**MD of Taber Solar Project Emergency Response Plan Template**

(Microgen – Less than 5 MW projects)

**Project Name**

**Project Land Location**

**Project Contact Person and number**

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**1. General Information**

The purpose of this plan is to….

**1.1 Project Description**

Please list detailed information about the project…

**1.2 Builder & Operator**

|  |
| --- |
| **Contact Information** |
| Primary Contact |  | Cell Phone: | Email: |
| Secondary Contact |  | Cell Phone: | Email: |

**1.3 Emergency Services**

The project site is within “ “number of kilometers from the nearest Police, Fire and EMS.

**1.4 Site Access**

 ***1.4.1 Site Driveway Map***

Please list access points into the facility, please include TWP or RR road numbers or attach the plan to the end of the document.

**2. Site Safety Plan**

Do you have a site specific safety plan? If yes, please enter the info here.

**3. Emergencies**

 **3.1 Emergency Services Authority**

The project’s main contact will be responsible for overseeing emergency services compliance.

Emergency response contacts are as follows: (Please fill in)

|  |
| --- |
| **Emergency Contacts** |
| **Police/ Fire Department/ Emergency Medical Services (EMS)** | Phone: 911 |
|  | Phone:  |
| **Local Hospital** | Phone:  |
| **Local Non-Urgent Care Clinic** | Phone:  |

**3.2 Communication and Training Procedures**

All employees, contractors and subcontractors must receive safety training before they begin work onsite. This training will include pertinent information regarding hazardous material and fire prevention. The primary contact listed above will be responsible for ensuring that all personnel receive this training.

**4. Fire Prevention**

**4.1 Purpose & Need for Fire Prevention Plan (FPP)**

• Eliminate the potential risks and/or causes of fires

• Prevent loss of life and property by fire

• Educate employees to promote a safe environment

• Be prepared should a fire occur

• Outline a procedure to follow for the safety of the individuals on site at the time of the occurrence

• Identify risk factors and hazards

• Set up proper storage procedures, training, and identification of personnel responsible for maintaining and servicing the equipment and systems on site that are used to prevent and/or control a fire.

**4.2 Responsibilities and Procedures**

Safety is everyone's responsibility on site. All employees are to be trained and should know how to prevent and respond to a fire emergency. All employees must:

• Complete an on-site training program identifying the fire risks for the project site

• Know the protocol and follow emergency procedures should an event occur

• Review and report potential fire hazards to the Onsite Primary Contact.

***4.2.1 Understanding Conditions Associated with Photovoltaic Solar Arrays***

Photovoltaic (PV) solar arrays present a unique challenge for fire fighters. Unlike a typical electrical or

gas utility, a PV array does not have a single point of disconnect. Whereas there are disconnects that will de-energize select parts of the system, as long as the PV panels are illuminated, the individual strings of PV panels are energized and capable of producing up to 1,000 volts. This is not just limited to PV panels being illuminated by the sun; illumination by artificial light sources, such as fire department lights, or the light from the fire itself are capable of producing electrical power sufficient to cause a lock-on hazard (Source: UL Firefighter Safety and Photovoltaic Installations Research Project, November 29, 2011). Below is a summary of the hazards associated with firefighting activities in photovoltaic solar arrays:

* Shock hazard due to the presence of water and PV power during suppression activities
* Outdoor rated electrical enclosures may not resist water intrusion from the high pressure stream of a fire hose.
* PV panels damaged in the fire may not resist water intrusion.
* Damaged conductors may not resist water intrusion
* Shock hazard due to direct contact with energized components
* No means of complete electrical disconnect

Due to the dangers presented above, it is not typical to practice fire suppression by means of water inundation within solar PV arrays.

**4.2.2 Small Fires**

Small fires that are in the early stage and can be controlled with a fire extinguisher. An example would be a small trash can fire. In the event of a small fire at the project:

• The person discovering the fire should immediately call the onsite supervisor, call 9-1-1 and notify the appropriate personnel.

• All non-essential personnel should be removed from the hazard area.

• Fire extinguishment with a fire extinguisher or other means should be attempted if the person has been trained in the use of fire extinguishers and it is safe to do so without placing themselves in danger.

• Evacuate to the muster point or designated meeting area.

• All work in the area should cease immediately, take steps to safely shut down equipment, exit the evacuation area, and report to the muster point or designated meeting area.

• No employees are permitted to re-enter the site until the incident commander deems it safe and will issue an "All Clear" when it is safe to do so.

**4.2.3 Large Fires**

In the event of a large stage fire at the project:

• The person discovering the fire should immediately contact the onsite supervisor. If the fire cannot be readily extinguished, call 9-1-1 to report the fire.

• All personnel should be removed from the immediate danger area in anticipation of an evacuation.

• The Onsite Primary Contact will respond to the scene and ensure that the fire department has been dispatched. They will then determine evacuation needs, recruit/dispatch employees to assist with the evacuation and issue the following statement over the radio: "Attention, there is a fire emergency at (location name). Please evacuate (the affected area) and report to (designated meeting area).

• At this point, all employees in the affected area will stop work immediately, take steps to safely shut down equipment, exit the evacuation area, and report to the designated meeting area.

• In this scenario, fire extinguishers are to be used for escape purposes only.

• The Onsite Primary Contact will take the necessary steps to ensure that no employee re-enters the evacuated area until the Fire Department arrives and assumes command.

• No employee is required or permitted to place themselves in harm's way in order to facilitate extinguishment, evacuation, or rescue. All rescue operations will be performed by trained professionals upon their arrival.

• The Onsite Primary Contact will issue an "All Clear" only when the Fire Department informs them that it is safe to do so.

**4.2.4 Grass / Wildland Fire Procedures**

The site should be free of combustible vegetation with only a ground cover of maintained vegetation adjacent and beneath the solar racking. Flying embers from off-site fire may inundate the area during fire events. The modified fuel areas and project features will resist ignition from ember showers. Ignition of the ground cover could result in a fast moving, but lower intensity fire that burn in a patchy manner on the site beneath the modules. This type of fire would be relatively short- duration as vegetative fuels are consumed rapidly. There would not be a sustained source of heat and or flame as there would be with surrounding wild fires.

In the event of a vegetation fire under or near the modules or inverters:

• DO NOT attempt to extinguish the flames with water or other chemicals as an electric shock or arc could occur.

• If possible, safely attempt to shut down power at the inverter using the DC disconnect

• Let the fire burn vegetation and self-extinguish

• If flames continue away from modules or inverters, attempt to extinguish flames.

**5. Fire Department Access**

**5.1 Internal Site Access Roads**

Insert map of road networking and access aisles inside the project fence line if applicable.

**6. Controlling Hazards & Prevention Practices**

All employees, contractors and sub-contractors need to be educated on fire hazards and what procedures to follow to prevent and control fire hazards. Employees need to know how to respond to the fires those hazards might cause.

**6.1 Class “A” Combustibles**

These combustibles consist of common materials (wood, paper, cloth, rubber, and plastic) that can act as fuel and are found on most work sites.

To handle Class A combustibles safely to prevent fires:

• Dispose of waste daily (i.e. cardboard, wood pallets, packing materials etc.)

• Use trash receptacles with covers

• Keep work areas clean and free of combustible materials

• Store materials in the proper storage containers

• Do a periodic check of the job site to make sure combustibles are being handled correctly

Water, multi-purpose dry chemical (ABC) and halon are approved fire extinguishing agents for Class A Combustibles.

**6.2 Class “B” Combustibles**

These combustibles include flammable and combustible liquids (oil, grease, tar, oil-based paints and lacquers) flammable gases, and flammable aerosols.

To handle Class B combustibles safely to prevent fires:

• Use only approved pumps (with suction from the top) to dispense liquids from tanks, drums, barrels, or similar containers (or use approved self-closing valves or faucets)

• Do not dispense Class B flammable liquids into a container unless the nozzle and container are electrically interconnected by contact or bonding wire. Either the tank or container must be grounded.

• Store, handle, and use Class B combustibles only in approved locations where vapors are prevented from reaching ignition sources such as heating or electric equipment, open flames, or mechanical or electric sparks

• Do not use a flammable liquid as a cleaning agent inside a building (the only exception is in a closed machine approved for cleaning with flammable liquids)

• Do not use, handle, or store Class B combustibles near exits, stairs, or any other areas normally used as exits

• Do not weld, cut, grind, or use unsafe electrical appliances or equipment near Class B

combustibles

• Do not generate heat, allow an open flame, or smoke near Class B combustibles

• Know the location of and how to use the nearest portable fire extinguisher rated for Class B fire

**6.3 Class “C” Combustibles**

Class C fires are fires that involve energized electrical equipment. In the event of a Class C fire, ALWAYS de-energize the circuit supplying the fire, and then use a non-conductive extinguishing agent such as carbon dioxide or Halon 1211. A multi-purpose dry chemical (ABC) extinguisher can also be used on Class C fires.

Do not use water, foam or other electrically conducive agents when fighting electrical fires. Once the electricity is shut down to the equipment involved, the fire generally becomes a standard combustible fire.

**7. Employee Training & Education**

Personnel shall be trained in the practices of the fire safety plan relevant to their duties. Construction and maintenance personnel shall be trained and equipped to extinguish small fires to prevent them

from growing into more serious threats. Confirm all employees understand the function and elements of

the fire safety plan, including types of potential emergencies, reporting procedures, evacuation plans, and shutdown procedures. Review any special hazards that might occur at the site, such as flammable materials, fuel storage, toxic chemicals, and water reactive substances.

Fire safety training should occur during the site safety training. Every employee must take this training before starting work. Training to include:

• Employee roles and responsibilities

• Recognition of potential fire hazards

• Alarm system and evacuation routes

• Location and operation of manually operated equipment (fire extinguishers)

• Emergency response procedures

• Emergency shutdown procedures

• Good fire-prevention housekeeping practices and equipment maintenance

The project’s site safety person as well as the Onsite Primary Contact are responsible for fire safety training.

**7.1 Use of Portable Fire Extinguishers**

• A minimum of one portable fire extinguisher should be provided within 65 meters of anywhere in the work area during construction or heavy maintenance

• Fire extinguishers should be inspected monthly

• Fire extinguishers should not be obstructed and should be in conspicuous locations

**7.2 Site Maintenance & Housekeeping**

• Combustible material should not be stored in mechanical rooms or electrical equipment rooms

• Storage is not allowed in electrical equipment rooms, or near electrical panels

• Electrical panel openings must be covered

• Power bars must be plugged directly into an outlet and should be for temporary use only

• Extension cords and flexible cords should not be substituted for permanent

**8. Equipment Fire Safety**

• All internal combustion engines, both stationary and mobile, shall be equipped with spark arresters. Spark arresters shall be in good working order

• Light trucks and cars with factory-installed (type) mufflers shall be used only on roads where the roadway is cleared of vegetation. These vehicle types shall maintain their factory-installed (type) mufflers in good condition

• Equipment parking areas and small stationary engine sites shall be cleared of all extraneous flammable materials

• The project proponent shall make an effort to restrict the use of chainsaws, chippers, vegetation masticators, grinders, drill rigs, tractors, torches, and explosives to periods outside of the official fire season. When the above tools are used, water tanks equipped with hoses, fire rakes, and axes shall be easily accessible to personnel.

**9. Emergency Response**

Project personnel will meet with local emergency response groups to review the Fire Safety Plan, discuss the type of work taking place, duration of project schedule and emergency procedures.

The following course of action should be taken if an emergency situation develops:

• Evacuation procedures and assembly are contained in the Evacuation plan, which will be posted in all office trailers. Maintain site security and control.

• Notify proper emergency services for assistance. Call 9-1-1. Emergency numbers should be posted throughout the site.

• Notify all personnel on site through use of radio or other communication devices.

• Once emergency personnel have been notified, an employee will then be designated to meet the emergency personnel at the gate entrance and then guide them to incident location.

**10. Plans & Maps**

1.4.1 Insert your Site Plan Drawings here

4.4.1 Insert your Internal Site Access Roads map here