatment facility independent of the power stations water treatment facility

g) Gypsum off-take and disposal facility

2.1.2Purpose

The purpose of the document is to describe the complete system used to manage the construction of the Medupi Power Station, to detail activities, responsibilities, requirements and controls to manage the project's environmental requirements.

2.1.3Applicability

This document shall apply throughout Eskom Medupi Power Station construction activities only.

2.1.4Effective date

Date of authorisation

2.2 Normative/Informative References

2.2.1Normative

[1] 348-961711 Project Execution Plan

[2] 348-883902 Project Quality Plan

[3] 348-653867 Development and Change of Medupi QMS Documents

[4] 348-883808 Document and Record Management Procedure

[5] 348-639974 Unit Construction Work Instruction

[6] ISO 14001, Environmental Management Systems, Requirements with guidance for use ISO 14001

[7] The Constitution of the Republic of South Africa Act 108 of 1996

[8] National Environmental Management Act (107 of 1998)

[9] 32-95 Eskom Environmental, Occupational Health and Safety Incident Management

[10] National Water Act 36 of 1998

[11] 200-35208 The Environmental Management Plan for the Medupi Coal-fired Power Station in the Lephalale Area, Limpopo Province – The Construction Phase

[12] National Environmental Management Act: Air Quality Act 39 of 2004

[13] 348-860848 Medupi Environmental Policy

[14] 32-249 Environmental Liaison Committee Performance Indicator Reporting Procedure

[15] 240 91688868 Emergency Preparedness and Response Plan

[16] 348-693723 Environmental Incident Management Procedure

[17] 348-717685 Procedure for the handling of HSE Non-conformities and Corrective and Preventive Action

[18] 200-38428 Environmental Audit Procedure

[19] 200-38432 Environmental Communications Procedure

[20] 348-882943 Environmental EMS Management Review Procedure

[21] 348-687105 Medupi Identification and Application of Environmental operational Controls Procedure

[22] 348-862555 Environmental Performance Monitoring and Measurement Procedure

[23] 348-686923 Medupi Environmental Objective, Targets and Programs Procedure

[24] 348-690968 Environmental Training, Awareness and Competence Procedure

[25] 200-73977 Environmental Legal and Other requirements Procedure

[26] Register of EMS Procedures, Operational Controls and Records Master List

[27] NNA 200-9471 Risk Management Plan

2.2.2Informative

ISO 9001:2015 Quality Management Systems

ISO 14001:2015 Environmental Management Systems

ISO 18001:2007 Occupational Safety and Health Management Systems

2.3 Definitions

Term	Definition
Activity	An action either planned, actual (existing) or historical, that occurs or is performed by employees on behalf of the company.
Contractor	An employer who performs construction work and includes principal contractors. Contracted companies are specifically viewed as employers in their own right, as per the OHS Act.
Employee	An individual in the full-time or part-time / occasional employ of Medupi Power Station Project Team
Unit Area	A functional responsibility allocated to an Environmental practitioner based on plant area and responsible contractors.
Environment	The surrounding in which humans exist that is made up of: i. the earth's land, water and atmosphere, ii. micro-organisms, plant and animal life, iii. any part or combination of (i) and (ii) and the interrelationship among and between them and iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well being
Environmental aspect	An element of an organisation's activity, product and service that can have a beneficial or adverse impact on the environment.
Environmental Management Plan/Programme	A documented plan or programme which captures short, medium and long term actions aimed at addressing environmental management at the Station.
Environmental Practitioner	Individual working in the Environmental Department, which includes the trainees, officers, senior advisors and manager.

Interested and affected part	Person or organisation that can affect, be affected by or perceive itself
Life cycle	Consecutive and interlinked stages of a product or service, from raw material acquisition or generation from natural resources to final disposal.
Team Staff	All employees under Medupi project

2.4 Abbreviations

Abbreviation	Explanation
Doc. Centre	Documentation Centre
EDMS	Electronic Document Management System/s
EMP	Environmental Management Plan
EMP/EMPr	Environmental Management Plan/Programme
EMS	Environmental Management System
RACI	Responsible, Accountable, Consulted, Informed
SPO	Smart Plant Operator

2.5 Roles and Responsibilities

The Environmental Manager will delegate a responsible person/s for each Unit Department who will:

- Identify environmental aspects in their area of responsibility;
- Determine the significance rating of the identified environmental aspects and impacts; and
- Review environmental aspects/impacts and the associated significance rating when required.

Environmental management system roles, responsibilities and authorities have been identified as per Table 1 below. Each EMS Procedure referenced from this Manual also provides for a RACI Matrix defining roles and responsibilities particular to that Procedure.

The Management of the Team Medupi will jointly provide the resources essential to the implementation and control of the EMS, including: training, human resources, specialty services, financial resources, technical and informational services.

The Environmental Manager is the EMS Management Representative and oversees the establishment, operation and maintenance of the EMS. These responsibilities may from time to time be delegated. The TM environmental department provide specific support. The Project's environmental organisational structure and line communication is depicted pictorially in Figure 1 below. Each member of the TM is expected to comply with applicable elements/requirements of the EMS.

Principal Contractors, and subcontractors, shall comply with requirements of the TM EMS where indicated in specific Procedures, but shall in all cases comply with the relevant Project Agreements and applicable statutory and regulatory requirements in their own right. (Principal) Contractors are Employers in their own right and therefore have to ensure compliance to all Legal and Other Requirements. Environmental roles and responsibilities of (Principal) Contractors are also expanded upon in the Medupi Environmental Management Plan.

RACI Matrix Key:

R - Responsible	The role-player required to complete the activity/task
A - Accountable	The role-player accountable for the activity/task and who is required to ensure that the activity is completed on time and in a manner which meets all expectations/requirements
C - Consult	The role-player with whom the Responsible role-player is required to consult before the activity
I - Information	The role-player whom the Responsible role-player is required to inform once the activity/task has been completed

Table 1: RACI Matrix

Process Step/Activity	General Manager	Team Medupi Construction Manager	Team Medupi Staff	Unit area Managers	Contract Managers	Environmental Manager	Environmental Practitioners	ECO	Contractors
Context of the Organization									
Understanding the organization and its context	A	C,I	I	R	R	C,I,R	R	I, C	I
Understanding the needs and expectations of Interested parties	A	C,I	I	R	R	C,I,R	R	I, C	I
Determining the scope of the EMS	A	C,I	I	I	R,I	R,I,C	R	I	I
Leadership									
Leadership and Commitment	A,R	R	I	R,I,C	R,I,C	R,I,C	I,R	I	I
Environmental Policy (compilation)	A	C,I	I	I(C)	C,I	A	R	I	I
Environmental Policy (implementation and operation)	A,R	R,I,C	R,I,C	R,I,C	R,I,C	R,I,C	R,C	I	R,I
Organizational Roles and Responsibilities	A,I,R	I,R	I,R	I,R	I,R	R	C,I,R	C,I,R	I,R
Planning									
Environmental Aspects	I	I(C)	I(C)	I(C),R	I(C),R	A,R	R,C	I	C,I,R

Process Step/Activity	General Manager	Team Medupi Construction Manager	Team Medupi Staff	Unit area Managers	Contract Managers	Environmental Manager	Environmental Practitioners	ECO	Contractors
Compliance Obligations	A	R,C,I	R,C,I	R,C,I	R,C,I	R,C,I	R,C,I	R	R,C,I
Objectives & Targets	C,I,A	R,C,I	R,I	R,C,I	R,C,I	R	R	I	I,R
Support									
Resources	A	R,C,I	I.C	R,C,I	R,C,I	R	R	I	I,R
Competence	A	R,C,I	C,I	R,C,I	R,C,I	R	C,I	I	I,R
Awareness	A	R,C,I	I	R,C,I	R,C,I	R	R	I	I,C,R
Internal Communication	A	R,C,I	I	R,C,I	R,C,I	R	R	I	I,R
External Communication	A	C,I	I	C,I	C,I	R	I	I,R	I
Documented Information	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R	I,R	I,R
Operation									
Operational Planning and Control	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R	I	I,R
Emergency Preparedness	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R,I	I	I,R
Performance Evaluation									
Monitoring, measurement and analysis	A	C,I	C,I	R,C,I	C,I	R	R	I	I,R
Evaluation of compliance	A	C,I	C,I	C,I	C,I	R	R	I,R	I,R
Internal audit	A	C,I	C,I	C,I	C,I	R	R	I,R	I,R

Process Step/Activity	**General Manager**	**Team Medupi Construction Manager**	**Team Medupi Staff**	**Unit area Managers**	**Contract Managers**	**Environmental Manager**	**Environmental Practitioners**	**ECO**	**Contractors**
Management review	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R	I	I
Improvement									
Nonconformity and corrective action	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R	I,R	I,R
Continual Improvement	A	R,C,I	R,C,I	R,C,I	R,C,I	R	R	I,R	I,R

2.6 Related/Supporting Documents

N/A

3. Manual

3.1 Context of the organisation

The following lists will form part of the context of the organisation, the context will guide priorities for the organisation, mitigation or corrective actions shall be addressed at different platforms including management meetings, stakeholder meeting etc.:

- Internal and external issues-
- Risks and opportunities,
- Needs and expectations from Internal and external stakeholders with clear indication on compliance obligations.

3.1.1.1 Internal and External issues

Table 1 Internal and External issues

Internal	**External**
Financial constraints of the company.	Waterberg Water stressed
Long term Impact of activities on ground water	Air quality of the area due to industrial activities of the area
Inter-departmental communication	Low economic growth rate
Long lead time of procurement processes, approval process from Treasury delays execution/operation of contracts e.g. Heritage project and Bi-annual audits delays	Stringent environmental laws
Stability i.e. stable worksite and demobilisation(High staff turnover and work stoppages)	Labour unrest due to demobilisation
Project Contract Management	Waterberg biosphere, Waterberg is the first region in the northern part of South Africa to be named as a Biosphere Reserve by UNESCO. High number of red data species in region.
Systems/Technology • Unreliable software tools e.g. Wispa delays, migration to Hyperwave, access to online legal register.	FGD Technology wet option that Medupi has chosen v/s dry which is perceived the best option by external views.

3.1.2 Risks and opportunities

Table 2 Risks and Opportunities

Significant Environmental Aspects		
	Risks	**Opportunities**
R1:Use of high quantities of water	Water restrictions impacting negatively on project.	Water efficiency, re-use and recycle.
R2:Waste use management		Continue exploring the recycling of waste, less waste disposed at landfill e.g. Bentonite Bags etc.
R3:Ground water pollution	Long term impact on ground water resource	
Compliance Obligations		
R4:Legal non compliances due to stricter laws and permits	Non-compliance to water use license, EMP and ROD conditions and any other legal or other requirements.	
Internal and External issues		
R5:Waterberg a high biodiversity area	Negative long term impact on heritage resources/biodiversity	
R6:Financial constraints of the company	• No funds or resources for environmental controls. • See Environmental Risk-Project and package risks	
R7: Heritage project management, relationship with communities relating to graves matter.	Reputation damage due to heritage project management	
R8:Long lead time of procurement processes,	The approval process from Treasury delays execution/operation of contracts e.g. Heritage project and Bi-annual audits delays	

3.1.3 The Medupi project's interested parties and their needs

Table 3: Interested parties

Key Stakeholder	**Needs and Expectations**	**Compliance obligations**
Government as shareholder represented by the	• Achievement of cost, socio economic objectives and delivery targets • Demonstration of compliance to legal requirements	Yes, comply to national legislation/laws

following Departments: Department of Public Enterprises, Department of Water and Sanitation, Department of Environmental Affairs		e.g. Water Use license, ROD, Waste license, EMP etc.
Department of Finance (National Treasury)	• Good governance(sound financial management and demonstration of compliance)	No
Financial Institutions: World Bank, African Development Bank, etc.:	• Governance, Overall spend, delivery progress issues (technical as well as socio economic) and corrective actions • Socio Economic Impact of the project. Business case and projections. • Demonstration of compliance to legal requirements and standards	Yes, environmental requirements for funding institutions.
Local Government: Mayor , Municipal manager and Premier	• Socio Economic Impact, demobilisation and infrastructure development (CSI), skills development, Environmental protection. • Demonstration of compliance to Local by-laws	Yes, Compliance to By-laws regarding noise, water, waste, dust, air quality and general environmental matters.
Community: Tribal Authorities	• Job opportunities, skills development, demobilisation and infrastructure (CSI), Heritage resource management. • Demonstration of compliance to Local by-laws and environmental protection	Yes, requirements of Heritage Management Plan
Organised Labour: NUMSA, NUM, Solidarity etc.	• Demobilisation and employment conditions, salary increase, etc. • Salary payments and deductions e.g. taxes, Environmental protection. • Safe working environment for workers.	No
Eskom as Asset owner: BOD , Exco	• Achievement of cost, socio economic objectives and delivery targets, environmental protection. • Demonstration of compliance to legal requirements and ISO, SABS as well as other requirements where applicable.	Yes
Eskom Generations: Generation Power Station Manager	• User requirements and defects, Environmental protection. • Demonstration of compliance to legal requirements.	Yes, water and air quality legislation.
TM departments: HR, Engineering, Procurement, Construction, Quality etc.	• Guidance/advice/Assurance on environmental compliance issues.	Yes
Employees	• Safe working and protected environment	Yes

Contractors	• Safe working and protected environment	Yes
Suppliers	• Clear contractual requirements(scope of works/environmental requirements) • Compliance to contractual agreements	No
Media	• Access to project information using PAIA.	Yes, within the confines of National key Point.

3.2 Leadership

Leadership shall be at the centre of the management of the systems, top leadership shall ensure that the system operates efficiently by ensuring that:

- The resources are available to implement the EMS systems

  The project has an environmental budget in place where all EMS Objectives and Key Projects etc. are catered for, In addition to this, all other Departments also have own pollution prevention control E KPI's and related budget to achieve them (e.g. Dust suppression, Liner system, Water treatments systems etc.) Top management also demonstrate leadership by ensuring qualified staff are placed to ensure environmental responsibilities are executed.

- The principle on continual improvement is entrenched, through management reviews and regular management meetings where environmental issues are discussed. The management reviews are chaired by project director or delegation where applicable.
- The intended outcome of the system is achieved, by ensuring environmental KPI's are in place to address the intended outcome of the system.
- The EMS system is integrated into organisation processes, by ensuring that the environmental is part of top management meetings, inter-departmental teams that addresses specific issue like water management, procurement, design and construction meetings.
- Ensure that all environmental policies, procedures and objectives are implemented or executed.

3.3 Environmental policy

The environmental policy shall be documented as per document 200-73979 and the following will apply:

- Policy will be reviewed three yearly as per document control procedures or as the need arises;
- Signed by the Project Director;
- Will be in line with the ESKOM SHEQ policy;
- Will be communicated to all employees through inductions, toolbox talks and other media platforms;
- Appropriate to activities ,aims like environmental protection and pollution prevention and context of the project;
- Provides framework for objectives and targets;
- Will be available to all interested and affected parties;
- Commitment to legal compliance and continual improvement.

3.4 Organisational roles, responsibilities and accountability

Environmental roles and responsibilities are outlined in the EMS representative appointment letter as delegated by the project director. Detailed description of the roles and responsibilities are outlined in the EMS procedures through the RACI matrix and Figure 1.

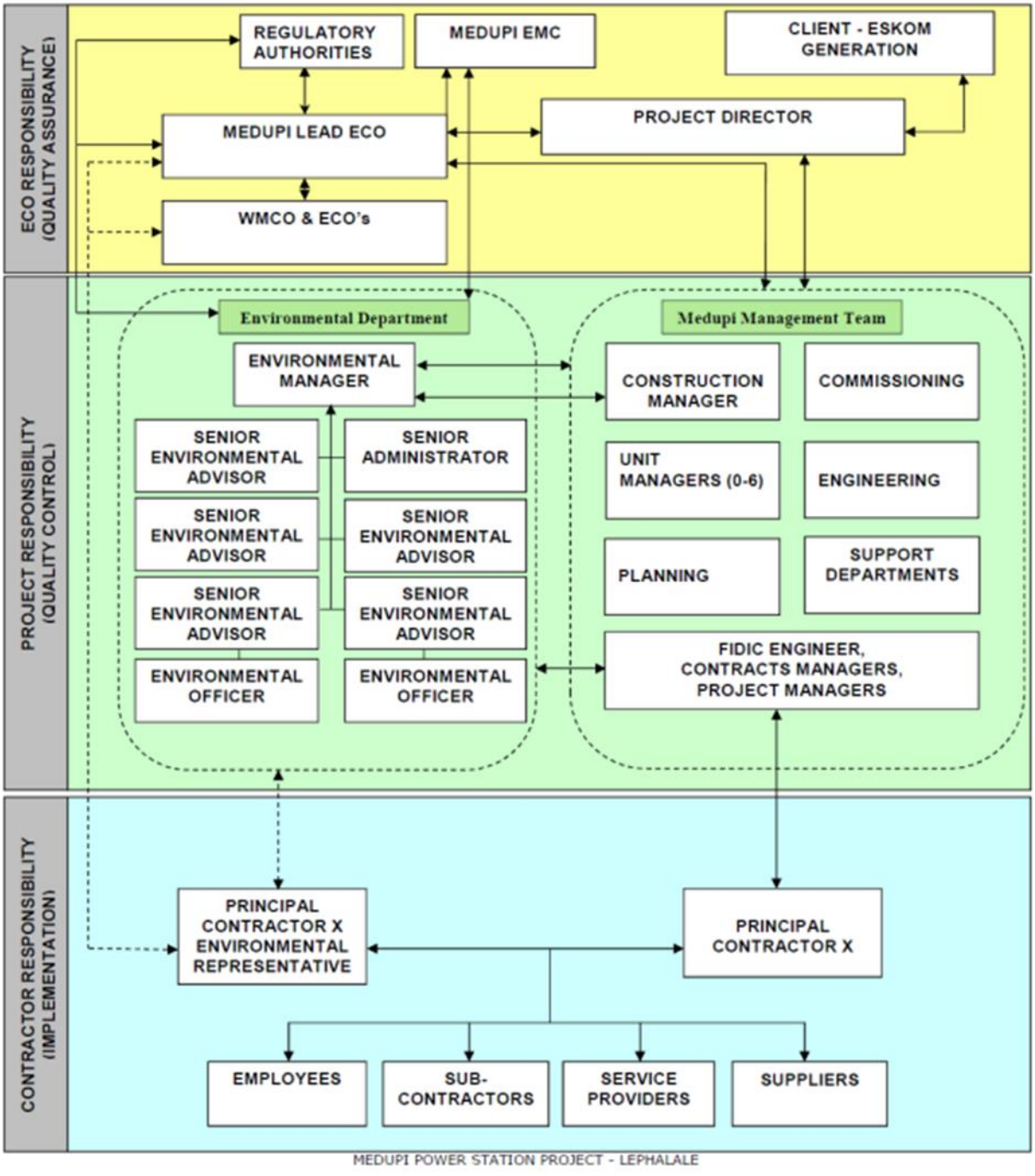

Figure 1 TM Environmental Communication Overview

3.5 Planning

3.5.1 Actions to address risks and opportunities

An action plan will be maintained to address Risks and Opportunities, Environmental Aspects as well as Compliance obligations. The plan will consist of the following:

- The potential threat/opportunities/risks
- Platform/department/responsible person(s) to address the risks/opportunities e.g. Management meetings, Water management team, Construction Manager, Project Director Etc.
- Controls, actions and timelines or frequency of monitoring where feasible
- External organisations to be consulted as applicable e.g. Department of water Affairs, Treasury etc.
- Escalations to management or Eskom Board of some risks or opportunities where applicable.

3.5.1.1 Environmental Aspects

Procedure 200-73975 will be used for identification and Assessment of Environmental Aspects and Impacts.

During the identification and assessments of environmental aspects, the life cycle approach will be applied, taking into consideration the following:

- the level of risk the aspect presents to the organizations
- the level of risk the aspect presents to the environment
- the degree of influence or control the organization has over the aspect

Medupi project will apply the life cycle approach (cradle to grave) pertaining to the impact caused by its suppliers, service providers etc. The approach described above is a continual improvement process and must be assessed on an ongoing basis (at least annually) to verify whether the life cycle approach is being applied for significant activities.

The life cycle approach will follow the following basic steps:

Pre-Use Phase (Cradle)

This phase will cover the risks associated with sourcing (supply chain) of raw materials, manufacturing process and transportation to site where applicable.

Construction and commissioning phase

This phase will cover the risks associated with all stages of construction including but not limited to site establishment, excavations, concrete pouring/steel fabrications, etc.

End of life of construction (Grave)

This phase will cover the risks associated with all stages of end of life phase including but not limited

Rehabilitation, demolition phase, landfilling or recycling.

3.5.1.2 Compliance obligations

All compliance obligations will be addressed under work instruction 200-73977-Medupi Environmental Legal and other Requirements procedure and under section 3.5.1.

3.5.1.3 Environmental objectives, and planning to achieve them

All compliance environmental objectives will be addressed under procedure 348-686923-Environmental Objectives, Targets, Management and Programs procedure. The Objectives and Targets shall be established taking into consideration:-

- The organizations significant Aspects
- Risk and Opportunities and;
- Compliance Obligation

3.5.2Support

3.5.2.1 Resources

All EMS procedures includes the identification of the necessary resources where applicable for the implementation, maintaining and improving the EMS system, these can include training, software tools (Hyperwave, Legal Register, Wispa), external consultants, human resources etc.

3.5.2.2 Training, competence and awareness

All Environmental Training, awareness and competence will be addressed under work instruction Environmental Training, Awareness and Competence-348-690968

3.5.2.3 Internal and external communication

All environmental communications will be addressed under work instruction, Environment Communications 200-38432.

3.6 Documented Information

Environmental documentation shall be managed in accordance with Medupi Document and Record Procedure (200-1680). The Document Control Centre and Environmental Department must ensure that relevant versions of applicable documents are available at points of use, remain legible and readily identifiable. The Document Management Team must ensure that electronic documents are protected and regularly backed-up. All EMS core procedures are found and controlled on the Project Site's electronic document management system/s (EDMS) such as the shared Hyperwave system.

The Medupi Power Station Project Director shall approve all EMS core documentation for adequacy. EMS Documents shall be reviewed, revised, updated and re-approved every three (3) years or as and when required.

Once a procedure has been authorised/ approved, the completely signed copy of the previous version must be archived by the Document Control Centre. .

Previous versions of procedures are considered obsolete once reviewed and authorised procedures are available on the Project Site's EDMS. Destruction of obsolete documents shall be handled according to procedure **348-883808**

All environmental records generated during the life of the Project will be maintained by the TM and the relevant originating Contractor who will be responsible for the management, retention and archiving in terms of their own Record Control Procedures.

Records generated as a result of the application of Procedures are listed in each Procedure. A Records Matrix (200-74168) identifies Storage, Access, Retention and Disposal of Records shall follow the process defined in the Procedure 348-883808 “Document and Record management”. Documents of external origin will follow the site document control process which includes identification and control; these documents include but are not limited to:

- Calibration certificates
- Accreditation records
- International Standards
- Lenders requirements
- External audit reports
- Letters/communication with authorities
- Monitoring reports
- Surveys and specialist studies reports

3.7 Operational planning and Controls

All operational controls will be addressed under procedure PPZ200-73969: Identification and Application of Environmental Operational Controls.

3.7.1Emergency preparedness and response

All emergency preparedness and response will be addressed under work instruction **240-91688868:** Medupi Power Station Emergency Preparedness and Response This is a joint GCD and GX work instruction for dealing with the stations emergency situations.

3.8 Performance measurement and monitoring

All monitoring requirements will be addressed under work instruction 348-862555: Environmental Performance Monitoring and Measurement.

3.9 Evaluation of compliance

Evaluation of compliance addressed under work instruction PPZ 200-73977-Procedure for Identification, application, and compliance with relevant Legal and other Requirements.

3.10 Internal audit

All internal audits will be addressed under procedure PPZ 200-38428-Medupi Environmental audit work instruction.

3.11 Management review

All management review requirements will be addressed by work instruction **348-882943** Management Review

3.12 Improvement

TM determines and selects opportunities for improvement and implements necessary measures to achieve the intended outcomes of its EMS.

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

- Lessons learnt
- Customer complaints/feedback
- Risks and opportunities
- Audit findings
- Trends in Non-conformities and Corrective actions
- Incidents statistics
- Training requirements

3.12.1 Non-conformance and corrective actions

All non-conformance and corrective actions will be addressed under procedure PPZ 200-38426: Procedure for the handling of HSE Non-conformities and Corrective and Preventive Action and procedure PPZ 200-10506: Environmental Incident Management.

3.12.1.1 Continual Improvement

TM continually strives to improve the EMS through rigorous application of its Environmental Policy and objectives and targets, internal audits, risks and opportunities action plans, analysis of data, corrective and preventive actions, and management reviews.

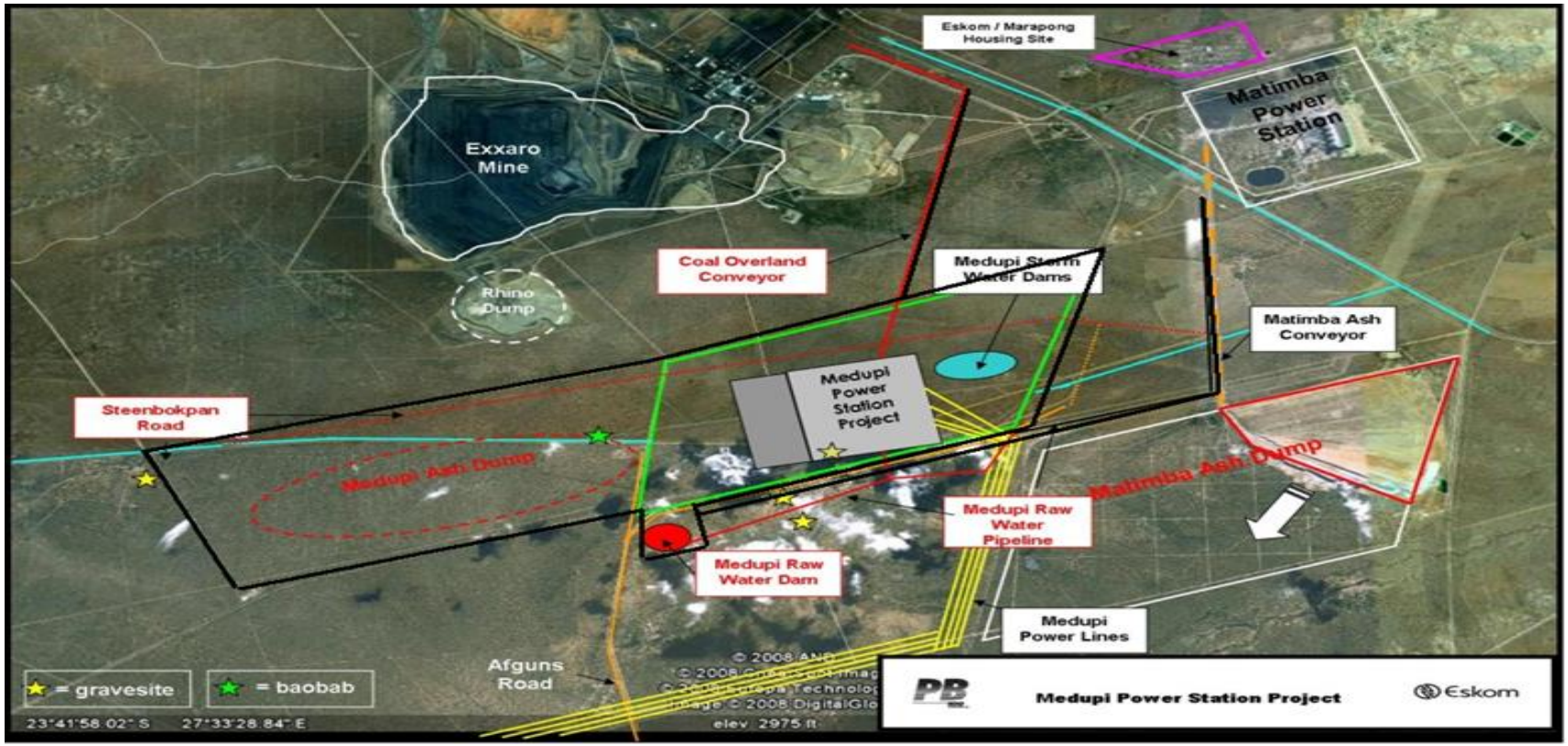

Figure 2 Geographical boundary of Medupi Power Station Project

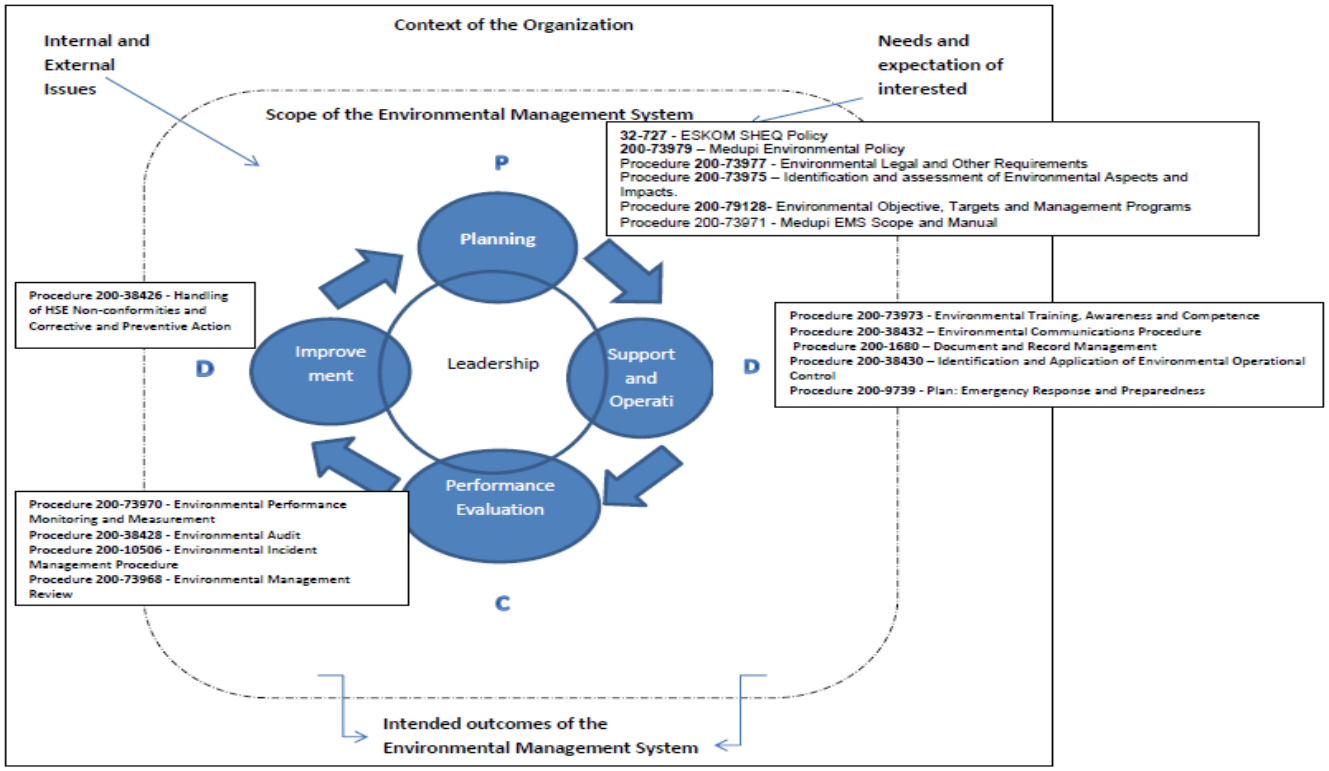

Figure 3 EMS Overview

3.13 Key Performance Areas and Indicators

The following Key Performance Areas / Indicators (KPAs / KPIs) shall be measured, analysed and reported. The Process Owner shall be accountable, and assign the responsibility at the frequency as indicated below, documented as part of the QMS measurement, analysis and improvement initiative.

Table 4: KPAs/KPIs

Key Performance Area	Key Performance Indicator	Measure Frequency	Responsibility	Records
• Updated EMS documentation	Current manual relevant and available	• As per review timeframes	• Environmental Manager	• Reviewed and management signed-off documentation
• Document and Record control	Retain and store records generated as a result of this document as defined in the Procedure 200-1680 “Document and Record management”.	• Annually or as required	EMS Co-ordinator	As generated by the procedure
• Revision of Document	Revision requirements in line with Medupi Procedures PPZ 200 5665 “Development and Change of Medupi QMS Documents” and PPZ 200 1680 “Document and Record management”	• Annually or as required	Environmental Manager	New revised document

3.14 Document Review and Self-Assessment

3.14.1 Document Self-Assessment

“Process Owner” identified on the front page of this document along with departmental personnel and he 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” (Template No. 348-655890)** included as an Appendix to this procedure which shall be submitted via SharePoint to Medupi Documentation Department Help Desk by the Process Owner once completed.

Process Owner shall proceed with any revision requirements in line with Medupi Procedures, **348-653867 "Development and Change of Medupi QMS Documents" and 348-883808 "Document and Record Management".**

13.4.2. Revision Period

All QMS documents shall undergo a compulsory 3-year revision.

3.15 Training Requirements

No project specific training required to implement the process documented in this procedure document out with normal job function.

Acceptance

This document has been seen and accepted by:

Name	Designation
Emile Marell	Environmental Manager
Brenda Mgidlana	Project Quality Manager
Zandi Shange	General Manager Projects: Medupi/Kusile

4. Revisions

Date	Rev.	Compiler	Remarks
2022/02/24	Rev 07	Mumsy Boshomane	Minor reviews to address the 2021 Peer review doc control findings regarding the new ref number for the Emergency preparedness and response work instruction, as well as minor other admin changes e.g. Management change
2019/05/21	Rev 06	Mumsy Boshomane	Update to include ISO14001:2015 requirements, interested parties etc.
2018/02/13	Rev 05	Mumsy Boshomane	Assurance Audit Findings Corrective Action

5. Development Team

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

- Mumsy Boshomane
- Sakutanya Mamabolo
- Dovhani Mudzielwana
- Lizi Koekemoer
- Sabelo Linda
- Lutendo Mathavha

Appendix A – Process Self-Assessment Checklist

A.1 Process Self-Assessment Checklist

Discipline: **Environment**	Applicable Document No.:	Self Assessment Date: / /

Item No	Ref Section	Self-Assessment Question	Compliant			Comment
			Yes	Part	No	
1	5.2.1	Does the Project outline the Scope of the EMS				
2	5.2.1	Are environmental aspects and impacts additionally controlled further through contractor's method statements and procedures?				
3	5.2.1	Are the contractors' method statements and procedures reviewed and influenced by Medupi Power Station Project's Site Environmental Department?				
4	5.2.2	Are Environmental documentation managed in accordance with Medupi Project's Document and Record Management Procedure (200-1680)?				
5	5.2.2	Are all EMS core procedures found and controlled on the Project Site's electronic document management system/s such as the shared Hyperaware and/or SPO system.				
6	5.2.2	Does the Medupi Power Station Project's Project Director approve all EMS core procedures documentation for adequacy?				
7	5.2.2	All procedures are reviewed, revised, updated and re-approved annually or sooner if required.				
8	5.2.2	Are previous versions of documents archived?				
9	5.2.2	Are previous versions of documents that are not archived, destroyed to prevent unintentional use?				
10	5.2.2	Are Environmentally related procedures/method statements from other Departments or Contractors assessed and accepted by the Medupi Power Station Project Environmental Department?				

Comments:				
Self-Assessment by:	Name:	Position:	Revision Required? (Yes / No)	Planned Revision Date:
Attendees:				