EMERGENCY PREPAREDNESS, RESPONSE AND FIRE MANAGEMENT PLAN

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 response 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 response 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 construction detailing how this plan is to be implemented as well as details of relevant responsible parties for the implementation. The method statement must also reflect conditions of the IFC Performance Standard 1 and 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

Zevobuzz (Pty) Ltd propose to develop a hydroelectric power generation scheme in the Ash River in the Free State Province. The scheme comprises the previously authorised Lower Kruisvallei (LK) scheme and the previously authorised Middle Kruisvallei (MK) scheme. The project is located on the farm Kruisvallei 190 and farm Middelvallei 130 (referred to as the project site) situated within the Dihlabeng Local Municipality and within the greater Thabo Mofutsanyane District Municipality approximately 13km north west of Clarens. The Kruisvallei Hydroelectric Power Generation Scheme will have a development footprint of approximately 30ha situated within the project site of approximately 1104ha in extent.

It is anticipated that the following risks could potentially arise during the construction and operational phases of the project:

- Fires;
- Leakage of hazardous substances;
- Storage of flammable materials and substances;
- Flood events and overflow of wastewater retention dam;
- Accidents; and
- Natural disasters.

3. EMERGENCY RESPONSE PLAN

There are three levels of emergency as follows:

- Local Emergency: An alert confined to a specific locality within the site.
- Site Emergency: An alert that cannot be localised and which presents danger to other areas within the site boundary and/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; for a gas fire it is usually appropriate to isolate the fuel and let it burn itself out but keeping everything around the fire cold and/or damp.
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 ECO. 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 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 50m of drainage lines or sensitive environmental resources 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 personal safety, safety of others and environment.
3. Stop the spill if safely possible.
4. Contain spill to limit entering water bodies and surrounding areas.
5. Identify substance spilled.
6. Quantify spill (under or over guideline/threshold levels).
7. Notify Site Manager and emergency response crew and authorities (in event of major spill).
8. Inform users (and downstream users) of potential risk.
9. Clean up of spill using spill kit or by HazMat team.
10. Record of 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. 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 trench required. Spilled substances can then be recovered using a pump or sorbent materials.

**Containment of Spills on Water**

Spills in water can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water. The following methods could be used:

» **Weirs**

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water can still flow under the weir. Weirs are however only effective for spilled substances which float on the water surface.

» **Barriers**

In some situations barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled substance. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through.
b) Procedures for transferring, storing, and managing spill related wastes

Used sorbent materials are to be placed in plastic bags for future disposal. All materials mentioned in this section are to be available in 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)

i. Action Plan

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

1. Quantify risk.
2. Assess personal safety, safety of others and environment.
3. If safe – attempt to extinguish fire using appropriate equipment.
4. If not safe to extinguish, contain fire.
5. Notify Site Manager and emergency response crew and authorities.
6. Inform users (and downstream users) of potential risk of fire.
7. Record of incident on company database.

ii. Procedures

Because large scale fires may spread very fast in the environment 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 in line with the Building Code of South Africa and the relevant provincial building code. All emergency equipment including portable fire extinguisher, hose reels, 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 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

» 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.
SUMMARY: RESPONSE PROCEDURE

Hazardous Material Spill

Alert all affected parties

Immediately inform DSW

Identify source:
Use container labelling and Hazardous Substance registry for identification.

Substance identified?

YES

Refer to SANS

NO

Is it safe to approach the injured worker/work area?

YES

Is the substance flammable?

YES

Remove/ isolate ignition sources, if safe to do so.

Notify Emergency Services, Environmental and Safety Regulator as necessary.

NO

Contain hazardous substance and toxic emissions using spill kit, absorbent material or other methods as per applicable MSDS.

NO

Non-essential persons evacuate site as per Emergency Coordination procedures. Isolate the affected area. Erect a temporary barricade and place suitable warning signs.

Notify Emergency Services, Environmental and Safety Regulator as necessary.

NO

No one shall leave the Assembly Area until all persons have been accounted for and the ALL CLEAR has been given to return to work by the emergency response coordinator, under the guidance of the Emergency Services.

Figure 1: Hazardous Material Spill
Figure 2: Emergency Fire/Medical

**EMERGENCY PROCEDURE**

Contact the Emergency Ambulance Service on 10117 or Fire Service on 10178

Advice Emergency Service representative who you are, details and location of the incident or the number of people injured and what injuries they have and whether you are able to help the injured person(s).

**DO NOT** move the injured person / persons unless they or your self are exposed to immediate danger. The Safety Officer / First Aider will advise whether to take the injured person to the First Aid Facility or keep them where they are.

Comfort and support the injured person(s) where possible, until help arrives and alert others in the area and secure the area to the best of your ability to prevent further damage or injury.

If directed by the Emergency Response Team, evacuate the site as per the Evacuation Procedure.

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In the event of a fire
If safe - extinguish the fire using the appropriate firefighting equipment.

DO NOT fight the fire if any of these conditions exist:
- You have not been trained or instructed in the use of a fire extinguisher
- You do not know what is burning
- The fire is spreading rapidly
- You do not have the proper equipment
- You cannot do so without your means of escape

...then it is to be treated as a life threatening injury and the EMERGENCY PROCEDURE is to be followed.

Apply first aid and report injury

Serious or unknown injury

NOTE: If a person has received:
- An electric shock
- A deep laceration
- A blow to the head or neck
- Suspected internal damage
- Poisoning
- Concupisation or unconscious
- Suspended in a harness
- Shortness of breath

Ensure the area is safe then assess the person's injuries.