

# EMERGENCY PREPAREDNESS, RESPONSE AND FIRE MANAGEMENT PLAN

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## 1. PURPOSE

The purpose of the Emergency Preparedness and Response Plan is:

- » To assist contractor personnel to prepare for and respond quickly and safely to emergency incidents, and to establish a state of readiness which will enable prompt and effective responses to possible events.
- » To control or limit any effect that an emergency or potential emergency may have on site or on neighbouring areas.
- » To facilitate emergency responses and to provide such assistance on the site as is appropriate to the occasion.
- » To ensure communication of all vital information as soon as possible.
- » To facilitate the reorganisation and reconstruction activities so that normal operations can be resumed.
- » To provide for training so that a high level of preparedness can be continually maintained.

This plan outlines response actions for potential incidents of any size. It details response procedures that will minimise potential health and safety hazards, environmental damage, and clean-up efforts. The plan has been prepared to ensure quick access to all the information required in responding to an emergency event. The plan will enable an effective, comprehensive response to prevent injury or damage to the construction personnel, public, and environment during the project. Contractors are expected to comply with all procedures described in this document. A Method Statement should be prepared at the commencement of the construction phase detailing how this plan is to be implemented as well as details of relevant responsible parties for the implementation. The method statement must include the following:

- » Identification of areas where accidents and emergency situations may occur;
- » Communities and individuals that may be impacted;
- » Response procedure;
- » Provisions of equipment and resources;
- » Designation of responsibilities;
- » Communication; and
- » Periodic training to ensure effective response to potentially affected communities.

## 2. PROJECT-SPECIFIC DETAILS

The BESS is proposed to be located on Farm Kentucky, No. 206 near to the facility substation and will be up to 4ha in total extent. The general purpose and utilisation of a Battery Energy Storage System (BESS) is to save and store excess electrical output as it is generated, allowing for a timed release of the electricity to the grid when the capacity is required. BESS systems therefore provide flexibility in the efficient operation of the electric grid through decoupling of the energy supply and demand.

Both Lithium-Ion ion and Redox-flow technology are being considered for the project, depending on which is most feasible at the time of implementation. The battery will be enclosed within one or more containers or similar housing structures. Associated infrastructure includes overhead or underground MV cabling (33kV or less) to connect the BESS to the wind farm substation, and an access road (8m in width – with a 6m road surface and 1m drainage either side). An area of ~500m around the boundary of the facility substation was

assessed, to allow for the optimization of the placement of the BESS. The BESS is planned to become an integral component of the authorised WEF, allowing for the storage of additional energy and extension of the generation period of the WEF.

The infrastructure included as part of the BESS are:

- » A Battery Energy Storage System (BESS) inside containers or similar housing structures with a footprint of up to 4ha in extent. Both Lithium-Ion and Redox-flow technology are being considered for the project, depending on which is most feasible at the time of implementation.
- » An 8m wide access road to the BESS (6m wide road surface with 1m drainage on each side of the road branching off of the authorised WEF roads).
- » MV Cabling (underground or overhead) between the BESS and the substation.
- » Fencing around the BESS for increased security measures.
- » Temporary laydown area within the footprint of the BESS.

### **3. EMERGENCY RESPONSE PLAN**

There are three levels of emergency as follows:

- » Local Emergency: An alert confined to a specific locality.
- » Site Emergency: An alert that cannot be localised and which presents danger to other areas within the site boundary or outside the site boundary.
- » Evacuation: An alert when all personnel are required to leave the affected area and assemble in a safe location.

If there is any doubt as to whether any hazardous situation constitutes an emergency, then it must be treated as an Evacuation.

Every effort must be made to control, reduce or stop the cause of any emergency provided it is safe to do so. For example, in the event of a fire, isolate the fuel supply and limit the propagation of the fire by cooling the adjacent areas. Then confine and extinguish the fire (where appropriate) making sure that re-ignition cannot occur.

#### **3.1. Emergency Scenario Contingency Planning**

##### **3.1.1. Scenario: Spill which would result in the contamination of land, surface or groundwater**

###### **i. Spill Prevention Measures**

Preventing spills must be the top priority at all operations which have the potential of endangering the environment. The responsibility to effectively prevent and mitigate any scenario lies with the Contractor and the EO. In order to reduce the risk of spills and associated contamination, the following principles should be considered during construction and operation activities:

- » All equipment refuelling, servicing and maintenance activities should only be undertaken within appropriately sealed/contained or bunded designated areas.

- » All maintenance materials, oils, grease, lubricants, etc. should be stored in a designated area in an appropriate storage container.
- » No refuelling, storage, servicing, or maintenance of equipment should take place within sensitive environmental resources and associated buffer zones (where applicable) in order to reduce the risk of contamination by spills.
- » No refuelling or servicing should be undertaken without absorbent material or drip pans properly placed to contain spilled fuel.
- » Any fluids drained from the machinery during servicing should be collected in leak-proof containers and taken to an appropriate disposal or recycling facility.
- » If these activities result in damage or accumulation of product on the soil, the contaminated soil must be disposed of as hazardous waste. Under no circumstances shall contaminated soil be added to a spoils pile and transported to a regular disposal site.
- » Chemical toilets used during construction must be regularly cleaned. Chemicals used in toilets are also hazardous to the environment and must be controlled. Portable chemical toilets could overflow if not pumped regularly or they could spill if dropped or overturned during moving. Care and due diligence should be taken at all times.
- » Contact details of emergency services and HazMat Response Contractors are to be clearly displayed on the site. All staff are to be made aware of these details and must be familiar with the procedures for notification in the event of an emergency.

## ii. Procedures

The following action plan is proposed in the event of a spill:

1. Spill or release identified.
2. Assess person safety, safety of others and environment.
3. Stop the spill if safely possible.
4. Contain the spill to limit entering surrounding areas.
5. Identify the substance spilled.
6. Quantify the spill (under or over guideline/threshold levels).
7. Notify the Site Manager and emergency response crew and authorities (in the event of major spill).
8. Inform users (and downstream users) of the potential risk.
9. Clean up of the spill using spill kit or by HazMat team.
10. Record of the spill incident on company database.

### a) **Procedures for containing and controlling the spill (i.e. on land or in water)**

Measures can be taken to prepare for quick and effective containment of any potential spills. Each contractor must keep sufficient supplies of spill containment equipment at the construction sites, at all times during and after the construction phase. These should include specialised spill kits or spill containment equipment. Other spill containment measures include using drip pans underneath vehicles and equipment every time refuelling, servicing, or maintenance activities are undertaken.

Specific spill containment methods for land and water contamination are outlined below.

## **Containment of Spills on Land**

Spills on land include spills on rock, gravel, soil and/or vegetation. It is important to note that soil is a natural sorbent, and therefore spills on soil are generally less serious than spills on water as contaminated soil can be more easily recovered. It is important that all measures be undertaken to avoid spills reaching open water bodies located outside of the study area. The following methods could be used:

- » *Dykes* - Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled substance. A dyke needs to be built up to a size that will ensure containment of the maximum quantity of contaminant that may reach it. A plastic tarp can be placed on and at the base of the dyke such that the contaminant can pool up and subsequently be removed with sorbent materials or by pump into barrels or bags. If the spill is migrating very slowly, a dyke may not be necessary and sorbents can be used to soak up contaminants before they migrate away from the source of the spill.
- » *Trenches* - Trenches can be dug out to contain spills. Spades, pick axes or a front-end loader can be used depending on the size of the trench required. Spilled substances can then be recovered using a pump or sorbent materials.

### **b) Procedures for transferring, storing, and managing spill related wastes**

Used sorbent materials are to be placed in plastic bags or where unsuitable, other appropriate containers for future disposal. All materials mentioned in this section are to be available in or alongside the spill kits. Following clean up, any tools or equipment used must be properly washed and decontaminated, or replaced if this is not possible.

Spilled substances and materials used for containment must be placed into empty waste oil containers and sealed for proper disposal at an approved disposal facility.

### **c) Procedures for restoring affected areas**

Criteria that may be considered include natural biodegradation of oil, replacement of soil and revegetation. Once a spill of reportable size has been contained, the ECO and the relevant Authority must be consulted to confirm that the appropriate clean up levels are met.

#### **3.1.2. Scenario: Fire (and fire water handling)**

##### **iii. Action Plan**

The following action plan is proposed in the event of a fire:

1. Quantify risk.
2. Assess person safety, safety of others and environment.
3. If safe – attempt to extinguish the fire using appropriate equipment.
4. If not safe to extinguish, contain fire, or where the area cannot be secured evacuate according to the evacuation procedures.

5. Notify the Site Manager and emergency response crew and authorities.
6. Inform users of the potential risk of fire.
7. Record the incident on the company database or filing register.

#### **i. Procedures**

Because large scale fires may spread very fast it is most advisable that the employee/contractor not put his/her life in danger in the case of an uncontrolled fire.

Portable firefighting equipment must be provided at strategic locations throughout the site, in line with the Building Code of South Africa and the relevant provincial building code. All emergency equipment including portable fire extinguishers, hose reels and hydrants must be maintained and inspected by a qualified contractor in accordance with the relevant legislation and national standards.

Current evacuation signs and diagrams for the building or site that are compliant to relevant state legislation must be provided in a conspicuous position, on each evacuation route. Contact details for the relevant emergency services should be clearly displayed on site and all employees should be aware of procedures to follow in the case of an emergency.

#### **a) Procedures for initial actions**

Persons should not fight the fire if any of the following conditions exist:

- » They have not been trained or instructed in the use of a fire extinguisher.
- » They do not know what is burning.
- » The fire is spreading rapidly.
- » They do not have the proper equipment.
- » They cannot do so without a means of escape.
- » They may inhale toxic smoke.

#### **b) Reporting procedures**

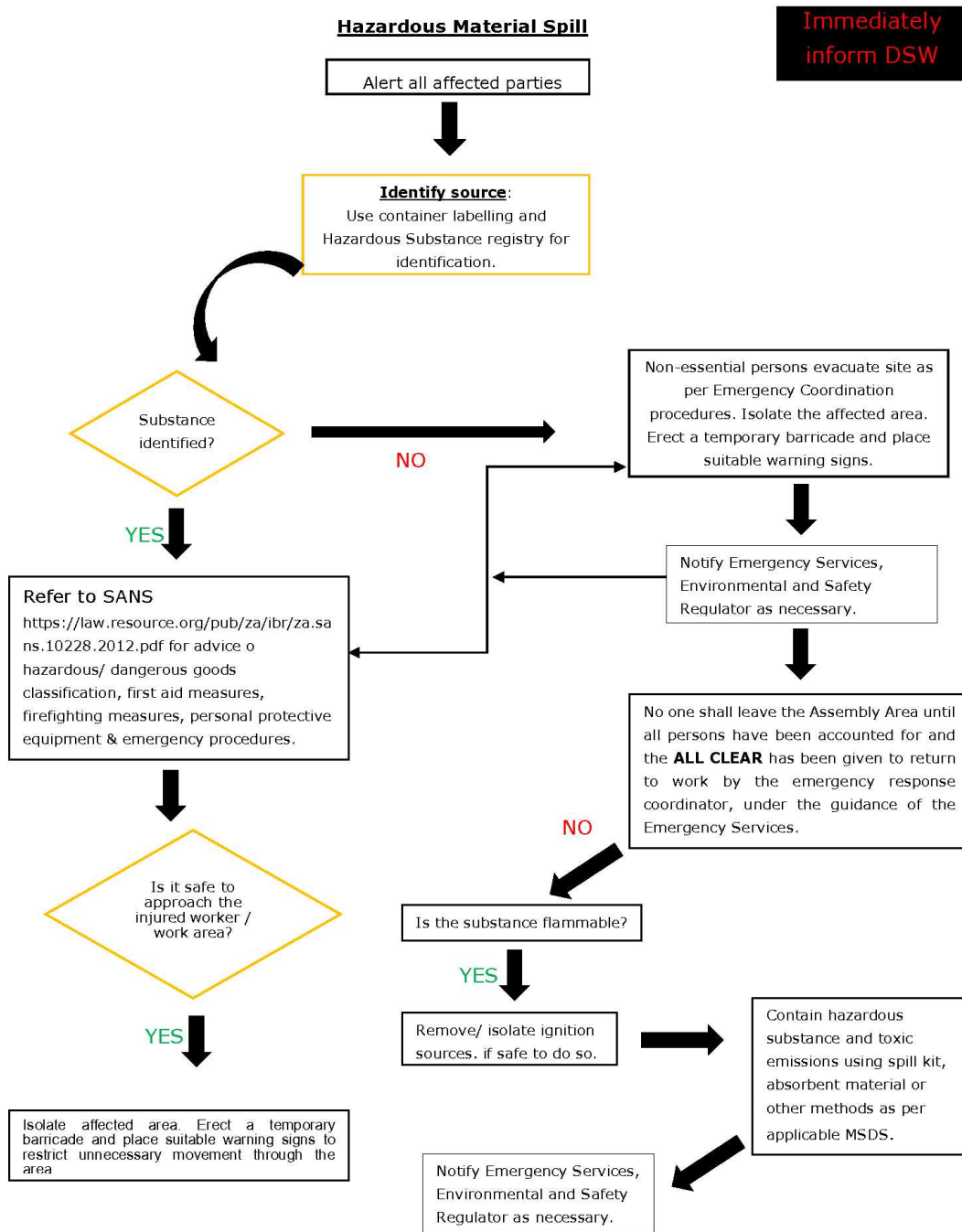
In terms of the requirements of NEMA<sup>1</sup>, the responsible person must, within 14 days of the incident, report to the Competent Authority, as well as the provincial head of department (for environmental affairs) and municipality.

- » Report fire immediately to the site manager, who will determine if it is to be reported to the relevant emergency services and authorities.
- » The Site Manager must have copies of the Report form to be completed.

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<sup>1</sup> Incident, defined in terms of Section 30 of NEMA: "means an unexpected, sudden and uncontrolled release of a hazardous substance, including from a major emission, fire or explosion, that causes, has caused or may cause significant harm to the environment, human life or property".

**SUMMARY: RESPONSE PROCEDURE**



**Figure 1:** Hazardous Material Spill

Please note: “DSW” in Figure 1 above refers to “Disaster Service Worker” (or similar role, for example the site manager or safety representative).

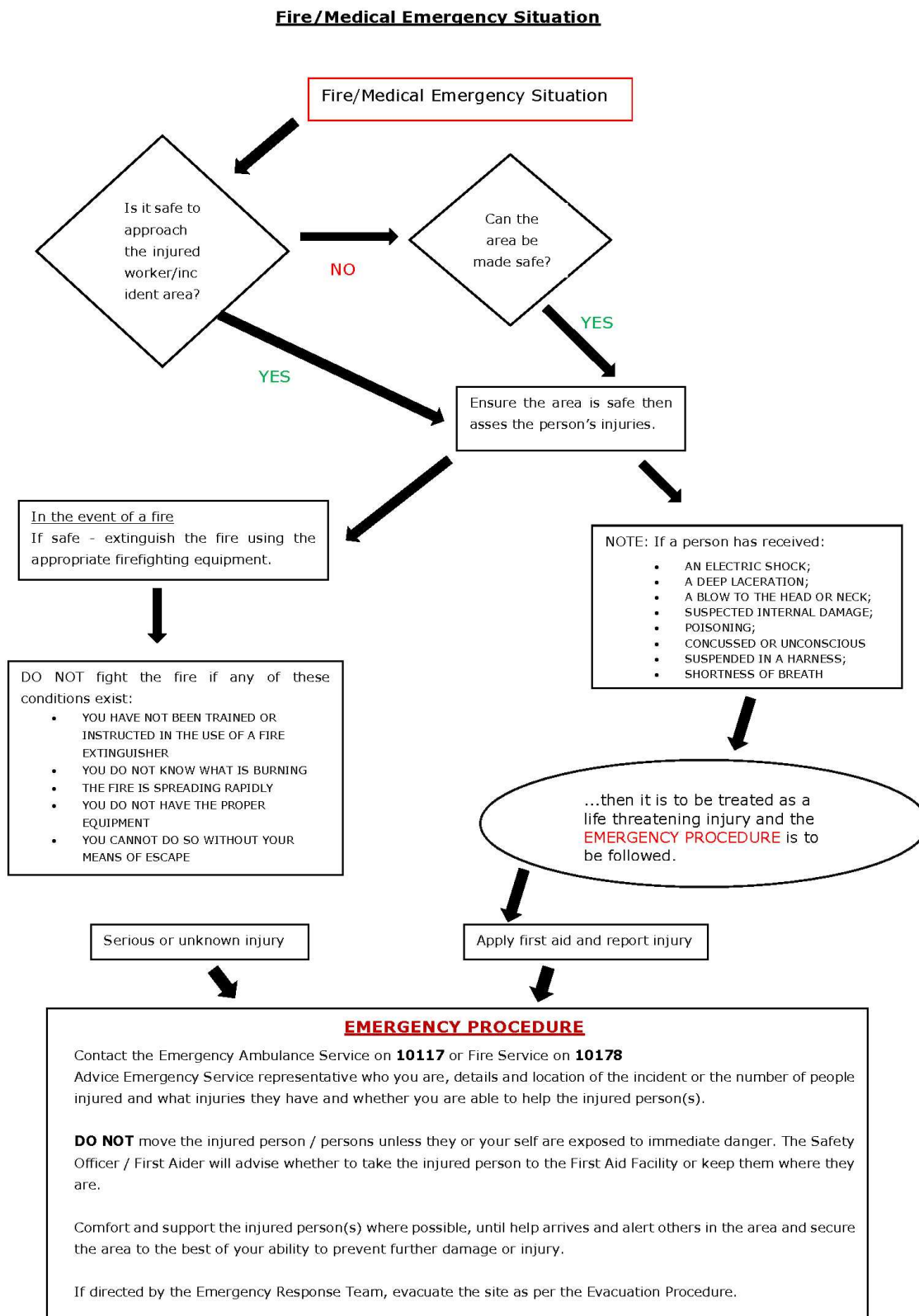


Figure 2: Emergency Fire/Medical

#### **4. PROCEDURE RESPONSIBILITY**

The Contractor's Safety, Health and Environment (SHE) Representative, employed by the Contractor or Project Company, is responsible for managing the day-to-day on-site implementation of this Plan, and for the compilation of regular (usually weekly) Monitoring Reports. In addition, the SHE must act as liaison and advisor on all environmental and related issues in conjunction with the Contractor's Environmental Officer (EO), where relevant.

The local authorities will provide their assistance when deemed necessary, or when it has been requested and/or indicated in Section 30 (8) of NEMA. The provincial authority will provide assistance and guidance where required and conduct awareness programmes.