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**Draft Construction Wildfire Mitigation Plan**

ODOE Template

DRAFT

**Instructions for Applicant's and Certificate Holders:**

- This template includes preventative actions, procedures, and standards commonly proposed to meet the requirements of OAR 345-022-0115(1)(b) and reflects practices the Department has identified as appropriate to minimize wildfire risk at solar photovoltaic power generation facilities. **Use of the template is not required**, and provisions in this template may be modified depending on the type of energy facility under review. Use of the template does not guarantee satisfaction with the Council's Wildfire Prevention and Risk Mitigation Standard. Use of the template does not establish a defense for any enforcement action for violation of a site certificate, Council order or rule. Use of the template or a separately-developed Wildfire Mitigation Plan does not relieve a certificate holder from proactively managing wildfire risk and taking steps to protect against wildfire beyond the measures included in the template or a separately-developed Plan.
- Areas in **yellow highlight** to be update based on the applicant/certificate holder proposal and should be filled out to the extent known at the time of review of the ASC/RFA. This information will be updated/finalized based on facility design and the construction plan prior to construction of the facility.
- All changes to this template must be made in track changes for the Department to determine the scope of changes made.

**Applicable EFSC Site Certificate Conditions**

**Wildfire Prevention and Risk Mitigation Condition 1 (PRE):** Prior to construction of the facility or phase, as applicable, the certificate holder shall:

- a. Finalize the Construction Wildfire Mitigation Plan, as provided in Attachment XX to the Final Order on ASC. The final Construction Wildfire Mitigation Plan shall be submitted to the Department for review and approval.
- b. Complete pre-construction tasks and actions designated in the Construction Wildfire Mitigation Plan approved under sub a of PRE-WF-01.  
[PRE-WF-01, Final Order on ASC]

**Wildfire Prevention and Risk Mitigation Condition 2 (CON):** During construction of the facility or phase, as applicable, the certificate holder shall:

- a. Implement and require all onsite contractors and employees to adhere to, the Construction Wildfire Mitigation Plan required under PRE-WF-01.
- b. After the first six months of construction; and then semi-annually during construction, review and update Construction Wildfire Mitigation Plan as designated in the Plan, and submit the results in the semi-annual construction report.
- c. Updates to the Wildfire Mitigation Plan may be required if determined necessary by the certificate holder, certificate holder's contractor(s) or the Department to address wildfire hazard to public health and safety. Any Department required updates shall be implemented within 14 days, unless otherwise agreed to by the Department based on a good faith effort to address wildfire hazard.

[CON-WF-01, Final Order on ASC]

## **1.0 Finalizing Wildfire Mitigation Plan Prior to Construction (PRE)**

### **1.1 Update Applicable Sections of WMP**

To finalize this WMP prior to construction of the facility:

Update Section 3.1 based on final facility design including a brief description of areas within the site that are subject to high wildfire risk, fire prevention features at the site, such as roads dimensions, setbacks, fire breaks, entry/exit locations, location of water truck(s) and fire protection equipment locations.

Update Section 3.2 and include in this WMP the facility site maps described in Section 3.2.

Update Section 3.4 with fire department, certificate holder, and operational manager contact information and emergency response procedures. Update Section 3.4 with analysis area residence contact information and confirm analysis area residence contact letter sent to residences within site boundary and 0.5 miles from the facility.

Update section 3.7 to describe vegetation management and areas that will be managed to be vegetation-free, noncombustible space, or gravel surface.

## **2.0 Prior to Construction Task List (PRE)**

Prior to construction of the facility, complete the activities in Sections 2.1 and 2.2.

### **2.1 Training (PRE):**

Before beginning construction, the certificate holder will hold an on-site training for contractors and construction personnel, inviting specialty contractors, local fire department(s), participating and adjacent landowners, emergency management office personnel, ODOE, and any other emergency management agency. The training will cover:

- Description of construction phasing;
- The type, location, and proper use of fire protection equipment;
- Fire protection equipment usage and maintenance requirements;
- The location(s) of water source(s) and proper usage, storing and maintenance for the pump, hose nozzle; and water hose;
- Overview of smoking policy and locations;
- Overview of procedures and restrictions of construction maintenance activities during Fire Season and Red Flag Warnings designated in this Plan;
- Rescue, Alarm, Contain and Extinguish RACE procedures including:
  - Rescue anyone in danger (if safe to do so);
  - Alarm – call the control room, who will then determine if 911 should be alerted;
  - Contain the fire (if safe to do so); and
  - Extinguish the incipient fire stage (if safe to do so).
- Provide information and encourage attendees to sign up for the County's emergency management notification system.

Training attendee list and training materials must be provided to the Department to demonstrate compliance.

The certificate holder will fill out and submit to the Department the template residence outreach letter provided as Attachment 1 of this WMP. Once Department confirms the letter to be sufficient, the certificate holder will mail to each residence within the 0.5 mile analysis area. Certificate holder will confirm mailing and submit to Department.

## **2.2 Facility Site Map(s) Submission (PRE):**

Submit updated site maps from Section 3.2 concurrently to local fire departments and the Department.

# **3.0 Construction Wildfire Mitigation Plan (CON)**

## **3.1 Summary of Facility Description with Design Features and Location of Fire Protection Equipment**

Provide a summary of construction phasing include descriptions of vegetation removal and staging. Include summary and description of areas within the site that are subject to high wildfire risk, fire prevention features at the site, such as roads dimensions, setbacks, fire breaks, entry/exit locations, location of water truck(s) and fire protection equipment locations.

## **3.2 Facility Site Map(s):**

This Construction WMP includes facility site maps that identify:

- The phasing for construction of facility features and components;
- Location and dimensions of facility roads;
- Location of vegetation free, noncombustible, defensible spaces;
- Wildfire risk at the site;
- High-fire consequence areas/resources (includes existing infrastructure, residences, sensitive habitat, or cultural resources)
- The location of facility access points;
- A description and the location of emergency access procedures, including how emergency responders and/or adjacent landowners may access site for fire protection equipment or to extinguish an on-site fire when personnel will not be onsite;
- The type and location of fire protection equipment on site;
- The location(s) of water source(s) that will be on-site during construction.
- 

## **3.3 Specifications for Fire Protection Equipment**

The following fire suppression equipment will be carried in vehicles conducting maintenance activities and stored on-site at the O&M building at all times:

- Fire Extinguisher: Dry chemical. 2A:10BC (5 pound), properly mounted or secured;
- Pulaski;

- Hand Shovel: Round point. 26 to 28 in "D" Handle, blade - 12 inches long and 10 inches wide;
- Collapsible Pail or Backpack Pump: 5-gallon capacity; and
- Drip Can: 5-gallon capacity.

During fire season (as designated in this Plan) water truck(s)/water source, water buffalo, or tank with minimum 500-gallon capacity must be on site. The water truck or water supply shall include the following, unless approved by the Department:

- Pump should be maintained ready to operate and capable to provide a discharge of not less than 20 gallons per minute at 115 psi at pump level. Note: Volume pumps will not produce the necessary pressure to effectively attack a fire start. Pressure pumps are recommended.
- Provide enough hose (500 feet minimum) not less than 3/4" inside diameter to reach areas where power driven machinery has worked.
- Water supply, pump, and at least 250' of hose with nozzle must be maintained as a connected, operating unit ready for immediate use.

All internal combustion engines must be equipped with exhaust systems, mufflers and screens, or include an appropriate spark arrestor; and must be kept in good operating condition. All combustion engines (including but not limited to off road vehicles, chainsaws, and generators) will be equipped with a spark arrester that meets U.S. Forest Service Standard 5100-1.

All power driven machinery will be kept free of excess flammable material which may create a risk of fire.

### **3.4 Facility Contact Information and Emergency Response Procedures**

Local fire department and county emergency management contact information:

- X
- X

Fire department response times to the site:

- X
- X

Certificate holder primary contact and contact of construction contractor manager(s):

- X
- X

Provide list of residence addresses within the site boundary and 0.5 miles from the site boundary.

Residence/landowner outreach letter is provided as Attachment 1 of this WMP. Use this letter to provide to new or updated residences with the analysis area as designated in Section 4.0, Plan Updates and Reporting Requirements.

Contact 911 in the event of:

- A fire or emergency on-site that cannot be addressed by personnel on-site and requires the assistance of fire or emergency medical personnel;

- A fire ignition on-site that spreads out of the fence line;
- Any fire off-site that does not have emergency responders on site.
  - To the extent that construction personnel can safely assist and/or provide equipment to help extinguish off-site fires until emergency responders are on site, it is encouraged to do so to assist in the spread of the fire, loss of life, property and damage to the environment.

### 3.5 Use of Vehicles and Power Driven Machinery at Site

The following best management practices (BMPs) to minimize fire risk from vehicle travel, equipment use, and fueling activities will be implemented at the site during construction:

- The movement of vehicles will be planned and managed to minimize fire risk.
- The contractor(s) will be responsible for identifying and marking paths for all off-road vehicle travel. All off-road vehicle travel will be required to stay on the identified paths. No off-road vehicle travel will be permitted while working alone. Travel off road or parking in vegetated areas will be restricted during fire season as designate din this Plan.
- Areas with grass that are as tall or taller than the exhaust system of a vehicle must be wetted before vehicles travel through it.
- Workers will be instructed to shut off the engine of any vehicle that gets stuck, and periodically inspect the area adjacent to the exhaust system for evidence of ignition of vegetation. Stuck vehicles will be pulled out rather than “rocked” free and the area will be inspected again after the vehicle has been moved.
- The contractor(s) will designate a location for field fueling operations at the temporary construction yards. Any fueling of generators, pumps, etc. shall take place at this location only.
- Fuel containers, if used, shall remain in a vehicle or equipment trailer, parked at a designated location alongside a county right-of-way. No fuel containers shall be in the vehicles that exit the right-of-way except the five-gallon container that is required for the water truck pump.
- All power driven machinery will be kept free of excess flammable material which may create a risk of fire.

### 3.6 Fire Precaution Levels and Restrictions during Fire Season

Definitions:

 **Non-Fire Season** – Approximately October - May

 **Fire Season** – Approximately June-September, formally designated by the Oregon Department of Forestry (ODF). Under ORS 478.960 (4), a Fire Chief can establish Fire Season within a Fire District when ODF, under ORS 477.505, declares Fire Season. Begins seasonal restrictions for public and industry.

 **Fire Weather Watch** - A fire weather watch is issued when there is a high potential for the **XXX** Energy Facility

development of a red flag event. A watch is issued 18 to 96 hours in advance of the expected onset of criteria. Intent of a fire weather watch is to alert forecast users at least a day in advance for the purposes of resource allocation and fire fighter safety. A watch means critical fire weather conditions are possible but not imminent or occurring.



**Red Flag Weather Warning** - A red flag warning is used to warn of impending or occurring red flag conditions. Its issuance denotes a high degree of confidence that weather and fuel conditions consistent with local red flag event criteria will occur in 48 hours or less. Specific Red Flag criteria differ for each situation and district in Oregon. Be extremely careful with open flames and other activities that emit sparks.

**Hot Work** - Any cutting, grinding, welding, or other activity that creates spark or open flame.

#### **Fire Watch Service** -

Fire watch shall:

- Be physically capable and experienced to operate firefighting equipment.
- Have facilities for transportation and communications to summon assistance.
- Observe portions of the facility where equipment activity occurred during the day.

Upon discovery of a fire, fire watch personnel must: First report the fire, summon any necessary firefighting assistance, describe intended fire suppression activities; then, after determining a safety zone and an escape route that will not be cut off if the fire increases or changes direction, immediately proceed to control and extinguish the fire, consistent with firefighting training and safety.

#### **Fire-Prevention Measures and Restrictions Associated with Fire Season:**

Certificate holder shall maintain a log when construction activities are impacted by Fire Restrictions during Fire Season as designed in this Section. The log will include:

- The date;
- Fire Precaution Level;
- Description of actions taken, including if any measures were taken to reduce wildfire risk that are not identified in this Plan.

#### **Non-Fire Season**

- All hot work (must be conducted on roads or on non-combustible surfaces).
- Smoking in designated areas only.



#### **Fire Season**

- Before the start of each daily shift, at approximately 07:00 a.m. local time, the Technician in charge will check the fire danger posting by the National Weather Service for any Red Flag Warnings for that day.
- All hot work (any cutting, welding, or other activity that creates spark or open flame) must be conducted on roads or on non-combustible surfaces.
- Water source meeting specifications in this Plan will be on site during fire season.
- Following the completion of hot work, the Certificate Holder or contractor(s) must maintain

a fire watch for 60 minutes to monitor for potential ignition.

- Fire watch shall be on duty during any breaks and for one hour after all power driven machinery used by the operator has been shut down for the day.
- Smoking in designated areas only.



### **Fire Weather Watch**

- No hot work permitted.
- Driving and parking only permitted on graveled surfaces.
- Fire watch shall be on duty during any breaks and for one hour after all power driven machinery used by the operator has been shut down for the day.
- No smoking on site.



### **Red Flag Weather Warning**

- No hot work permitted.
- On-site personnel must be aware of Red Flag Warning.
- Driving and parking only permitted on graveled surfaces.
- Fire watch shall be on duty during any breaks and for one hour after all power driven machinery used by the operator has been shut down for the day.
- No smoking on site.

**Table 1: Fire Prevention Measures During Fire Season Summary**

Requirement	Non-Fire Season	Fire Season	Fire Weather Watch	Red Flag Warning
Fire weather advisory	Not required	Check for fire weather advisory daily before work begins.	Check for fire weather advisory daily before work begins.	Check for fire weather advisory daily before work begins. On-site personnel must be aware of Red Flag Warning.
On-site water source	N/A	As specified in Section 3.2	As specified in Section 3.2 and 3.3.	As specified in Section 3.2 and 3.3.
Hot work	Only permitted on roads or on non-combustible surfaces.	Only permitted on roads or on non-combustible surfaces; fire watch required	Not Permitted	Not Permitted

**Table 1: Fire Prevention Measures During Fire Season Summary**

Requirement	Non-Fire Season	Fire Season	Fire Weather Watch	Red Flag Warning
		for 60 minutes after completion		
Fire Watch Service	Not required	During breaks and for 60 minutes after all power-driven machinery has been shut down for the day.	During breaks and for 60 minutes after all power-driven machinery has been shut down for the day.	During breaks and for 60 minutes after all power-driven machinery has been shut down for the day.
Driving and Parking	As described in Section 3.5.	As described in Section 3.5.	Only permitted on roads or on non-combustible surfaces and Section 3.5.	Only permitted on roads or on non-combustible surfaces and Section 3.5.
Smoking	Designated areas only	Designated areas only	Not permitted	Not permitted

## 3.7 Vegetation Management

### 3.7.1 Vegetation-free, Noncombustible Space, and Vegetation Standards

Vegetation within the fence line and below the solar arrays will be maintained in accordance with the approved Revegetation and Reclamation Plan for the facility.

- Vegetation will be limited to a height of 10-12 inches, with a minimum clearance of 12 inches from electrical equipment. Vegetation near, at, or taller than the maximum height shall be removed or mowed.
- Mowing must be done in advance of fire season or accordance to any fire restrictions.
- At no point shall vegetation come in contact with electrical equipment.
- Vegetation buildup in the fence line(s), shall be removed.
- Any vegetation removed from the site will be disposed of and not stored onsite. Certificate holder and contractors will prevent the accumulation of combustible “burn piles” on site.

The following areas will be managed to be vegetation-free, noncombustible space, or gravel surface:

- XX foot wide service roads within solar fence line - graveled
- XX wide perimeter roads – graveled

- 10- foot noncombustible, defensible space clearance along the fenced perimeter of the site boundary – vegetation free
- Within and a 10-foot perimeter of the inverter/transformer pads, collector substation and battery energy storage system (BESS) – graveled, similar noncombustible base, or vegetation free
- Parking and O&M building perimeter - graveled
- Vegetation along service roads will be managed by mowing or other vegetation removal

Vegetation in these areas will be managed by the following techniques:

- XX
- XX

## 3.8 Construction Training(s)

### 3.8.1 Safety Training

Once a year after construction begins, organize and hold an on-site training with certificate holder and construction personnel, inviting equipment manufacturers, specialty contractors, local fire department(s), participating and adjacent landowners, emergency management office personnel, ODOE, and any other emergency management agency that covers:

- The location of electrical facility components and the fire safety measures associated with each component that have been constructed;
- Description of remaining construction phasing;
- The type, location, and proper use of fire protection equipment;
- Fire protection equipment usage and maintenance requirements;
- The location(s) of water source(s) and proper usage, storing and maintenance for the pump, hose nozzle; and water hose;
- Overview of smoking policy and locations;
- Overview of procedures and restrictions of construction activities during Fire Season, Fire Weather Watches, and Red Flag Warnings designated in this Plan;
- Rescue, Alarm, Contain and Extinguish (RACE) procedures including:
  - Rescue anyone in danger (if safe to do so);
  - Alarm – call the control room, who will then determine if 911 should be alerted;
  - Contain the fire (if safe to do so); and
  - Extinguish the incipient fire stage (if safe to do so).
- Provide information and encourage attendees County's emergency management notification system.

## 4.0 Plan Updates: Amendments and Reporting Requirements:

The following will be provided to the Department in the semi-annual construction report required per OAR 345-026-0080:

- Section 3.1 and 3.2, any changes in wildfire risk at the site or changes in facility components

or preventative features.

- Section 3.4, any changes in local fire protection agency personnel and operational managers.
- Section 3.4, any changes in analysis area residence/landowner addresses or contact information.
- A copy of the Fire Season Restriction Log identified in Section 3.6.

This information may be used to establish the performance of the WMP. If determined by certificate holder or Department, adjustments or improvements must be proposed to ensure the WMP provides wildfire mitigation. Any Department required updates shall be implemented within 14 days, unless otherwise agreed to by the Department based on a good faith effort to address wildfire hazard.

This Plan may be amended from time to time by agreement of the certificate holder and the Oregon Energy Facility Siting Council (EFSC) or ODOE, acting within its delegated authority of EFSC. Such amendments may be made without amendment of the site certificate. EFSC authorizes ODOE to agree to amendments to this Plan. ODOE will notify EFSC of all amendments, and EFSC retains the authority to approve, reject, or modify any amendment of this Plan agreed to by ODOE.

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Attachment 1: Residence/Landowner Outreach Letter

