16798 West Bernardo Drive
San Diego, CA 92127-1904
858.622.4040
swinertonrenewable.com

Swinerton Renewable

Emergency Response Plan - Construction

Spotsylvania Solar Energy Center – 500 MWac

Spotsylvania County, VA

September 24, 2018
Project number 17059076

Prepared for:
sPower

Prepared by:
Swinerton Renewable Energy
San Diego, CA

Joseph Taulane
Project Engineer
jtaulane@swinerton.com

Table of Contents

Appendices

1 Overall Site Plan and Site Access
2 Crisis Management Plan
3 Site Specific Safety Plan

1. General Information – Construction and Operation

The purpose of this plan is to discuss the procedures that will be implemented in the event of an emergency during the construction of the Spotsylvania Solar Energy Center.

1.1 Project Description

On behalf of sPower, Swinerton Renewable Energy is proposing to construct a 500 megawatt-AC photovoltaic (PV) single-axis tracker system. The final Project consists of three non-contiguous project sites (Site A, B, and C) that total approximately 6,350 acres, of which approximately 3,500 acres will be developed for the Project. The remaining 2,850 acres will be set aside as open space in Spotsylvania and Orange Counties, Virginia. It is located between Orange Plank Road on the north and W. Catharpin Road on the south. The approximate center of the site is located approximately 3.35 miles east of Mine Run, Virginia in Spotsylvania County, Virginia.

The Project's primary components include approximately 1,646,800 PV modules mounted on a single axis tracking system and 161 solar inverters. The racking system foundations will utilize driven posts that would not require concrete. Other Project components include electrical cables, conduit, electrical cabinets, switchgears, step-up transformers, inverters, SCADA systems and metering equipment. The solar facility would be fenced and seeded in a low growth seed mix to reduce storm water runoff and erosion. **See Appendix 1:**

1.2 Project Team

Swinerton Renewable Energy has the Engineering, Procurement, and Construction contract for the Spotsylvania Solar Energy Center. The Swinerton project team will consist of:

Table 1: Project Team Contact Info

Project Manager	Brian Ewing	(213) 792-1683	bewing@swinerton.com
Superintendent	David Dzeima	(731) 441-1220	ddzeima@swinerton.com
Engineering and Permitting Manager	Donny Gallagher	(916) 205-7220	dgallagher@swinerton.com

1.3 Site Access

1.3.1 Site Address

Spotsylvania Solar Energy Center is in Spotsylvania County, VA. The address for the project is has not been established yet. The center of the project is located at latitude and longitude 38.24344° N and 77.77514°

1.3.2 Site Driveways

The Project is anticipated to have several site access locations, as the Project Site is not entirely accessible from a single site access location due to wetlands, streams, and topographical constraints. Primary access for Site A will be provided via Orange Plank Road (State Route 621) on the north and

West Catharpin Road on the south; primary access for Site B will be provided via Post Oak Road (State Route 606) on the north; and primary access for Site C will be provided via West Catharpin Road on the north and Post Oak Road (State Route 606) and Chewing Place on the south. Site access locations will be improved and maintained to accommodate Spotsylvania County Fire, Rescue, and Emergency Services. Each access will be a 20-foot wide driveway with a 20-foot wide locked security gate. The security gate would be locked with a punch code key lock box, which would be dispatched to EMS services in the event of an emergency. This will be installed during construction and will remain for operation. Refer to section **4.4.1 Internal Site Access Roads and Driveways** for internal road and driveway specifications.

2 Site Specific Safety Plan

A Site Specific Safety Plan is included as **Appendix 3**

3 Crisis Management

Refer to the Spotsylvania Solar Energy Center Crisis Management Plan in **Appendix 2** for site specific information regarding who to contact in the event of an emergency.

3.1 Emergency Services Authority

The project's onsite superintendent will be responsible for overseeing emergency services compliance. His duties will include ensuring that the measures in this plan are complied with, any and all agencies are properly notified in the event notification is required, and that all required plans and reports are prepared and submitted in a timely manner.

The Swinerton project superintendent will be the emergency point of contact for the Spotsylvania Solar Energy Center. The superintendent's contact information is as follows:

David Dzeima
Cell: (731) 441-1220
Office: (858) 622-4040
Email: ddzeima@swinerton.com

The Safety Manager will be responsible for project safety during all construction activities. Along with the superintendent, the Safety Manager will ensure that the measures in this plan are complied with, any and all agencies are properly notified in the event notification is required, and that all required plans and reports are prepared and submitted in a timely manner. The Safety Manager shall arrange and assign a backup in the event of their absence.

The Safety Manager point of contact is as follow:

James Griffith
Cell: (760) 708-9585
Office: (858) 622-4040
Email: jgriffith@swinerton.com

The point of contact over seeing electrical work is as follow:

TBD: The current position is being interviewed for and will be able to provide qualifications upon the County's request.

The point of contact over seeing mechanical work is as follow:

TBD: The current position is being interviewed for and will be able to provide qualifications upon the County's request.

The point of contact over seeing excavation work is as follow:

TBD: The current position is being interviewed for and will be able to provide qualifications upon the County's request.

Emergency Response Contact(s):

Medical Facility	Address	Phone Number	Available Services	Distance from Project Site
Spotsylvania Regional Medical Center	4600 Spotsylvania Parkway Fredericksburg, VA 22408	(540) 498-4000	Emergency Services	13 miles east of Site A
Fredericksburg Medical Center (Kaiser Permanente)	1201 Hospital Drive Fredericksburg, VA 22401	(540) 368-3700	Urgent Care Services	13 miles northeast of Site A
Mary Washington Hospital	1001 Sam Perry Boulevard, Fredericksburg, VA 22401	(540) 741-1100	Emergency Services	13.23 miles northeast of Site A

County Fire and Rescue Station	Address	Phone Number	Distance from Project Site
Fire Company/Rescue Station 7 (Wilderness)	10501 Orange Plank Road, Spotsylvania, VA 22553	Fire: (504) 507-7970/7971 Rescue: (540) 507-7952/7953	3.30 miles northeast of Site A
Fire Company/Rescue Station 9 (Belmont)	7100 Belmont Road, Mineral, VA 23117	Fire: (540) 507-7974/7975 Rescue: (540) 507-7956/7957	4.30 miles southwest of Site B
Fire Company/Rescue Station 2 (Brokenburg)	11700/11701 Volunteer Lane, Spotsylvania, VA 22553	(540) 507-7942/7943	5.75 miles southeast of Site C

Fire Company/Rescue Station 5 (Chancellor)	6204 Plank Road, Fredericksburg, VA 22407	Fire: (540) 507-7966/7967 Rescue: (540) 507-7948/7949	6.55 miles northeast of Site A

Local Police and Sheriff Station	Address	Phone Number	Distance from Project Site
Spotsylvania Sheriff	9119 Dean Ridings Ln, Spotsylvania Courthouse, VA 22553	(540) 507-7200	10 miles east of Site A
Orange County Sheriff's Office	11350 Porter Rd, Orange, VA 22960	(540) 672-1200	15.4 miles west of Site C
Fredericksburg Police Department	2200 Cowan Blvd, Fredericksburg, VA 22401	(540) 373-3122	18.9 miles northeast of Site A
Spotsylvania Animal Control	450 Tv Dr, Fredericksburg, VA 22408	(540) 582-7115	12 miles east of Site A

3.2 Communication and Training Procedures

All employees and subcontractors will receive safety training before they begin work onsite. This training will include pertinent information regarding hazardous material management and fire prevention. The project's superintendent will be responsible for ensuring that all personnel receive this training.

sPower will provide site specific training to County Fire that outlines construction and operation activity, a solar facility overview (location, ingress/egress, equipment, site operation), best practices in responding to emergencies at the facility, and thorough review of construction and operation emergency response plans. County Fire will receive maps of roads and facilities to access to the site with description locations. These maps will be incorporated into training materials to ensure that County Fire and EMS providers understand how and where to access emergency situations at the Project Site.

Communication will be available at all office trailers or a wireless amplifier will be installed for safety communication at job site trailers. Construction staff will be provided with adequate communication on site including radios to team leaders that are in constant communication with staff. Since cell phone service is limited at the project site, repeaters or cell phone boosters may be installed to enhance cell phone coverage across the site.

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 Superintendent

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 1,500 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 for 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 Stage Fires

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

- The person discovering the fire should immediately dispatch someone to activate the Incident Command Team.
- All non-essential personnel should be removed from the hazard area.
- All on-site vehicles are required to carry fire extinguishers. 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 can do so without placing themselves in danger.
- The Safety Manager or his designee will respond to the scene and determine if external resources or an evacuation are necessary. In the event of an evacuation, they will recruit/dispatch

employees to assist with the evacuation and, have the Superintendent 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).

- Fire department shall be notified of incident including the nearest access point and location of fire. A site safety employee shall meet EMS services and escort the EMS response team to the incident. In the event EMS services do not respond at a single time, additional personnel shall be appointed to meet remaining EMS services at the access gate and escort them to the fire location.
- Designated meeting areas shall be established at all primary site entrances. EMS services shall be notified of designated meeting area during small stage fires.
- 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.
- The Safety Manager will then take steps to ensure that no employee re-enters the evacuated area until the Fire Department arrives and assumes command.
- The Safety Manager will issue an “All Clear” only when the Fire Department informs them that it is safe to do so.

4.2.3 Large Stage Fires

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

- The person discovering the fire should immediately contact the Safety Manager or Superintendent.
- Call 911 to report the fire.
- Fire department shall be notified of incident including the nearest access point and location of fire. A site safety employee shall meet EMS services and escort the EMS response team to the incident. In the event EMS services do not respond at a single time, additional personnel shall be appointed to meet remaining EMS services at the access gate and escort them to the fire location.
- All personnel should be removed from the immediate danger area in anticipation of an evacuation.
- Designated meeting areas shall be established at all primary site entrances. EMS services shall be notified of designated meeting area during large stage fires. The Safety Manager will respond to the scene and ensure that the fire department has been dispatched. Spotsylvania County Fire, Rescue and Emergency Management will be responding to 911 calls during construction and after construction has completed. They will then determine evacuation needs, recruit/dispatch employees to assist with the evacuation and, have the Superintendent 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 Safety Manager 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 Safety Manager will issue an “All Clear” only when the Fire Department informs them that it is safe to do so.

4.3 Vegetation Fire and Procedures

The site will be largely free of combustible vegetation with only a ground cover of maintained vegetation adjacent and beneath the solar tracker (Figure 1). Flying embers from off-site fire may inundate the Project area during fire events. The modified fuel areas and construction type and materials for all 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. The vegetation on the Gen-tie line right-of-way will be cleared around poles and access roads, where not prohibited by environmental constraints. 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.

Figure 1: Typical Ground Cover Under Solar Arrays

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

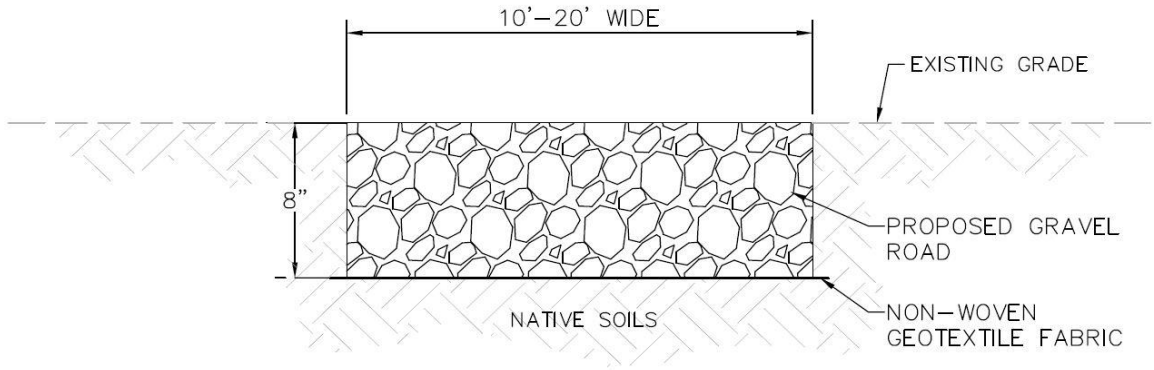
- **DO NOT** attempt to extinguish the flames with water or other chemicals as an electric shock or arc could occur.
- If possible, safely attempt to shut down power at the inverter using the DC disconnect
- Let the fire burn vegetation and self-extinguish
- If flames continue away from modules or inverters, attempt to extinguish flames.

4.4 Fire Department Access

4.4.1 Internal Site Access Roads and Driveways

The internal site access roads will consist of compacted gravel roads (see Figure 2 below). These access roads will be located to provide access to each of the sites Photovoltaic Module Inverter Station (a.k.a. power conversion stations). This is the location where the solar inverters and step up transformers will be located. Access roads located throughout the arrays are a minimum 12 feet wide and provide 50-feet turning radius and standard hammer-head turnarounds at inverter locations. These internal access roads are provided primarily for use by operations and maintenance personnel vehicles. All internal roads and crossings will be permanent and designed (at a minimum) to FAST Act standards, for EV3 class vehicles, with a rating as defined as H-20 per the VDOT IIM-S&B-86.1 guidance document.

Figure 2: Typical Site Access Road Detail



NOTES:

1. REMOVE ALL GRASSES AND ORGANICS WITHIN ACCESS ROAD AREA.
2. SCARIFY, MOISTURE CONDITION, AND RE–COMPACT EXISTING NATIVE SOILS TO 90% OF THE MATERIAL'S ASTM D–1557 MAXIMUM DRY DENSITY.
3. COMPACTION SHALL BE VERIFIED BY TESTING BY THE GEOTECHNICAL CONSULTANT.

TYPICAL SITE ACCESS ROAD - GRAVEL ROAD SECTION

N.T.S.

4.4.2 Access Aisles

From the internal access roads, access to all areas within the solar arrays is provided by access aisles. Access aisles are the clear spaces located between the individual rows of solar panels. Access aisles consist of unimproved native material and are not suitable for all emergency services vehicles. However, access aisles do provide emergency responders with access routes to all areas of the site via walking from a nearby access road or by the use of 4x4 vehicles.

4.5 Controlling Hazards & Prevention Practices

For a FPP to be effective, fire hazards need to be identified and controlled. Employees need to be educated on fire hazards associated with a PV power plant 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.

4.6 Welding & Open Flame/Hot Work

Cutting, welding, and open flame work are naturally hazardous. Welding processes may use oxy-acetylene gas, electrical current, electron beams, and heat from fuel gas. It is critical that the highest level of attention be given to these activities to prevent fires at a PV power plant.

- Cutting and welding are to be done by authorized personnel.
- Torches, regulators, pressure-reducing valves and manifold are to be UL listed or FM approved.
- Welders are to wear eye protection and protective clothing as appropriate.
- Oxygen-fuel gas systems are to be equipped with listed and or approved backflow valves and pressure-relief devices.
- Prior to open flame or hot work activity, a Fire Watch Person shall be established.

- Establish a Fire Watch Person when prior to welding, open flame or hot work activity. .
- Fire extinguishers shall be present at all times during welding and open flame/hot work.

4.7 Burning

As defined by the Virginia State Air Pollution Control Board in 9VAC5 Chapter 130-20, open burning shall not be permitted at the Project Site. sPower and its contractor shall mulch stumps, tree limbs and other woody debris where possible for use as erosion control BMPs. In the event material cannot be mulched or used on the Project Site, special incineration devices (i.e. open pit incinerators) that provide good and clean combustion performance shall be permitted, but at no time closer than 2,000 feet from any residence.

An AirBurner 2018 Model T-300 Trench Burner, or similar technology, will be deployed in designated areas during initial grading of the Project site. The following protocols will be implemented when trench burning occurs:

- A permit shall be acquired from Spotsylvania County.
- All combustible materials shall be removed within 35 feet of trench burning.
- A water truck shall be on standby.
- Trench burning shall not occur within 2,000 feet of any residence.
- Trench burners shall be equipped with fire extinguishers.
- Check wind forecasts for the day and do not burn on high wind days (sustained winds more than 25 mph) or when prohibited by Spotsylvania County Fire Department.
- Burning shall take into consideration sensitive receptors and prevailing wind direction at lower speeds (<25 mph).Burning shall cease 2 hours prior to end of work day.
- Employees that operate trench burners will be issued a hot work permit.
- Each trench burning shall be staffed by a minimum of 2 employees.
- A Fire Watch Person will be designated to monitor all trench burning activities.
- The Fire Watch Person shall remain within the immediate area of the trench burning at all times and shall not be assigned any other duties.
- The Fire Watch Person shall complete a “Hot Work Checklist” each day trench burning occurs.
- If the burn area is still producing smoke, it is technically stull burning and must be attended.

Trenches will be dug to depths indicated by the trench burner’s technological specs or Fire Marshall guidance, in order to limit exposure to wind and gusts. A blowing machine is utilized to pump air into the trench, increasing the fire temperature, and thus burning the material quickly and efficiently. This eliminates excess smoke and embers.

4.8 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.).
- No burning of these construction materials shall occur.
- Use trash receptacles with covers.

- Keep work areas clean and free of combustible materials.
- Store materials in the proper storage and recycling 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.

4.9 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.

Water should not be used to extinguish Class B fires caused by flammable liquids, as it can cause the burning liquid to spread, making the fire worse. To extinguish a fire caused by flammable liquids, exclude the air around the burning liquid. The following fire extinguishing agents are approved for Class B combustibles: carbon dioxide, multi-purpose dry chemical (ABC), halon 1301 and halon 1211. (Halon is no longer being manufactured due to its designation as an ozone-depleting substance).

4.10 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 conducive agents when fighting electrical fires. Once the electricity is shut down to the equipment involved, the fire generally becomes a standard combustible fire.

4.11 Electrical Fire Hazards

Electrical equipment is a major cause of workplace fires and may result from loose ground connections, wiring with bad insulation, or overloaded fuses, circuits, motors or outlets.

To prevent electrical fires, the following measures will be taken:

- Use only appropriately rated fuses per manufacture's specifications.
- Check all electrical equipment to ensure it is properly grounded and insulated.
- Ensure adequate spacing while performing maintenance.
- Check wiring to ensure no damage to cables or connections.

4.12 Employee Training & Education

Job site fire rules are to be posted on the project the bulletin board along with the OSHA compliance postings, first aid, and site specific project information. The bulletin board is to be located at the contractor's field office and accessible to all employees.

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 Spotsylvania Solar Energy Center, such as flammable materials, fuel storage, toxic chemicals, and water reactive substances.

Fire safety training will 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.
- Information regarding specific materials to which employees may be exposed.
- Review OSHA requirements contained in 29 CFR 19010.38, Emergency Action Plans.
- Review OSHA requirements contained in 29 CFR 1910.39, Fire Prevention Plans.
- The location of the company FPP and how it can be accessed.
- Good fire-prevention housekeeping practices and equipment maintenance.

The Swinerton Renewable Energy site safety person, as well as the Superintendents and Foreman, are responsible for fire safety training. Written documentation of the training received by each employee must be maintained.

4.13 Use of Portable Fire Extinguishers

- A minimum of one portable fire extinguisher should be provided within 200 feet of anywhere in the work area during construction.
- Fire extinguishers should be inspected monthly.
- Fire extinguishers should not be obstructed and should be in conspicuous locations.

4.14 Site Maintenance & Housekeeping

- Combustible material should not be stored in mechanical rooms, electrical equipment rooms or the SCADA buildings.
- Outside dumpsters should be kept at least 5 feet away from combustible materials and the lid should be kept closed.
- Storage is not allowed in electrical equipment rooms, or near electrical panels.
- Electrical panel openings must be covered.
- Power strips must be plugged directly into an outlet and NOT daisy-chained and should be for temporary use only.
- Extension cords and flexible cords should not be substituted for permanent.

4.15 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, and torches 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.
- All team supervisors and health and safety officials will have AED and first aid kits in vehicles.

4.16 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 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. Dial 911 or direct-dial emergency contact numbers if possible. Emergency numbers shall be posted at each office trailer.
- Notify Site Safety Manager and all affected personnel at the site through use of site radio or other communication devices.
- Once emergency personnel have been notified, an employee will then be designated to meet the emergency personnel at the point of ingress and then guide them to incident location. If emergency personnel come at different times, a secondary person will meet the subsequent crews at the ingress point.
- Only after emergency is declared over by the Site Safety Manager can all other radio communication resume.
- Prepare a summary of the incident as soon as possible and no later than 24 hours after the incident.

This FPP is in addition to Swinerton Renewable Energy's standard Safety protocol and is to be a part of daily tool box topics, reviewed regularly, and included in general safety meetings and review with Safety Manager and on site personal.

5 Severe Weather

5.1. Severe Thunderstorm and Tornado Warnings

A severe thunderstorm or tornado warning is an urgent announcement that a severe thunderstorm or Tornado has been reported or is imminent in the area and will warn individuals to take cover. Local National Weather Service office issue severe thunderstorm or tornado warnings.

Notification systems for adverse weather, which may include NOAA radio, AM/FM radio, lightning detectors, wind speed indicators, will be maintained at the project Operations and Maintenance (O&M) building and/or MET stations throughout the project site.

In addition, weather will be monitored utilizing http://www.nws.noaa.gov/

5.1.1. Thunderstorms

Upon hearing the sound of thunder, personnel are close enough to a storm to be struck by lightning. Employees will be instructed to go to a designated safe shelter immediately.
In addition:

- Crane activities will be shut down.
- Workers will be removed from elevated areas.
- If no shelter is nearby, workers will be instructed to get in a vehicle and keep the windows up.
- If indoors, unnecessary appliances will be unplugged and phone use will be strictly for emergencies.

If personnel are caught outside and no shelter is available, they will be instructed as follows:

- Find a low spot away from trees, fences, and poles.
- Squat low to the ground on the balls of your feet, place your hands on your knees with your head between them, make yourself the smallest target possible and minimize your contact with the ground.

5.1.2 Tornados

Upon the issuance of a tornado warning, employees will evacuate the job site and report to the pre-designated shelter area, to be determined prior to employee arrival. In the event employees are outside and unable to evacuate to the shelter, the following procedure will be followed:

- Lie flat in a nearby ditch or depression, covering the head with the hands. Be aware of the potential for flooding.
- Employees are safest in a low, flat location and will be instructed to not get under an overpass or bridge.
- Employees will be instructed to never try to outrun a tornado in congested areas in a vehicle. It is safest to leave the vehicle for safe shelter.
- Employees will be instructed to watch out for flying debris.

5.2 Floods

It's important to be careful when driving during flood conditions. Nearly half of flood fatalities are vehicle-related. Six inches of standing water is enough to stall some cars, a foot of water can float a vehicle, and two feet of moving water is enough to sweep a car away. If the water level is rising around your vehicle, you should abandon the vehicle. Be wary of unknown road conditions. Do not try to cross flooded roadways if you do not know the depth of the water.

Determine whether your home or work place is in a predetermined flood plain. Stay informed about and know flood terminology:

- Flood Watch—Flooding is possible. Stay tuned to radio or TV for more information.
- Flash Flood Watch—Flash flooding is possible. Stay tuned to radio or TV for more information. Be prepared to move to higher ground.
- Flood Warning—Flooding is currently occurring or will occur soon. Listen for further instructions. If told to evacuate, do so immediately.
- Flash Flood Warning—Flash flooding is currently occurring or will occur soon. Seek higher ground on foot immediately.

5.2.1 Chemical and biological hazards

Liquefied Petroleum Gases (LPG) and underground storage tanks, along with other chemical containers, may break away and float downstream, causing hazards from their released contents. Floodwaters may also contain biohazards due to direct contamination by untreated raw sewage, dead animals, rotting food, etc. Avoiding contact, good personal hygiene practices, medical surveillance, and discarding all food that comes in contact with flood waters are all important controls.

5.2.2 Fire

Floods can damage fire protection systems, delay response times of emergency responders and disrupt water distribution systems. All of these factors lead to increased dangers from fire and decreasing firefighter capabilities.

5.2.3 Drowning

Anytime workers are exposed to moving water, their chances for accidental drowning increases. Even good swimmers are easily overcome by swift-moving water.

5.2.4 Hypothermia

Hypothermia is a condition brought on when the body temperature drops to less than 95°F. Standing or working in water that is cooler than 75°F will remove body heat more rapidly than it can be replaced, resulting in hypothermia. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion.

6. Hazardous Materials

6.1 Hazardous Materials on Site

Swinerton does not anticipate utilizing many hazardous materials for the construction of the Spotsylvania Solar Energy Center. One (1) 1000-gallon temporary diesel fuel tank and Two (2) 250-gallon temporary gasoline tanks are the only anticipated hazardous materials to be stored on site during construction

6.1.1 Container Management:

- All hazardous substance containers must be in good condition and compatible with the materials stored within.
- All hazardous substance containers must be accessible and spacing between containers must provide sufficient access to perform periodic inspections and respond to releases.
- Fuel stored on site shall have secondary containment and must be located greater than 250 feet from wetlands and RPA zones.
- Jersey barriers will be placed around fuel tanks where applicable for additional security.
- All fueling shall occur greater than 250 feet from wetlands and RPA zones.
- Empty hazardous substance containers (drums) must have all markers and labels removed and the container marked with the word “empty”.
- Any spills on the exterior of the container must be cleaned immediately.
- Flammable materials stored or dispensed from drums or totes must be grounded to prevent static spark.
- Do not overfill waste drums. 4” of headspace must remain to allow for expansion.

6.1.2 Good Housekeeping:

- All hazardous substances must be stored inside buildings or under cover.
- Store hazardous substances not used daily in cabinets, or in designated areas.
- All chemicals that are transferred from larger to smaller containers must be transferred by use of a funnel or spigot.
- All hazardous substance containers should be closed while not in use.
- Use drip pans or other collection devices to contain drips or leaks from dispensing containers or equipment.
- Implement preventative maintenance activities to reduce the potential for release from equipment.
- Immediately clean up and properly manage all small spills or leaks.
- Periodically inspect equipment and hazardous substance storage areas to ensure leaks or spills are not occurring.
- Use signage to identify hazardous substance storage or waste collection areas;
- Keep all work areas and hazardous substance storage areas clean and in good general condition.
- Verify weekly that spill control clean-up materials are located near material storage, unloading, and use areas.
- Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.

6.1.3 Secondary Containment:

- Store all bulk chemicals (≥55 gallons) within appropriate secondary containment, or any sized chemical if there is a potential for release to the environment.
- Secondary containment should be checked periodically, and any spills identified in secondary containment must be immediately cleaned up and removed.

6.1.4 Marking/Labeling:

- Ensure all hazardous substances, including chemical wastes, are properly marked and labeled in accordance with all federal, state and local regulations.
- Ensure that hazardous substances transferred to small containers are marked with the chemicals name (example- "Isopropyl Alcohol") and hazard (example- "Flammable").

6.2 Spill Response Plan

All spills shall be immediately addressed and reported to the appropriate agencies. In the unlikely event of a hazardous materials spill into an Resource Protection Area (RPA), wetland, or stream, Spotsylvania County EMS and the Zoning Department shall be notified immediately.

6.2.1 Minor Spills

Minor spills typically involve small quantities of oil, gasoline, paint, etc., which can be controlled by the first responder at the discovery of the spill. Below are the steps that should be taken to control minor spills:

- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Remove the absorbent materials promptly and dispose of properly.
- The practice commonly followed for a minor spill is:
    - Contain the spread of the spill.
    - Recover spilled materials.
    - Clean the contaminated area and/or properly dispose of contaminated materials.

6.2.2 Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Below are the steps that should be taken to control semi-significant spills:

- Clean up spills immediately:
    - Notify the project foreman immediately. The foreman shall notify the Engineer.
    - Contain spread of the spill.
    - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

- If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

6.2.3 Significant/Hazardous Spills

For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps shall be taken:

- Notify the Engineer immediately and follow up with a written report.
- Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper county officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor shall notify the National Response Center at (800) 424-8802.
- Notification shall first be made by telephone and followed up with a written report.
- The services of a spills contractor or a Haz-Mat team shall be obtained immediately. Construction personnel shall not attempt to clean up the spill until the appropriate and qualified staff has arrived at the job site.

Other agencies which may need to be consulted include, but are not limited to, the Fire Department, the Public Works Department, the Coast Guard, the Highway Patrol, the City/County Police Department, Department of Toxic Substances, OSHA, RWQCB, etc.

6.3 Education

Education regarding hazardous materials shall be conducted as part of the Swinerton site safety training for both new employees and as a refresher for existing employees transferring onto this project. The training shall:

- Educate employees and subcontractors on what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills.
- Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- Establish a continuing education program to indoctrinate new employees.
- The Contractor’s Water Pollution Control Manager (WPCM) shall oversee and enforce proper spill prevention and control measures. The Swinerton superintendent will be the WPCM for this project.

6.4 Maintenance and Inspection

Hazardous material maintenance and inspection shall consist of the following:

- Verify weekly that spill control clean-up materials are located near material storage, unloading, and use areas.

Update spill prevention and control plans and stock appropriate clean-up materials whenever changes occur in the types of chemicals used or stored onsite.

Appendix 1

Overall Site Plan and Site Access

Appendix 2

Crisis Management Plan

Appendix 3

Site Specific Safety Plan