Eskom	Work Instruction	Medupi Power Station Project

Title: **Medupi Spill Prevention, Control and Countermeasures Management Plan**

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Compiled by	QA, Interface & Governance Review	Functional Responsibility	Authorized by
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1. Introduction

This document is designed for Principal Contractors (PCs) to use as a guide in preparing a Spill Prevention, Control, and Countermeasures (SPCC) Plan in response to primarily land-based spills for the Construction Phase of the Medupi Power Station Project, but also includes responses to spills on water bodies and concreted surfaces. All PCs will be required to develop their own SPCC-Plan, in conjunction with related procedural documents, to effectively govern their activities in terms of spill management as appropriate to meet the requirements of the Medupi Site. The PCs' specific SPCC-Plan must be accepted by TM Environmental Department. This document forms part of the Project's Environmental Management System as an Operational Control Plan.

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2. Supporting Clauses

2.1 Scope

This document sets out the requirements for the actions required to avoid, mitigate, and respond to, land-based spills that occur on the Medupi construction site, and areas and activities deemed to form part of such, under relevant contractual arrangements. It addresses spills of all liquids deemed hazardous to the environment, which includes, but is not limited to:

- Hydrocarbons;
- Lubricants, solvents and paints; and
- Hazardous liquid wastes, including leachates.

All PCs shall use the SPCC-Plan Template (200- 80600), which is explained in this document, for the duration of the Project, and it will be updated throughout the Project's construction phase so that the SPCC-Plan reflects actual site conditions and practices. At a minimum, PCs must review and update their SPCC-Plans on an annual basis. . TM Environmental Department will retain an updated copy of the PCs' SPCC -Plans.

This SPCC-Plan Document provides:

- References to control guidelines and standards;
- Responsibilities for the implementation of an SPCC-Plan;
- Mitigation measures to be implemented by the PC during construction and/or installation works to meet the project commitments and eliminate or reduce potential spills;
- Verification and monitoring of implemented requirements; and
- Reporting requirements.

2.1.1 Purpose

The purpose of an SPCC Plan is to develop and implement a spill prevention and management plan in order to protect human health and the environment from spills and releases of hazardous chemical substance (HCS).

The objectives of this document are to:

- Guide the PCs to develop and implement a Site Specific SPCC-Plan for the management of land-based spills during the Construction Phase of the Medupi Power Station Project.

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 1: RACI Matrix

Process Step/Activity	TM Project Director	TM Construction Manager	TM Unit Area Manager	TM Contracts Manager	TM Environmental Manager	TM Environmental	ECO	PCs Environmental
Implementation of the Plan	I	I	I	I	A	R	I	R
Monitoring compliance to the plan	I	C,I	C,I	I	A	R	C,I	R

2.6 Related/Supporting Documents

The following quality records are utilised to record necessary process data required to verify process conformity:

- ·PC's SPCC-Plan
- ·Spill Assessment Register
- ·HCS Storage Facilities Register
- ·Incident management records
- ·Safe disposal certificates of hazardous wastes
- ·Maintenance records
- ·Training and awareness records.

The revision status of Medupi project Quality Record templates is defined in the Medupi QMS Index LRD 200 – 47329 maintained by Medupi Quality Dept.

Retention and storage of records generated as a result of this document shall follow the process defined in the Procedure 200-1680 "Document and Record Management".

3. Document Content

3.1 Process Map / Flowchart

N/A

The contents of the PC's site-specific SPCC-Plan shall contain the following:

- A brief description of the PC's Scope of Works;
- A brief description of the PC's Site Locations and boundaries (include all laydown areas and construction areas);
- A description of drainage pathways from the site;
- A PC's Site Map, which indicates the following:
- Site location and boundaries;
- Site access roads;
- Plant parking areas;
- Hazardous Chemical Substance Stores;
- Refuelling - workshops- and maintenance areas;
- Localities where HCS are used on a permanent basis;
- Drainage pathways from the site;
- Nearby waterways and sensitive areas, including their distance from HCS storage areas/areas of use.
- HCS, equipment, and decontamination areas (i.e. Potential Spill Sources);
- Pre-existing contamination sources;
- Location of all Spill prevention and response equipment (i.e. Spill Kits);

Responsible personnel involved in SPCC;

- Contact details of all dedicated spill response personnel on site;
- Contact details for external spill response service in the event of a large spill;
- The Spill Risk Assessment and Spill Assessment Register (3200-80599 and HCS Storage Facilities (200-80599);
- A description of pre-existing contaminations, if applicable;
- Clear communication protocol in terms of SPCC;
- Internal and external reporting procedures (Including WISPA Incident Notification);
- Detailed description of spill prevention and response techniques and methods;
- Spill prevention and response training and awareness; and
- Methods of disposing of the hazardous waste material resulting from spill clean-up.
- The PC must develop the Site Specific SPCC-Plan and submit it, together with their Spill Assessment Register to TM Environmental Department for acceptance

3.3.3 Spill Prevention Measures

- PCs shall establish spill prevention measures to prevent and control the risks of spills, and implement such in their construction activities.
- All mitigation measures must be in accordance with the Medupi Environmental Management Plan, Environmental Authorisations, Applicable Legislation, Standards (SANS) and other requirements.

- The PC must develop a Refuelling Procedure that aims to avoid spillage of HCS as far as possible. This Refuelling Procedure must be described and included in the PC's SPCC-Plan. The PC must also ensure that all refuelling of plant and equipment on site is done by a competent employee that has undergone training in terms of the Refuelling Procedure and the SPCC-Plan.

- **Best practices regarding refuelling of plant and equipment include the following:**
  - Use off-site fuelling sites where practical;
  - Use designated areas for required on-site refuelling.
  - Refuelling areas shall be located away from drainage courses;
  - Avoid "topping off" of fuel tanks;
  - Make use of a funnel while transferring chemical liquids;
  - Use secondary containment devices such as drip trays to catch spills or leaks while refuelling; and
  - Absorbent spill clean-up materials shall be available and located in refuelling areas.

3.3.3.2 Storage and secondary containment practices and structures

- Transportation, storage and handling of HCS must be done in accordance to the Medupi EMP.
- PC must ensure that HCS during transit are secured and measures to prevent and/or minimise pollution are in place.
- The PCs must complete a register of all HCS Storage Facilities (200-80599 as attached) and submit it together with their Site Specific SPCC-Plan to the TM Environmental Department for verification and acceptance.
  - TM Environmental Department will consolidate and verify registers of all HCS Storage Facilities from contractors.
- PCs shall establish and describe in their SPCC-plan the practices and structures that will be used to store, contain and transfer hazardous chemical substances. The description must at least incorporate the following aspects:
  - Hazardous chemical substances will be located and stored on bunded areas and contained on an impervious surface capable of handling the 110 % of the total volume of the hazardous chemicals, on site at any given time so as to prevent spills from escaping to bare soil or into waterways;
  - Where multiple containers are stored in the same bund, the capacity of the bund must be 110% of the largest container, or 25% of the combined volumes;
  - Drip trays (of durable material and in good condition) will be used for all plant/machinery/HCS for the temporary containment of spills and drips, as a precautionary measure;
  - Oil and fuel transfer valves and fittings, fuel hoses, and the like will be regularly inspected and stored to prevent spills onto bare soil or into waterways;
  - Security measures for potential spill sources. Describe the security measures that will be maintained to prevent vandalism of potential spill sources;
  - Describe the methods that will be used to prevent storm-water contact with HCS;
  - Describe the (re)fuelling and/or (re)filling procedure for all equipment;
  - Describe methods of managing secondary containment such as drip trays and bund walls during raining season; and
  - Number of drip trays that the PC has, as well as where and for what purpose these drip trays are used for. Drip trays must, as a minimum, conform to the following requirements:
    - Made of a strong, rigid and durable material;

- Hazardous Chemical type and operating environment: The equipment must be suited to handle all relevant types of HCS and at the same time appropriate for the specific operating environments that may be encountered;
- Risk profile and requirement: The risk profile would dictate the quantity of equipment stockpile needed for an effective response. This must be in conjunction with site-specific requirements, legislation and applicable standards.

- The recommended equipment includes:
  - Absorbent Pads;
  - Saw-dust;
  - Appropriate Personal Protective Equipment (PPE);
  - Chemical resistant storage vessel;
  - Sandbags;
  - Dry granular absorbent;
  - Shovels made or coated with polyethylene (non-sparking material);
  - Front-end loaders/TLB;
  - Tipper/Dump trucks;
  - Plastic liners;
  - Degreasers;
  - Corrosion resistant pump;
  - Relevant decontamination/neutralization agents; and
  - Warning tape, traffic cones or temporary barricade fencing.

3.3.4.2 Spill Response Strategy

- Responsibility for the response to a spill and the notification of a spill incident that has occurred rests with the PC.
- The spill response strategy will be manual for small operational spills and mechanical recovery for large spills. The PC shall establish protocols and procedures with other PCs and the TM for immediate access to additional spill response and containment equipment in the event of larger spills when the PCs own spill response equipment is inadequate.
- PCs are solely responsible for any spills of HCS in their allocated areas, and the subsequent clean-up, disposal of waste, and restoration of any contaminated areas. Additional resources may be sought from agreed spill response PCs and/or the TM, depending on the specifics of a spill.
- PCs shall describe their spill response procedures in their SPCC-Plan.
- PCs shall ensure that everything possible is done to control and contain HCS spills until appropriate clean-up measures can be taken.
- The spill response procedures must include a description of the actions that the PCs will take to address a spill, as well as describe the specific on-site spill response equipment that will be used to perform each task.
- If PCs make use of a Sub-contractor for spill response, the contact information of the Sub-contractor must be provided in Table 2 of the SPCC-Plan (Template).

- These would typically be reported section 30 NEMA and 20 NWA incidents

3.3.4.4 Spill on water bodies and concrete surfaces

- If a spill should reach a water body:
  - Use personnel trained in spill response on water (i.e. able to conduct risk assessments etc);
  - Ensure that a permit to conduct works is acquired (where necessary);
  - · Deploy booms in appropriate configurations to contain the spill;
  - · Deploy skimmers as appropriate; and
  - · Use floating absorbents to remove the pollutant.
  - • Collect samples of contamination upstream and downstream. These must be analysed as soon as practicably possible by an accredited lab. Parameters to be analysed will be determined by TM in consultation with ECO. Once clean-up is completed collect samples to test if treatment was adequately done.

- HCS spills on concrete surfaces need to be cleaned with the same priority as spills on bare soil. Although chemical spills on concrete do not drain into soil, it can be spread by rainwater to pollute the nearby environment. Evaporation rates of chemical spills on concreted surfaces are also high, which pollutes the air and atmosphere with greenhouse gasses and carcinogens that effects human health

3.4 Waste Disposal

- Wastes generated as a result of HCS spill clean-up must be disposed as hazardous waste.
- Contractors removing hazardous waste from Medupi Construction Site must have prior approval from the TM Environmental Department by submitting the Hazardous Waste Removal Checklist (200-112512).
- Waste manifest must be submitted to the TM Environmental Department within 24hrs and the safe disposal certificate for waste removed from site must be submitted within 90 days after the waste removal.

4. Process for Monitoring

4.1 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 2: KPAs/KPIs

Key Performance Area	Key Performance Indicator	Measure Frequency	Responsibility	Records
Compilation, and Maintenance of PC's Spill Assessments Register and SPCC-Plans.	SPCC-Plan and Spill Assessment Register and HCS Storage Facilities Register in place and accepted by TM Environmental Department.	Annually	Contractors (To be verified by TM EO)	PC's SPCC-Plan and Spill Assessment Register

Name	Designation
Emile Marell	Environmental Manager
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6. Revisions

Rev.	Date YYYY/MM/DD	Author (Name and Designation)	Comment / Change Description
2	2019/05/15	Mumsy Boshomane	Three yearly review, and use of new document template: Template Revision 4
1	2015/09/16	Lebogang Ramono Environmental Practitioner	Annual review
0	2012/08/29	Louis Badenhorst Environmental Practitioner	First Draft

7. Development Team

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

- Mumsy Boshomane
- Mathews Sebonego
- Sakutanya Mamabolo
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- Calvin Teffo
- Johan Koekemoer

8. Appendices

The following documents are included as appendices to this procedure:

- 200–75592: Document Self-Assessment Checklist;
- 200–80600: SPCC-Plan Template;
- 200-202801: HCS Storage Facilities Register
- 200–80599: Spill Assessment Register.

		well as their lay-down areas?				
9	3.3.4.1.	Are PCs spill kits fully stocked at all times and regular inspections conducted on the contents?				
10	3.3.4.2.	Is the spill response procedures/strategy described in the SPCC-Plan?				
11	3.3.4.2.	Does the spill response procedure include a description of the actions that will be taken to address a spill, as well as the specific on-site spill response equipment that will be used to perform each task?				
12	3.4.	Is wastes generated as a result of HCS spill clean-up disposed as hazardous waste?				
13	2.6.	Are the following records available:				
		• PC's SPCC-Plan				
		• Spill Assessment Register				
		• HCS Storage Facilities Register				
		• Incident management records				
		• Safe disposal certificates of hazardous wastes				
		• Maintenance records				
		• Training and awareness records.				
		• Training and awareness records.				
Comments:						