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FIRE MANAGEMENT & CONTROL PLAN

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Project Title:

The proposed development of a 225MW solar photovoltaic (PV) facility on several portions of farms in the Hanover district, Emthanjeni local municipality, Pixley Ka Seme district municipality; Northern Cape province.

Prepared for:



Soventix South Africa (Pty) Ltd
Unit C-24/25
Olive Grove Industrial Estate
Ou Paardevelei Road
Somerset West
South Africa

Tel: +27 (0)21 852-7333
Fax: +27 (0)21 852-5089
Cell: +(0)82 550-6672
Email: jp.devilliers@soventix.com

Compiled by:

Ecoleges Environmental Consultants cc
P.O. Box 9005, Nelspruit, 1200
P.O. Box 516, Machadodorp, 1170

Tel: +27 (0)83 644-7179
Fax: 086 697 9316
Email: justin@ecoleges.co.za

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Definitions & Acronyms

- **Class A fire** – A fire involving ordinary combustible materials such as paper, wood, cloth and some rubber and plastic materials.
- **Class B fire** – A fire involving combustible or flammable material gasses, greases and similar materials and some rubber and plastic materials.
- **Class C fire** – A fire involving energise electrical equipment where safety to the employee requires the use of electrically non-conductive extinguishing media.
- **Class D fire** – A fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.
- **Extinguisher classification** – The letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.
- **Extinguisher rating** – The numerical rating given to an extinguisher which indicates the extinguishing potential of the unit based on standardised tests developed by underwriters, laboratories etc.
- **Flash point** - the lowest temperature of a volatile material at which vapours of the material will ignite, when given an ignition source.
- **Incipient stage fire** – A fire that is in the beginning or initial stages and that can be controlled or extinguished by portable fire extinguishers, Class 2 standpipes or small hose system without the need for protective clothing or breathing apparatus.
- **Class 1 liquids are divided into three classes:**
 - **Class 1A** shall include liquids having flashpoints below 22.8°C and having a boiling point below 37.8°C;
 - **Class 1B** shall include liquids having flashpoints below 22.8°C and having a boiling point at or above 37.8°C;
 - **Class 1C** shall include liquids having flashpoints at or above 22.8°C and below 37.8°C.
- **PPE** – Personal Protective Clothing.

1. Introduction

The purpose of this document is to define the protocols relating to Fire Protection & Management for various potential fire sources.

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2. Actions to be taken

Upon discovering a fire:

- Attempt to extinguish the fire with a proper fire extinguisher and without endangering any life.
 - Alert camp / office work force by breaking the nearest alarm assembly point to sound the alert horn or siren.
 - If fire is beyond the competencies of Soventix employees and / or its agents, help from the municipal Fire Department must be requested.
- When hearing the emergency siren or horn evacuate rooms, close doors and windows, and move to the nearest Emergency Assembly Points.
 - All missing employees, sub-contractors and residents to be searched for by the Emergency Rescue Team.

3. Sub-contractors and suppliers

- Each building shall be fitted with a fire extinguisher, which shall be of the BFC (bromochloroflouromethane) type manufactured to BS 1721 and suitable for types A, B, C & D fires
- The extinguisher shall not contain less than 2.5kg of extinguishing liquid and shall be fitted to the walls or suitable positions by means of brackets. They shall be freshly charged, properly maintained and seals unbroken.
- At least one such fire extinguisher shall be provided per 50 square meters floor area or part thereof and at least one per building.
- In addition to the above a Fire Risk Survey is to be conducted by an AIA-approved Inspectorate Authority, and recommendations shall be implemented accordingly.

4. Resources

Final allocation for the following areas will be as per plot-plans of each area and will be posted in each area.

5. Technical integration

- Soventix shall take all necessary precautions to be pro-active with regards to fire prevention.
- Smoking will be permitted in designated areas only which will be demarcated, equipped with fire extinguishers and ash trays as well as the necessary signage.
- No open fires will be permitted in any area under the control of Soventix.
- Grass and other vegetation in the vicinity of buildings shall be cut at regular intervals to reduce fire hazards – over and above the ongoing sheep grazing control measures.
- Adequate fire breaks shall be cut and maintained around the perimeter of the solar PV facility and key infrastructure within its boundaries.
- All fire suppression equipment will be inspected at regular intervals by trained appointed employees and records will be kept for inspection by inter alia the ECO, IEA & Health & Safety appointees.

- Soventix and / or its sub-contractors' safety (or SHEQ) representatives will keep a consolidated record of location of fire extinguishers, maintenance received and other matters relating to the condition and maintenance of extinguishers.
- Whenever a fire, a gas leak or serious injury occurs, the supervisor must be informed and will contact the Safety (or SHEQ) Manager, who must be informed of the following:
 - Type of emergency;
 - Location;
 - Reporter's name;
 - Status of fire, leak or injury.
- All personnel are expected to assist in one of the following ways, where applicable:
 - Extinguish the fire as far as possible;
 - Sound the alarm and spread awareness of the fire as far as possible;
 - Assist the injured where possible (do not administer First Aid if you are not appropriately trained and certified to do so);
 - Avoid creating panic;
 - Shut down all spark producing equipment in use;
- When the fire or gas release alarm sounds, all personnel must comply with the following procedures:
 - All moving vehicles and plant must pull over to the verge of the road, stop and turn engines off. Keys are to be left in the ignitions.
 - In the case of a run-away veld fire, vehicles must move swiftly to a safe area and not left in harm's way.
 - All confined space, safe work, hot work and excavation permits are suspended until otherwise directed by the Safety Department.
 - All employees are to stop work, turn off equipment and walk to the nearest Emergency Assembly point.
 - The work shall not resume until the "all clear" has been given by the Safety Department.
- Fire detectors, alarms and fire extinguishing equipment appropriate to the location and type of fire envisaged.
 - These items shall be regularly maintained and inspected.
 - Each item will have an up-to-date register.
- There must always be a nucleus of personnel trained in fire-fighting and in the use of fire-fighting equipment such as respirators.
 - These personnel shall be under the supervision of a person experienced in fighting fires on construction sites.
 - The nucleus of fire fighters and supervisors shall be effective within 28 Days after commencement of construction (includes clear & grub activities & site establishment).
- Soventix will provide and maintain at each of the work fronts a fire-fighting team, including at each of these areas a diesel-powered vehicle equipped with a water tank of minimum capacity of 10 000 litres, portable pumps, suction and 100m of delivery hose

with suitable couplings, dry powder extinguishers, fire beaters, breathing apparatus and other necessary equipment, tools, suitable Protective Clothing (PPE) etc.

- The fire-fighting equipment & services shall be maintained in a good and ready state and shall be available on a continuous basis for each front, together with an abstraction point for the water tanker.
- Soventix will institute a warning and call out system to ensure that the fire-fighting teams and equipment can concentrate on a fire effectively, and in appropriate manner, in the shortest possible time.
 - Notices in English and any other relevant applicable languages shall be displayed giving instructions as to how the service can be summoned.
 - The warning and call-out system shall be incorporated in the Soventix site Emergency Procedure.
- The effectiveness of the services shall be **tested at least quarterly** or at any point in time as decided by the Engineer.
- No open flames will be permitted within 50 feet of paint shops, gasoline storage, or similar flammable liquids or gasses, fuel dispensing vehicles or while refuelling, garage or similar occupancies or activities in a similar hazardous environment.
- All electrical cords are fitted with non-conductive plugs. Cords must not be spliced or draped with nails, metal objects or rafters.
- Non-essential electrical equipment and appliances must be unplugged when not in use. All electrical service removals, alterations and equipment installations are performed by an authorised appointed electrician.
- Flammable liquids are handled and stored in accordance with manufacturers Safety Data Sheet requirements.
 - Sources of ignition are prohibited near these stores.
 - Do not use any flammable liquids for cleaning purposes.
 - The use of gasoline and similar flammable products are prohibited. They must have a flame arrestor and pressure relieve device.
 - Supplies of flammable liquids are stored in approved cabinets at a safe distance from heating elements and other flammable materials.
 - All containers are tightly sealed and stored.
 - All bulk dispensing containers for flammable liquids must be earthed and provided with a grounding strap for the containers filled from the dispenser.
 - Drums used for dispensing flammable liquids must be equipped with approved self-closing faucets and approved automatic release valves.
- When storing materials, ensure clear aisle space is maintained as approach lanes to fire-fighting equipment, sprinkler control valves, fuse boxes and switch panels.
 - In no case are materials piled higher than 24 inches below sprinkler heads or electric light fixtures.
- Self-closing metal containers plainly marked with name of contents are to be used for the separate disposal of oil and paint soaked rags, waste paper shavings and other flammable materials.
- Only approved metal containers are to be used as waste receptacles.
- Cylinders containing compressed or liquefied gas must not be dropped or exposed to severe impact.
 - They must be isolated from open flames, heat and direct sunlight.
 - Valves and connections are kept free of mineral oil and greases and are separated from welding leads, spark producing equipment and electric leads.
- Cylinders containing acetylene, chlorine, sulphur dioxide and liquefied petroleum or fuel are kept upright and secured to prevent damage and separation of ingredients with appropriate danger signage being posted.

- Gas cylinders must be separated as such and also when empty they must be stored separately from the full cylinders
- The valves of all gas cylinders must be closed and protective caps must be installed prior to movement, unless cylinders are secured in an upright position.
 - Valves are shut off at the cylinder and not at the dispensing tip. Suitable keys must be attached to cylinders when in use.

6. Communication roles and responsibilities

Party	Role	Responsibility in respect of this contract	Communication
Managers & Supervisors	Implementation of requirements and monitoring	Must ensure personnel involved are educated, trained and appointed	To all relevant
Area supervisors		Ensure inspections on equipment are done and documentation is available	To Safety Department

Awareness and induction training will be held to communicate the procedures and protocol of fire-fighting as outlined above.