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## DIESEL TANKS OPERATIONAL PROCEDURE

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## SECTION 1: INTRODUCTION

Diesel tanks are playing an integral part in storing and supplying energy to the production works. However, diesel tanks can also pose a safety risk if not properly designed and maintained. One important approach of diesel tanks that helps to mitigate these risks is through following the operational procedure. In this document, we will explore the reasons why diesel tanks need to have an established operational procedure, and the importance of following all the actions enlisted thereof. By understanding the role of operation procedure, it will ensure safety of all personnel interacting/ or working around the diesel tanks area.

### 1-1 PURPOSE

- To provide safe and legally compliant means of storing and handling diesel tanks.
- To ensure sufficient storage and avoid supply disruptions.
- Minimise operating and maintenance costs.
- Maximise efficiency and minimise emissions.
- To maintain consistent supply of diesel fuel to and out of the tank(s):
  - ✓ At the correct viscosity (temperature).
  - ✓ At the correct pressure.
  - ✓ Insufficient volume.
  - ✓ With minimum impurities.

### 1-2 SCOPE

This procedure applies to all workers, contractors and visitors, but specifically is within the job scope of the Diesel Tanks Operator and his / her Assistant.

## SECTION 2: OBJECTIVES

- To establish guidelines for responsible operation, inspection and preventative maintenance of the diesel storage tanks.
- To ensure an improvement of the diesel storage tanks in the following aspects:
  - ✓ Technical.
  - ✓ Health and Safety; and
  - ✓ Maintenance.

## SECTION 3: RESPONSIBILITIES

a) The Manager is responsible for:

- Ensuring this procedure is implemented and maintained.
- Monitoring the implementation of this procedure and compliance.

b) The Diesel Tanks Operator is responsible for:

- The inspection each day, at least once per shift.
- Report immediately any spills or failures at the diesel storage tanks.

c) The Supervisor is responsible for:

- Designating the fuel specialist and ensuring management of the fuel tanks.
- Labelling, or directing labelling, of tanks according to Material Safety Data Sheet (MSDS) requirements.

d) The Site Health, Safety and Environment (HSE) Co-ordinator is responsible for:

- Managing spills and maintaining records.
- Ensure safety training has been conducted.

## SECTION 4: POTENTIAL HAZARDS AND INJURIES

- Skin irritation
- Eye damage
- Inhalation of fumes
- Muscle Strains
- Fire/ Explosion

## SECTION 5: PREPARATIONS

- TOOLS: Gloves, Goggles, Protective Clothing, Rubber Boots. Record book for Inspection.
- HAZARDS: Loss of containment (bund failures), leaks, spills, explosion, etc.
- REQUIREMENTS: Ensure that all the personnel are aware of and knowledgeable in this operation procedure and trained in handling and storage of hazardous goods associated.

## SECTION 6: PRECAUTIONS

- Only authorised personnel allowed in the premises.
- Do not handle fuels near ignition sources.
- Do not allow spills to enter stormwater drains or watercourses.
- Personal protective equipment (PPE) is to be worn at all times when handling fuel.
- No smoking.
- No fires or open flames.
- No mobile devices to be used at the diesel tanks area.

## SECTION 7: REFUELLING DIESEL TANKS

The following actions will be followed during refuelling of the diesel tanks:

- Note that during refuelling of the diesel tanks, no concurrent diesel pumping shall take place. All the outlet valves must be completely closed.
- The level of the tanks must be recorded and the required volume of fuel in litres must be calculated. This will also minimise the possibility of overfilling.
- The reading on the main meter must be recorded before fuel is transferred and again once the transfer is completed. Both the Delivery Personnel and Diesel Tanks Operator must witness and agree to these readings and counter sign the record sheet. The record sheet must also indicate the date, time, operators' names and signatures and comments if something happened like a spill, etc.
- During the start of the refuelling process, the pumping rate must be kept low. This is done in order to check that the diesel is coming to the tank and to get any air out of the system. It is also to prevent an inrush force on the system. After confirming the diesel is going to the tank, the pumping rate must be increased as specified.
- The operator must constantly monitor the system and especially the fuel level. As it approaches the full level, the pump speed should be reduced and as it gets full, the flow should be stopped. The reverse process must then be followed, all the valves must be closed, and the snap-on nozzle removed.

## SECTION 8: SPILLAGE CONTAINMENT

### 8-1 DURING SPILLAGE EVENT

If during operation or during refuelling, a leak occurs and it is detected immediately, the Diesel Tanks Operator must take the following actions:

- If a fire stop system is in place, it must be activated as it will interrupt the power supply to all pumps and close all valves.
- If such a system does not exist, power supply must be isolate. Start closing the valves from the closest point from where the spill originated.
- If not inside a bunded area, the spill must be contained to as small as possible area by means of special product provided in the spill kit.

What to do when spillage occurred?

The first step is to drain the bulk of it, through the draining sump, into suitable containers for later disposal. This diesel must not be pumped back into the tanks as it is now contaminated with impurities such as dirt. It will only put unnecessary strain on filter and will reduce their lifetime drastically as they are not intended for this purpose. The waste must be removed as soon as possible to eliminate further risk of spillage and fire.

Do not use water to rinse out the bunded area, but rather use rubber squeezes to work the diesel towards the sump. For any diesel still left, old rags or special materials supplied in a spill kit can be used to soak up the diesel. These must be put in durable Polyvinyl Chloride (PVC) bags for disposal. These bags will also be found in the spill kit and must not be put out with the general waste but must be disposed of by specialist. The cleaner must wear protective clothing, rubber boots, overalls, rubber gloves etc. The Diesel Tanks Operator should be trained by the supplier of the spill kit as to what the correct procedures are when to use what material.

### 8-2 BUNDED AREAS

The first line of defence against spillage is the bund walls/ bunded area. The inside of the bunded area must be sealed properly to prevent any spill from seeping through the floor.

### 8-3 GENERAL

The spill kit must be kept close to each of the tanks refuelling points. They must be easily accessible and all operating personnel must have received appropriate training on how to use the spill kit and its items. The training must not only be theoretical but also practical. On a monthly basis, practice drill must be undertaken during which some of the spillage scenarios is acted out. It is important to keep practicing and refreshing their memory on the procedures.

## SECTION 9: REFERENCES AND DOCUMENTS

Petroleum Products Act, 1977 (Act No. 120 of 1977)

National Environmental Management Act, 1998 (Act No. 107 of 1998)

Gas Act, 2001 (Act No. 48 of 2001)

Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)

National Energy Regulator of South Africa (NERSA)