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Draft Operational Wildfire Mitigation Plan

ODOE Template

Instructions for Applicants 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 updated 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 final design prior to operation of the facility.
- All changes to this template must be made in track changes for the Department to evaluate the scope of changes made.

Applicable EFSC Site Certificate Conditions

Wildfire Prevention and Risk Mitigation Condition 3 (PRO): Prior to operation of the facility or phase, as applicable, the certificate holder shall:

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

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

Wildfire Prevention and Risk Mitigation Condition 4 (OPR): During operation, the certificate holder shall:

- a. Implement the Operational Wildfire Mitigation Plan required under PRO-WF-01, included as Attachment XX to the Final Order on ASC.
- b. After the first operational year, annually review and update Operational Wildfire Mitigation Plan as designated in the Plan, and submit the results in the annual report for that year.
- c. Updates to the Wildfire Mitigation Plan may be required if determined necessary by the certificate holder 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 Operation (PRO)

1.1 Update Applicable Sections of WMP

To finalize this WMP prior to operation 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 road dimensions, setbacks, fire breaks, entry/exit locations, water truck(s) and fire protection equipment locations. Describe fire detection, fire suppression, and emergency shut off systems that will be activated in the event of a fire.

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

Update Section 3.7 and Table 2: *Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results*, based on manufacturer recommendations associated with each type of facility component and vegetation management consistent with this WMP and Revegetation Plan; and include an appendix with excerpts of manufacturer recommendations.

Update Section 3.10 with any additional details about facility monitoring.

Update Section 4.0 with any additional standards for future review and plan updates. Note that Table 2: *Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results*, will be used as a compliance checklist by the Department 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.

2.0 Prior to Operation Task list (PRO)

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

2.1 Training (PRO)

Before beginning operation, the certificate holder will hold an on-site training for operational 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. The training will cover:

- The location of electrical facility components and the fire safety measures associated with each component;

- Battery-specific safety protocols, including how to appropriately address chemical fires, in the event of an emergency;
- The type, location, and proper use of fire protection equipment;
- Fire protection equipment 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 operational 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 (PRO):

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

3.0 Operational Wildfire Mitigation Plan (OPR)

3.1 Summary of As-Built Facility Description with Design Features and Location of Fire Protection Equipment

Include summary and description of areas within the site that are subject to high wildfire risk, fire prevention features at the site, such as road dimensions, setbacks, fire breaks, entry/exit locations, and water truck(s) and fire protection equipment locations. Describe fire detection, fire suppression, and emergency shut off systems that will be activated in the event of a fire.

3.2 Facility Site Map(s):

This Operational WMP includes facility site maps that identify:

- Location and dimensions of facility roads;
- Location of vegetation free, noncombustible, defensible spaces;
- Wildfire risk at the site and date;
- 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 operations.

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:

- Fire Extinguisher: Dry chemical. 2A:10BC (5 pounds), 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 of providing 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 arrestor 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 operational 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 operational 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 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 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 operation on which activity occurred during the day.

Upon discovery of a fire, Firewatch 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 operational 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 for 60 minutes after completion	Not Permitted	Not Permitted
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 3.9.	As described in Section 3.9.	Only permitted on roads or on non-combustible surfaces and Section 3.9.	Only permitted on roads or on non-combustible surfaces and Section 3.9.
Smoking	Designated areas only	Designated areas only	Not permitted	Not permitted

3.6 Vegetation Management

3.6.1 Vegetation-free, Noncombustible Space

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
-

3.6.2 Vegetation Standards, Surveys and Management

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.

A vegetation assessment survey of the fenced area will be completed at least twice a year to monitor for vegetation clearances and maintenance of fire breaks, and wildfire hazards. One survey will occur before the fire season begins, in May or June. The second survey will occur in October or November. Additional vegetation surveys and management may be required throughout the year based on seasonally heightened fire risk, vegetation growth, or observations from operational maintenance staff.

The survey will be conducted by the a vegetation specialist and will be used to assess the frequency of upcoming vegetation maintenance and will assess and document the following:

- Location;
- Species;
- Height;
- Proximity to facility components;
- Estimated growth rate;
- Abundance;
- Clearance/setbacks; and

- Risk of fire hazard.

Results of surveys shall be provided in the annual updates to this WMP, designated in Section 4.0.

Vegetation control includes: (to be consistent with this WMP, Revegetation Plan, Soil Reclamation Plan and Noxious Weed Plan.)

- XXX
- XXX

3.7 Inspections and Maintenance

Facility components will be inspected and maintained as designated in Table 2: *Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results* below. Update Table 2 based on manufacturer recommendations associated with each type of facility component and vegetation management consistent with this WMP and Revegetation Plan.

Table 2 includes an operational check list that will be filled out designating which personnel conducted inspections and maintenance, the dates of inspections and maintenance, and results. As designated in Section 4.0, of this WMP, this table checklist will be submitted to demonstrate compliance with the WMP and used to determine if changes to the WMP are necessary. Other checklist may be provided prior to operation and in the annual review of the WMP, as approved by the Department.

Manufacturers' recommendations, or excerpts for inspections and maintenance are included as Appendix XX to plan.

Lock Out/Tag Out Program:

During maintenance activities, electrical equipment is de-energized and physically locked or tagged in the de-energized positions to avoid inadvertent events that could result in arc flash.

- Ensure equipment is maintained to prevent and control sources of ignition.

Table 2: Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results

Facility Component(s)	Inspection Procedure	Inspection Frequency	Standard ¹	Maintenance Schedule	Date and Personnel Completing Inspection(s); Inspection Results	Date and Personnel Completing Maintenance; Maintenance Results
System Protection	Protection Relays <ul style="list-style-type: none"> Verify calibration and check functionality. Breaker Trip Testing <ul style="list-style-type: none"> Verify the ability to trip breakers via coil. 	X	Manufacturer's maintenance recommendations	Repair or replace once every 5 years	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
System Protection	System Protection Potential Transducers ("PTs") and Current Transducers ("CTs") <ul style="list-style-type: none"> Verify calibration and check functionality. 	X	Manufacturer's maintenance recommendations	Repair or replace once every 11 years	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
Solar Inverter	<ul style="list-style-type: none"> Visual inspection of inverter and surrounding area. Verify torque specifications. For alternating current (AC)/direct current (DC), perform inspection of communication and control power terminations. Cycle AC/DC disconnects, inspect AC/DC contactors and cooling fans. Perform infrared scan. Inverter Testing and Preventative Parts Replacement <ul style="list-style-type: none"> Preventative maintenance replacement of inverter parts (e.g.: cooling system and power supplies that are operating effectively but scheduled for replacement per manufacturer's recommendations). 		Spill Prevention, Control, and Countermeasures (SPCC) Plan ³ Manufacturer's maintenance recommendations	<ul style="list-style-type: none"> Monthly SPCC Plan Bi-annual Preventative Maintenance Per manufacturer's recommendations 	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
	Vegetation: Visual inspection during component inspections and visual inspections during vegetation surveys twice a year.	Vegetation: Twice a year during vegetation surveys and additional visual inspections during routine inspections of components.	Vegetation: Herbicide application on gravel pad around inverter to prevent vegetation growth. IEEE 80 NEC 70	Vegetation: Yearly, depending on vegetation condition. Or more frequent based on vegetation survey results or upon visual inspections listed above.	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
Tracker System	<ul style="list-style-type: none"> Perform visual inspection of tracking components; sync data with the Applicant's Operations Center. Perform visual inspection of module clamps and rail fasteners for integrity. Perform visual inspection of gear drives and shaft assemblies for alignment. Grease gear boxes and/or drive shaft. Verify wind stow functionality and lubricate slew ring. 		Manufacturer's maintenance recommendations	<ul style="list-style-type: none"> Per manufacturer's recommendations 	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
Solar Array Structures	<ul style="list-style-type: none"> Perform visual inspection of mounting structures, 		Manufacturer's	Repair or replace annually	Date:	Date:
					Personnel:	Personnel:

Table 2: Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results

Facility Component(s)	Inspection Procedure	Inspection Frequency	Standard ¹	Maintenance Schedule	Date and Personnel Completing Inspection(s); Inspection Results	Date and Personnel Completing Maintenance; Maintenance Results
	grounding, and cabling.		maintenance recommendations		Personnel:	Personnel:
					Results:	Results:
					Notes:	Notes:
Solar Array Panels, Harnesses, and Combiner Boxes	At Applicant’s sole discretion, to perform one of the following options: <ul style="list-style-type: none">• Infra-red (“IR”) Flyovera. IR scan of Site providing DC health of the Facility down to string level reporting; or <ul style="list-style-type: none">• Physical DC Health Inspectiona. Perform visual inspection of whips and wires connectors for damage or exposed conductors in gutters of harness combiner boxes.b. Measure and record current of each whip using clamp-on meter and identify low performing whips.		Applicant’s discretion Manufacturer’s maintenance recommendations	Repair or replace annually	Date:	Date:
					Personnel:	Personnel:
					Results:	Results:
					Notes:	Notes:
	Vegetation: Visual inspection during component inspections and visual inspections during vegetation surveys twice a year.	Vegetation: Twice a year during vegetation surveys and additional visual inspections during routine inspections of components	Vegetation: Vegetation under solar arrays will be maintained to a height of 10-12 inches, with a minimum clearance of 12 inches from electrical equipment. Methods include manual removal, mowing, or as designate din this Plan.	Vegetation: Twice a year, or more often, as designate din this Plan.	Date:	Date:
					Personnel:	Personnel:
Collector Substation	<ul style="list-style-type: none">• Perform visual inspection of the grounding system.• Perform thermographic and visual inspection.• Perform uninterrupted power supply (UPS) inspection and maintenance.		Manufacturer’s maintenance recommendations North American Electric Reliability Corporation (NERC)	Repair or replace annually	Date:	Date:
					Personnel:	Personnel:
	Vegetation: Visual inspection during component inspections and visual inspections during vegetation surveys twice a year.	Vegetation: Twice a year during vegetation surveys and additional visual inspections during routine inspections of components.	Vegetation: Herbicide application on substation gravel pad. IEEE 80 NEC 70	Vegetation: Yearly, depending on vegetation condition. Or more frequent based on vegetation survey results or upon routine visual inspections.	Results:	Results:
					Notes:	Notes:

Table 2: Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results

Facility Component(s)	Inspection Procedure	Inspection Frequency	Standard ¹	Maintenance Schedule	Date and Personnel Completing Inspection(s); Inspection Results	Date and Personnel Completing Maintenance; Maintenance Results
BESS	<ul style="list-style-type: none"> Set battery maintenance (system check, cell balancing). Battery cable, appearance, grounding, dust removal. Inspect battery management system alarms. Visual inspection of electrical terminations using thermal imager. 		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:
	Vegetation: Visual inspection during component inspections and visual inspections during vegetation surveys twice a year.	Vegetation: Twice a year during vegetation surveys and additional visual inspections during routine inspections of components.	Vegetation: Herbicide application on substation gravel pad. IEEE 80 NEC 70	Vegetation: Yearly, depending on vegetation condition. Or more frequent based on vegetation survey results or upon routine visual inspections.	Results: Notes:	Results: Notes:
Unit Control Enclosure Battery	<ul style="list-style-type: none"> Check for correct operations of battery monitoring system and battery charging system. Perform visual inspection of the battery room, mounting rack, batteries, and connections. 		Manufacturer's maintenance recommendations	Repair or replace monthly	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
Unit Control Enclosure Battery	<ul style="list-style-type: none"> Perform individual cell float charge and specific gravity checks. 		Manufacturer's maintenance recommendations	Repair or replace quarterly	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
Unit Control Enclosure Battery	<ul style="list-style-type: none"> Measure float cell voltage, pilot cell voltage, and electrolyte temperature of pilot cell. 		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
Supervisory, Control and Data Acquisition (SCADA) & Network Equipment	<ul style="list-style-type: none"> Plant equipment will be evaluated every 5 years to determine state of health and provide recommendations to Savion. 		Manufacturer's maintenance recommendations	Upgrade, repair, or replace every 5 years	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
BESS Junction Box/ Auxiliary System/Miscellaneous	<ul style="list-style-type: none"> Auxiliary equipment maintenance and inspection. Enclosure dust removal. Inspect cable entry, grounding, sealing, dust removal. 		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:

Table 2: Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results

Facility Component(s)	Inspection Procedure	Inspection Frequency	Standard ¹	Maintenance Schedule	Date and Personnel Completing Inspection(s); Inspection Results	Date and Personnel Completing Maintenance; Maintenance Results
	<ul style="list-style-type: none">Critical sensor calibration check.Maintenance report.				Results: Notes:	Results: Notes:
BESS Fire Safety System	<ul style="list-style-type: none">Fire alarm and detection system inspection.Fire alarm and detection system maintenance.Fire suppression System Inspection.		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
BESS Thermal Management System	<ul style="list-style-type: none">Thermal management system inspection.Thermal management system maintenance.Motor Lubrication.Clean Filters by rinsing with water.Electric Heater - Dust accumulation on the coil, signs of overheating on the heater frame, traces of water or rust on the electric heater control box.		Manufacturer's maintenance recommendations	Repair or replace semi-annually	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
BESS Thermal Management System	<ul style="list-style-type: none">Coolant tester visual inspection.		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
BESS General	<ul style="list-style-type: none">System configuration check.		Manufacturer's maintenance recommendations	Repair or replace annually	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
Medium Voltage (MV) and High Voltage (HV) Breaker	<ul style="list-style-type: none">Clean out dirt and debris.Perform a manual operation test.Perform an electrical test.Perform a gas leakage test.		Manufacturer's maintenance recommendations	Repair or replace per manufacturer's recommendations	Date: Personnel:	Date: Personnel:
			NERC		Results: Notes:	Results: Notes:
Generator Step-Up (GSU) Transformer	<ul style="list-style-type: none">Perform a visual inspection and check for proper operation of fan motor, oil pump motor, and breather.Inspect and maintain substation transformer bushings		SPCC Plan ³	Repair, overhaul, refurbish, or replace per manufacturer's recommendations	Date: Personnel:	Date: Personnel:

Table 2: Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results

Facility Component(s)	Inspection Procedure	Inspection Frequency	Standard ¹	Maintenance Schedule	Date and Personnel Completing Inspection(s); Inspection Results	Date and Personnel Completing Maintenance; Maintenance Results
	and control panel. <ul style="list-style-type: none">Perform visual inspection of bushings for indications of local heating, oil leaks, proper oil level and indication of contaminants.		Manufacturer's maintenance recommendations		Results: Notes:	Results: Notes:
Inverter Step-up Transformer	<ul style="list-style-type: none">Perform infrared scans on low side of transformer when power is >80%.Verify temperature and pressure sync with the contractor's Operations Center.Perform visual inspection of the physical integrity of the enclosure and check for oil leakage.Perform visual inspection for damage or discoloration of bushings.Perform oil sample analysis on MV transformer(s).Collect MV transformer oil sample(s) for 3rd party analysis.Perform electrical test of transformer.Verify integrity of surge arresters and check for proper tap position.		SPCC Plan ³ Manufacturer's maintenance recommendations	Replace or repair per manufacturer's recommendation	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
	Vegetation: Visual inspection during component inspections and visual inspections during vegetation surveys twice a year.	Vegetation: Twice a year during vegetation surveys and additional visual inspections during routine inspections of components.	Vegetation: Herbicide application on gravel pad around inverter to prevent vegetation growth. IEEE 80 NEC 70	Vegetation: Yearly, depending on vegetation condition. Or more frequent based on vegetation survey results or upon visual inspections listed above.	Date: Personnel:	Date: Personnel:
					Results: Notes:	Results: Notes:
Overhead electrical lines	Visual inspection of components, grounding and APLIC measures.		APLIC		Date: Personnel:	Date: Personnel:
	Vegetation: Visual inspection of vertical clearance distance between conductor and vegetation.		Vegetation: National Energy Reliability Corporation (NERC) - Vegetation maintenance standard FAC-003-0. Mow vegetation to achieve clearance requirements between conductor and ground.	Vegetation: Yearly, depending on vegetation condition.	Results: Notes:	Results: Notes:

1. The Operational SPCC Plan for the Facility will require these components to be inspected monthly for spills. During these inspections, Operational Staff will also visually inspect the component and surrounding area.

3.8 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 operational activities:

- The movement of vehicles will be planned and managed to minimize fire risk.
- As necessary, contractor(s) or operational personnel 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.
- 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.

3.9 Operational Training(s)

3.9.1 Annual or Biannual Safety Training

Organize and hold an on-site training with operational 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;
- Battery-specific safety protocols, including how to appropriately address chemical fires, in the event of an emergency;
- The type, location, and proper use of fire protection equipment;
- Fire protection equipment 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 operational 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.

3.9.2 Electrical Safety Program

All operational workers will be trained in electrical safety and the specific hazards of the facility. This training will address:

- Minimum experience requirements to work on different types of electrical components;
- Lockout/tagout procedures
- Electrical equipment testing and troubleshooting;
- Switching system;
- Provisions for entering high voltage areas (e.g., substation);
- Minimum approach distances; and
- Required personal protective equipment.

3.10 Facility Monitoring

Facility components that are monitored via the supervisory, control, and data acquisition (SCADA) system are the solar inverters, collector substation, battery energy storage system (BESS), and overhead electrical lines associated with the alternate gen-tie line.

Facility components will be monitored remotely with the SCADA system 24 hours a day, 7 days a week.

Smoke and fire detectors are placed throughout the facility, will be connected to the SCADA system, and will contact local firefighting services if needed. The BESS will also have integrated fire safety and monitoring systems to detect and alarm if a fire condition is detected.

Facility has remote shutdown capabilities that involve XXX.

4.0 Plan Updates: Amendments and Reporting Requirements

The following information must be provided to the Department in the annual 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.
- Fill out Table 2: *Operational Electrical Component and Vegetation Inspection and Maintenance Schedule and Results*, with the dates, personnel, and results of inspections and maintenance performed. A different form or checklist of operational inspection, vegetation

management, and maintenance may be used if approved by the Department.

- A copy of the Fire Season Restriction Log identified in Section 3.5.

The certificate holder must review this WMP annually to determine if updates to the WMP are necessary. In its annual review, the certificate holder will evaluate changes in standards, policies, future technologies or best practices that could be implemented at the facility to address wildfire prevention or protection, including but not limited to those identified in Table 3, below.

Information from the annual reporting and from the certificate holder or Department review of sources in Table 3 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.

Table 3: Standards for Future Review

Reference	Description	Method
American Clean Power	Industry ground that establishes best practices for renewable energy projects.	The applicant is a member of ACP and participates in best practice development ¹ .
National Electric Reliability	National Energy Reliability Corporation develops electrical standards for large energy facilities.	The applicant will follow NERC Standard FAC-003-0 for its vegetation management program of transmission lines ² , or updates to this standard as approved by NERC.
Oregon Specialty Building Codes	Building codes applicable to inhabitable spaces, including the O&M building and the substation enclosure.	Remodeling to the O&M and enclosure structure that requires permits will follow any updates to the OSPC at that time.
Oregon Fire Code	The Oregon State Fire Marshal adopts the Oregon Fire Code, establishing minimum fire prevention and protection systems requirements applicable to certain structures, including but not limited to, energy systems.	The applicant will adhere to any applicable standards of the Oregon Fire Code and will incorporate features necessary to meet those standards into the design of the facility. Certificate holder will annually review and apply applicable standards that may apply to

Table 3: Standards for Future Review

Reference	Description	Method
NFPA Codes and Standards	The National Fire Protection Association publishes codes and standards intended to minimize the possibility and effects of fire and other risks/	The applicant will identify and adhere to any applicable codes and standards and will incorporate features necessary to meet those standards into the design of the facility. Certificate holder will annually review and apply applicable standards that may apply to an operational facility.
APLIC	Avian protection methods for electrical facility reduce fires related to bird/mammal nests on electrical equipment.	The applicant is a member of APLIC ³ . An operational wildlife monitoring program will inspect for wildlife nesting on facilities that could cause fire, and take actions following applicable laws (e.g., MBTA).
ORS chapter 477, OAR chapter 629-043	Standards and rules for fire prevention in forest and range land administered by Oregon Department of Forestry	The applicant will be familiar with and operate consistently with the applicable standards, including any updates to rules or standards and will provide a summary of standards that are updated and implemented at the facility.
OAR chapter 860, division 024	Safety standards for transmission lines adopted by Oregon PUC	The applicant will maintain consistency with any applicable vegetation clearance requirements, pruning standards, and high fire risk zone safety standards and will provide a summary of standards that are updated and implemented at the facility.
<p>1. Link to ACP Standards & Practices: https://cleanpower.org/resources/types/standards-and-practices/.</p> <p>2. NERC FAC-003-0: https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-0.pdf.</p> <p>3. Link to APLIC member organization: https://www.aplic.org/member_websites.php.</p>		

Attachment 1: Residence/Landowner Outreach Letter