BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Implement Electric Utility Wildfire Mitigation Plans Pursuant to Senate Bill 901 (2018).	Rulemaking 18-10-007 (Filed October 25, 2018)

INITIAL WILDFIRE MITIGATION PLAN OF PACIFICORP (U 901 E)

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February 6, 2018

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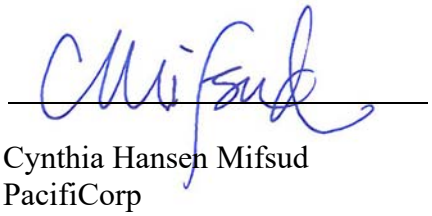
In accordance with the December 7, 2018 Assigned Commissioner's Scoping Memo and Ruling and the January 17, 2019 Administrative Law Judge's Ruling on Wildfire Mitigation Plan Template, and Adding Additional Parties as Respondents, PacifiCorp, d.b.a. Pacific Power ("PacifiCorp"), hereby submits its initial Senate Bill 901 wildfire mitigation plan ("WMP").

PacifiCorp appreciates the opportunity to obtain feedback on its initial WMP and looks forward to participating in the upcoming workshops in this proceeding.

Dated: February 6, 2019

Respectfully submitted,



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PACIFIC POWER
A DIVISION OF PACIFICORP

California Wildfire Mitigation Plan

PacifiCorp

Implementing Requirements of Senate Bill 901 and Rulemaking 18-10-007

February 6, 2019

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Definition of Common Acronyms

A	Application
AHI	Asset Health Index
APLIC	Avian Power Line Interaction Committee
APP	Avian Protection Plan
BHE	Berkshire Hathaway Energy
BLM	Bureau of Land Management
CALFIRE	California Department of Forestry and Fire
CPUC	California Public Utilities Commission
D	Decision
FPP	Fire Prevention Plan
GIS	Geographic Information System
GO	General Order
GRC	General Rate Case
IVM	Integrated Vegetation Management
MBTA	Migratory Bird Treaty Act
MVCD	Minimum Vegetation Clearance Distance
NERC	North American Electric Reliability Corporation
NEC	National Electric Code
NESC	National Electric Safety Code
PCC	Portland Control Center
PDZ	Proactive De-energization Zone
PRC	California Public Resources Code
PSPS	Public Safety Power Shutoff
PUC	California Public Utilities Code
R	Rulemaking
RAM	Risk Assessment Matrix
RF	Radio Frequency
SB	Senate Bill
UAS	Unmanned Aircraft System
USFS	United States Department of Forestry
WMP	Wildfire Mitigation Plan

I. Introduction and Objectives

A. Background

A number of devastating fires that spread across areas of southern California in 2007 were attributed to ignitions caused by certain elements of overhead utility construction. In the wake of these incidents, the California Public Utilities Commission (CPUC) initiated a fire safety rulemaking proceeding spanning more than ten years, concluding in early 2018. The three phases of rulemaking focused on developing regulations to reduce the risk of wildland fire ignition caused by overhead utility systems.

In Phase 1, the CPUC developed stricter regulations for the construction, operation, and maintenance of overhead utility facilities located in southern California. In Phase 2, the Commission adopted statewide regulations impacting construction, operation and maintenance practices but differentiated between northern and southern California based on perceived differences in exposure to risks of wildfire ignition and spread (thereby extending some of the designations developed in Phase 1). In Phase 3, the Commission worked with parties to develop and adopt a statewide fire threat map, which was developed using the best available science and sophisticated computing techniques, as well as additional regulations (including the requirement that each utility incorporate a fire prevention plan in their GO 166 filings), many of which were designed to create stricter standards in the portions of utilities' service territories within the high fire threat district, as designated on the statewide fire threat map.

Just as the CPUC's fire safety proceeding was winding down in late 2017 and early 2018, California experienced the well-documented, unprecedented and catastrophic wildfires in northern and southern California, as well as the associated landslides, precipitating prompt action by California legislators. The legislative effort culminated in Senate Bill (SB) 901, signed into law by the Governor of California in September 2018, just before the devastating Camp Fire occurred in Paradise, California.

Under SB 901, California has taken a comprehensive approach to mitigating and creating greater resilience against wildfire risks. A key element of SB 901 is in the new provisions of the California Public Utilities Code (PUC) Section 8386 which require electric utilities to develop annual wildfire mitigation plans (WMPs) to prevent, combat, and respond to wildfires within their service territories. Under PUC 8386(c), utilities must include in their WMPs statutorily prescribed content addressing a list of specific issues.

In order to implement this requirement of SB 901, the CPUC initiated a new rulemaking proceeding in October 2018, referred to as Rulemaking (R.) 18-10-007. In R. 18-10-007, the CPUC adopted a deadline of February 6, 2019, for utilities to file their initial WMPs and ordered utilities to use a uniform WMP template. Initial WMPs will be subject to both formal comment and interactive discussion at technical workshops.

The CPUC is expected to issue a decision approving the final form of each utilities' initial WMP by May 2019, in advance of fire season.

B. Objectives of the Plan

1. General

This Plan details PacifiCorp's planned efforts before, during and after the 2019 fire season to construct, maintain, and operate its electrical lines and equipment in a manner that will minimize the risk of catastrophic wildfire, in accordance with the requirements of PUC Section 8386(a).

In evaluating which engineering, construction, and operational strategies to employ in its California service territory to minimize wildfire risks associated with electric facilities, PacifiCorp was guided by the following core concepts/premises:

- Frequency of ignition events related to electric facilities can be reduced by engineering more resilient systems that experience fewer fault events.
- When a fault event does occur, the impact of the event can be minimized using equipment and personnel to isolate the fault event.
- Systems that facilitate situational awareness and operational readiness are central to mitigating fire risk and its impacts.
- A successful plan must reflect consideration of impact on stakeholders and communities, its effect on the provision of reliable and safe electric service, and the extent to which it is commensurate with both the risks and affordability issues that are specific to PacifiCorp's service territory and customer base.

While this Plan addresses the elements of PUC Section 8386(c) in the manner prescribed by the applicable rulings in R. 18-10-007, the set of principles included in the Plan are evolving and are subject to change. As new analysis, technologies, practices, network changes, environmental influences, or risks are identified, changes to address them may be incorporated into future iterations of the Plan which is, in effect, a living document. In addition, the Plan integrates and interfaces with various operating policies and asset management and engineering principles which are themselves subject to change. As appropriate, the current version of documents are incorporated either as appendices to this Plan or by reference.

2. Specific Immediate, Near and Longer-Term Objectives

PacifiCorp views the specific immediate, near and longer term objectives of this plan as implementing the programs included in Sections II and IV with a positive impact on the metrics included in Section VI.

C. PacifiCorp's California Asset Overview

PacifiCorp provides electricity to approximately 45,000 customers via 63 substations and 3,300 transmission and distribution lines across nearly 11,000 square miles in northern California. See Table 1 and Figure 1 below.

Table 1 High Level Description of PacifiCorp California Transmission and Distribution Assets

Asset Classification	Asset Description
Transmission Line Assets	Assets include conductor, transmission structures, and switches operating at or above 69kV.
Distribution Line Assets	Assets include overhead conductor, underground cabling, transformers, voltage regulators, capacitors, switches, line protective devices, and street lighting operating at less than 69kV.
Substation Assets	Assets include major equipment such as power transformers, voltage regulators, capacitors, reactors, protective devices, relays, open-air structures, switchgear and control houses.

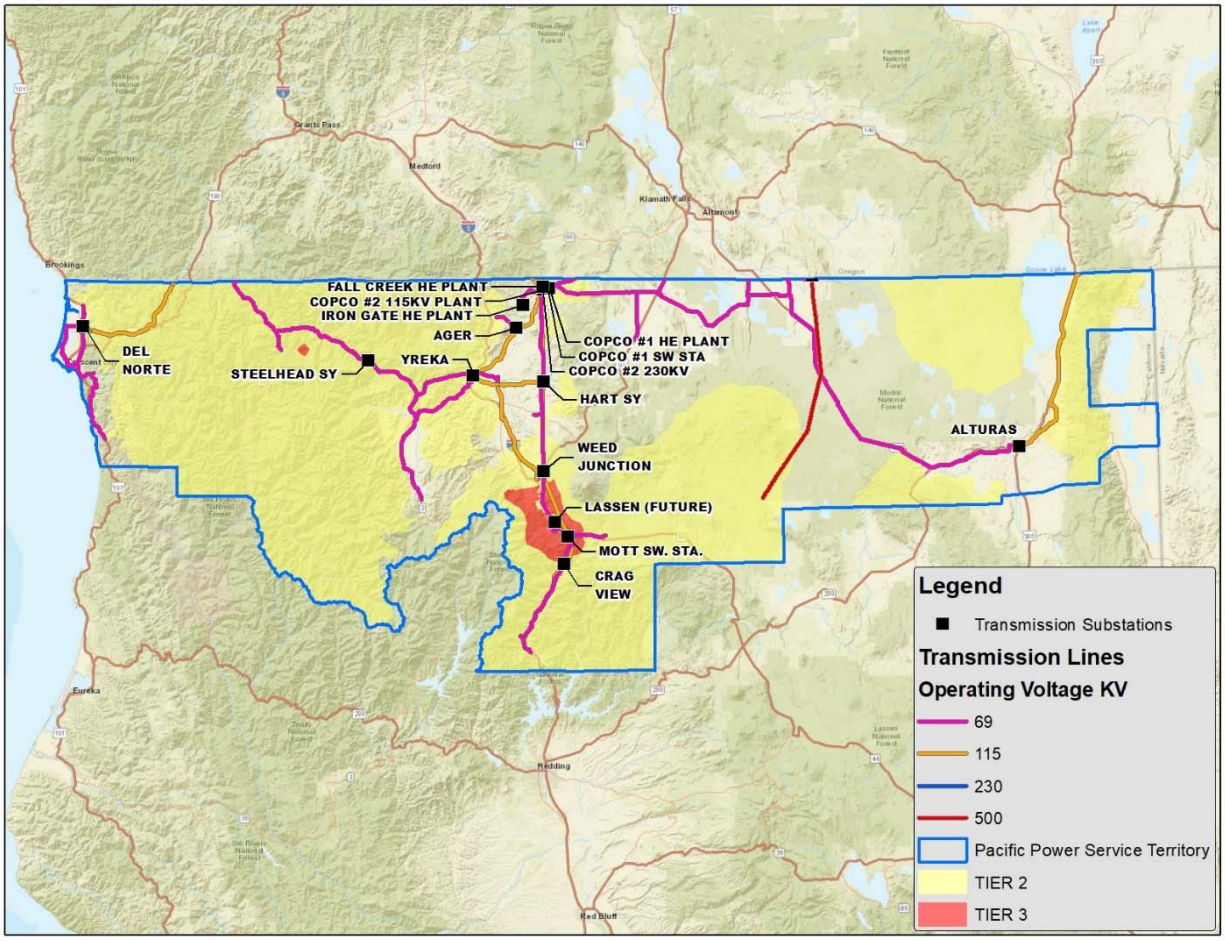


Figure 1 High Level Map of PacifiCorp's California Transmission Assets by Geographic Fire Tier

The following table includes the breakdown of PacifiCorp's assets by Wildfire Tier as shown in Table 2.

Table 2 Breakdown of PacifiCorp's Transmission and Distribution Assets by Geographic Fire Tier

Asset	Total	Non-Tier		Tier II		Tier III	
	Line-Miles	Line-Miles	%	Line-Miles	%	Line-Miles	%
Total OH Transmission	**783.9**	**390.71**	**49.8%**	**322.79**	**41.2%**	**70.36**	**9.0%**
69kV Transmission Lines	438.9	246.4	56.1%	183.0	41.7%	9.51	2.2%
115 kV Transmission Lines	245.6	109.78	44.7%	122.16	49.7%	13.69	5.6%
230 kV Transmission Lines	5.0	0	0.0%	4.98	100.0%	0	0.0%
500 kV Transmission Lines	94.3	34.53	36.6%	12.62	13.4%	47.16	50.0%
Total OH Distribution	**2,520.6**	**1,696.27**	**67.3%**	**785.2**	**31.2%**	**39.081**	**1.6%**
Total OH Lines - Miles	**3,304.4**	**2,087.0**	**63.2%**	**1,108.0**	**33.5%**	**109.4**	**3.3%**
Total Substations	**63.0**	**31.0**	**49.2%**	**30.0**	**47.6%**	**2.0**	**3.2%**

As indicated in the table above, PacifiCorp's assets are located within High Fire Threat District (HFTD) areas (including Tiers 2 and 3) and those not deemed within the HFTD (referred to as non-tier or outside HFTD in this document). Approximately one third of PacifiCorp's 3,300 overhead line-miles in California are located within the HFTD; of that approximately three percent are located within Tier 3, that area deemed "Extreme Fire Threat." Similarly, approximately half of PacifiCorp's 63 California substations are located within the HFTD, two of which are located within Tier 3.

II. Description of Preventative Strategies and Programs

PacifiCorp's planned preventative strategies and programs to minimize the risk that its electric distribution and transmission infrastructure will cause wildfires (including the impact of climate change on such infrastructure), are described in detail in Section IV of this Plan and also are summarized in table format in Appendix B.

The proposed timeframes for implementing these strategies and programs are described below.

A. Programs Identified for Immediate Implementation

Before the 2019 wildfire season, as defined by CALFIRE, PacifiCorp currently proposes to implement the following preventative strategies and programs:

Asset Hardening:

- Strategic Inspect/Correct Program Additions: Begin enhanced transmission inspection using IR/RF data collection methods
- Strategic Inspect/Correct Program Additions: Begin additional detailed device inspections, including downloading key data and observations not previously collected
- Strategic Inspect/Correct Program Additions: Develop policy for full in-situ, out-of-service testing of specific line equipment
- Strategic Inspect/Correct Program Additions: Enhance outage-initiated inspection within Tier 3
- Poles: Pre-emptively butt cladding and treating with fire proofing spray in targeted Tier 3 areas
- Equipment: Detail relay/recloser replacement plan and key delivery dates
- Technology: Identify risk-modeling software key functional attributes

Situational Awareness:

- Weather information: Install first set of local weather monitoring points
- Weather information: Acquire & train staff on lightning monitoring system
- Weather information: Develop method to share lightning and weather data collected with local weather and fire teams (NWS, CALFIRE and USFS)
- System readiness: Conduct pre-fire season patrol evaluating for proper vegetation and conductor clearances

Operational Response/Vegetation Management:

- Special Work Procedure: Fire risk tools & personnel
- Special Work Procedure: Additional patrol personnel and schedule modification
- Special Work Procedure: Live line restrictions
- Special Work Procedure: Remote construction fuel reduction/fire suppression
- Supplemental Vegetation Management: Begin implementation of annual vegetation inspection for off-cycle facilities within HFTD
- Supplemental Vegetation Management: Incorporate additional overhang removal into work plans during vegetation cycle work
- Supplemental Vegetation Management: Develop criteria for targeting higher risk tree removal during vegetation cycle work

B. Programs/Strategies Identified for Near-Term Implementation

Before the next annual Plan is filed with the CPUC, PacifiCorp currently proposes to implement the following preventative strategies and programs:

Asset Hardening:

- Poles: Continue pre-emptively butt cladding and treating with fire proofing spray in targeted Tier 3 and 2 areas
- Poles: Identify five year plan proactive for replacement wooden poles with steel structures
- Conductor: Reconductor approximately 10 miles of aerial cable
- Conductor: Reconductor approximately 5 miles of small diameter conductor (i.e. #6 CU)
- Equipment: Replace legacy relay/reclosers
- Technology: Develop programs to statistically model fault detection and device response for various fault scenarios
- Technology: Begin deployment of risk-modeling software

Situational Awareness:

- Weather information: Identify next set of local weather monitoring points
- Weather information: Evaluate lightning monitoring system data and impacts to hardening infrastructure
- System readiness: Conduct post-fire season practice assessment and outline next steps

Operations Response/Vegetation Management:

- Special Work Procedure: Continue fire risk tools & personnel
- Special Work Procedure: Continue additional patrol personnel and schedule modification
- Special Work Procedure: Evaluate impact of live line restrictions & recommend modifications
- Special Work Procedure: Evaluate remote construction fuel reduction/fire suppression tactics and recommend modifications
- Supplemental Vegetation Management: Perform annual vegetation inspection for off-cycle facilities within HFTD
- Supplemental Vegetation Management: Incorporate additional overhang removal into work plans during vegetation cycle work
- Supplemental Vegetation Management: Remove targeted higher risk tree removal during vegetation cycle work

C. Programs Identified for Long-Term Implementation

Within the next five years, PacifiCorp currently proposes to implement the following preventative strategies and programs:

Asset Hardening:

- Poles: Continue pre-emptively butt cladding and treating with fire proofing spray in targeted Tier 3 and 2 areas
- Poles: Implement five year plan proactive replacement wooden poles with steel structures
- Conductor: Reconductor Tier 3 and Tier 2 facilities as appropriate with aerial cable
- Conductor: Reconductor small diameter CU and FE conductor with stranded aluminum
- Technology: Implement as appropriate for products of risk-modeling software

Situational Awareness:

- Weather information: Continue and complete local weather monitoring points
- Weather information: Evaluate new technologies in weather modeling to inform risk decisions and operate optimally for safety and reliability

Operations Response/Vegetation Management:

- Special Work Procedure: Assess best practices and incorporate into fire season work routines
- Supplemental Vegetation Management: Perform annual vegetation inspection for off-cycle facilities within HFTD
- Supplemental Vegetation Management: Incorporate additional overhang removal into work plans during vegetation cycle work
- Supplemental Vegetation Management: Remove targeted higher risk tree removal during vegetation cycle work

III. Risk Analysis and Drivers

A. Methodology for Identifying and Evaluating Enterprise-Wide Risk

Methodology for identifying and evaluating enterprise-wide safety risk and wildfire-related risk, and how that methodology is consistent with the methodology used by other electric utilities or electrical corporations. If the risk identification and evaluation methodology is different, this section should explain why.

As required under the Commission in its December 4, 2014, issuance of Decision No. (D) 14-12-025, which exempted the investor-owned small and multi-jurisdictional utilities (SMJUs), including PacifiCorp, from the Risk Assessment Mitigation Phase (RAMP) and S-MAP requirements applicable to California's three large investor-owned utilities, PacifiCorp describes its methodology for identifying and evaluating enterprise-wide safety risk in detail in testimony submitted in support of PacifiCorp's 2019 general rate case application, Application (A.) 18-04-002 (2019 GRC). That testimony is incorporated herein by reference.

To address consistency among the SMJUs, the Commission engaged the SMJUs in informal workshops in 2018. PacifiCorp actively participated in these workshops and in related informal discussions with CPUC staff and the other SMJUs. PacifiCorp also received feedback on its risk assessment methodology in responsive CPUC filings in the 2019 GRC.

In order to meet the requirements of SB 901 and further the development of fire risk mitigating programs, PacifiCorp reviewed the company's methodology included in the 2019 GRC and then performed a subsequent fire threat-specific risk assessment for the company's California service territory. The methodology, risks and drivers of PacifiCorp's fire threat-specific risk assessment are described in Section III.D below. PacifiCorp expects that the extent to which the methodology it employed for its fire threat-specific assessment is consistent with other utilities' approaches will be a subject of this and other Commission proceedings and may be further vetted in technical workshops.

B. Risks and Drivers Identified in GRC

List that identifies, describes, and prioritizes all wildfire risks and drivers, including all relevant wildfire risks and mitigations that are identified in the Risk Assessment Mitigation Phase (RAMP). To the extent that wildfire risks and drivers have evolved since the applicable RAMP filing, those modified risks and drivers should be addressed in this section, with an explanation of the analysis that led those risks and drivers to be modified from what was presented in the RAMP filing. Each identified risk and associated driver should be attributed to at least one of the following categories: (1) Design and Construction; (2) Inspection and Maintenance, (3) Operational Practices, (4) Situational/Conditional Awareness, and (5) Response and Recovery [and include] topographical and climatological risk factors throughout the service territory.

Although PacifiCorp was not required to perform a RAMP evaluation, PacifiCorp did develop an assessment of risks and drivers, including wildfire risks and drivers, in the 2019 GRC. That work, in addition to the subsequent analysis in this document, identifies PacifiCorp's quantification of the currently-understood fire risks within its service territory.

The risk mitigation programs included in PacifiCorp's 2019 GRC, which are included in Table 3 below, broadly address the risks and drivers listed above and are classified as either (i) legacy safety/risk programs, (ii) drought response programs, (iii) fire prevention programs, or (iv) reduced risk programs. Legacy safety/risk programs represent those programs which have been integrated into operational practices. These programs include, for example, additional pole strength testing and periodic patrols. The programs categorized as drought responsive programs include measures developed by PacifiCorp in 2014 when, in recognition of the state's drought conditions, the Commission ordered utilities to incorporate drought consideration into their inspection, maintenance, and operational strategies.

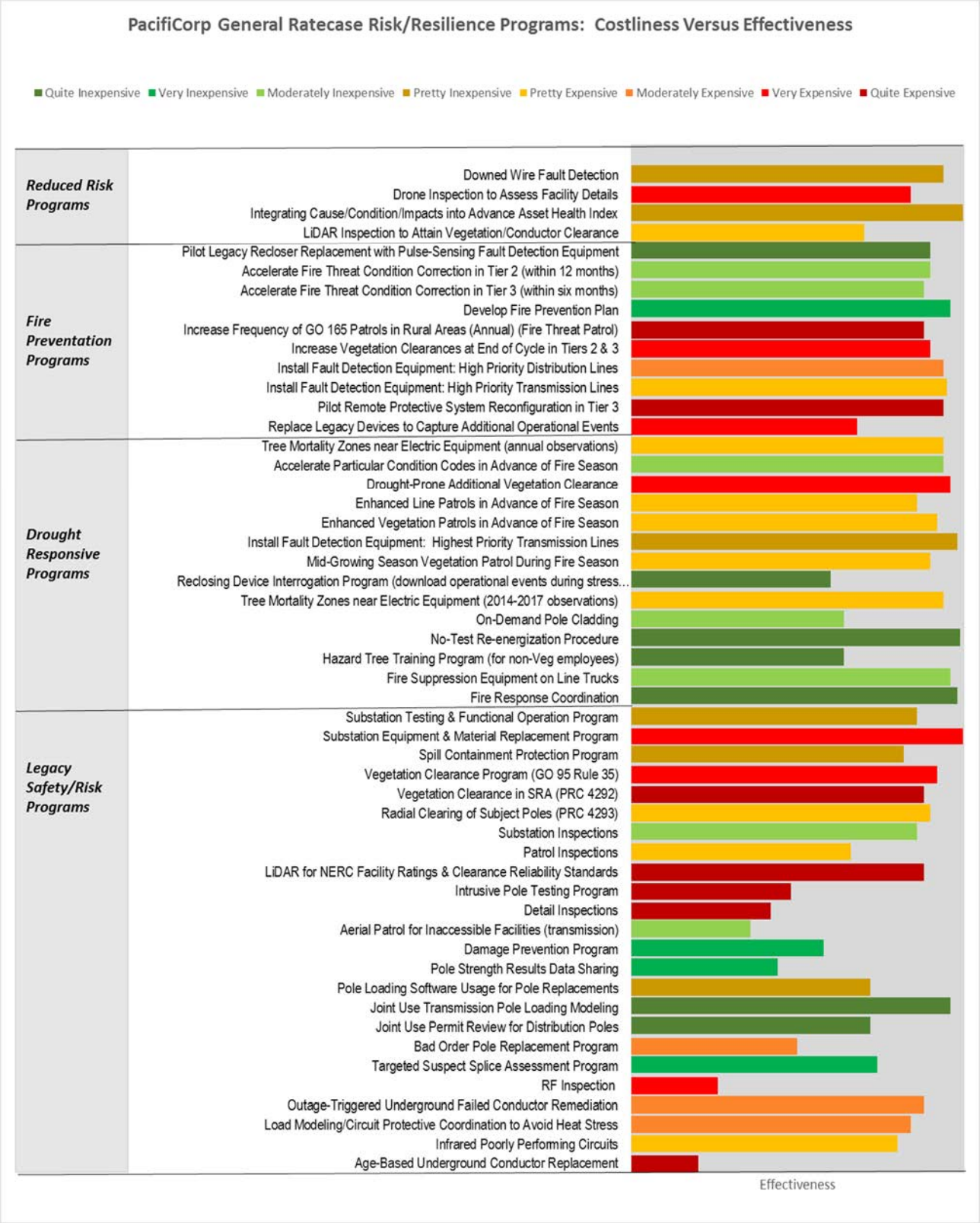
In late 2017, California GO 95, GO 165, and GO 166 were modified to mitigate conditions associated with fire risk. PacifiCorp's response to addressing these new regulations are shown as fire prevention programs.

Lastly, in recognition that certain emerging technologies, while currently expensive relative to benefit, may further reduce risk, PacifiCorp identified and incorporated potential programs into the entire roster of available measures so that, as costs and effectiveness evolve, these programs may be considered for implementation.

In addition to the list of programs, Table 3 also identifies the program's efficacy based upon estimated cost/benefit of each, which is represented by the length and color of the bar. For example, a bar that is very long but is dark red is considered very effective, but extremely expensive, while a bar that is dark green and very long is considered very effective and quite inexpensive.

Based on PacifiCorp's risk assessment in its 2019 GRC, PacifiCorp determined that only the fire prevention programs associated with the modifications to regulations for wildfire mitigation had sufficient cost/benefit efficiency to warrant implementation beyond the legacy and drought responsive programs that already had been implemented, or are currently in the process of being implemented.

Table 3 Risk Mitigation Programs as Included in PacifiCorp's 2019 GRC



C. Description of Plan Alignment with the RAMP

Description of how the plan accounts for the wildfire risk identified in the RAMP or since the RAMP, if applicable.

As indicated above, the RAMP requirements do not apply to PacifiCorp. In lieu of basing this Plan off of RAMP results, this Plan is based on the fire threat-specific risk assessment for the company's California service territory performed by PacifiCorp after submitting its risk assessment in its 2019 GRC. This new fire risk assessment, described in Section III.D. below, has informed the development of the programs and strategies PacifiCorp proposes to implement under this Plan.

D. Fire Threat Evaluation of Service Territory

Fire-threat evaluation of the service territory to determine whether an expanded High Fire Threat District (HFTD) is warranted (i.e., beyond existing Tier 2 and Tier 3 areas). This section should include a discussion of any fire-threat assessment of its service territory performed by the electrical corporation. In the event that the electrical corporation's assessment determines the fire-threat rating for any part of its service territory is insufficient (i.e., the actual fire-threat is greater than what is indicated in the CPUC Fire-Threat Map and high Fire-Threat District designations), the corporation shall identify those areas for consideration of HFTD modification, based on the new information or environmental changes. To the extent this identification relies upon a meteorological or climatological study, a thorough explanation and copy of the study should be included.

1. Historic Fire Analysis to Inform Risk

In response to the need for further development and understanding of wildfire risks in both northern California (north of 40° latitude north) and within its service territory, PacifiCorp analyzed fire history with ignition sources as available from CALFIRE data sources[1]. All fires included in this data set and subsequent analysis have been included geospatially in Figure 2 below where intense shading is indicative of more repeat fires within the specific area.

[1] The records used do not include grass fires of less than 100 acres or timber fires of less than 5 acres.

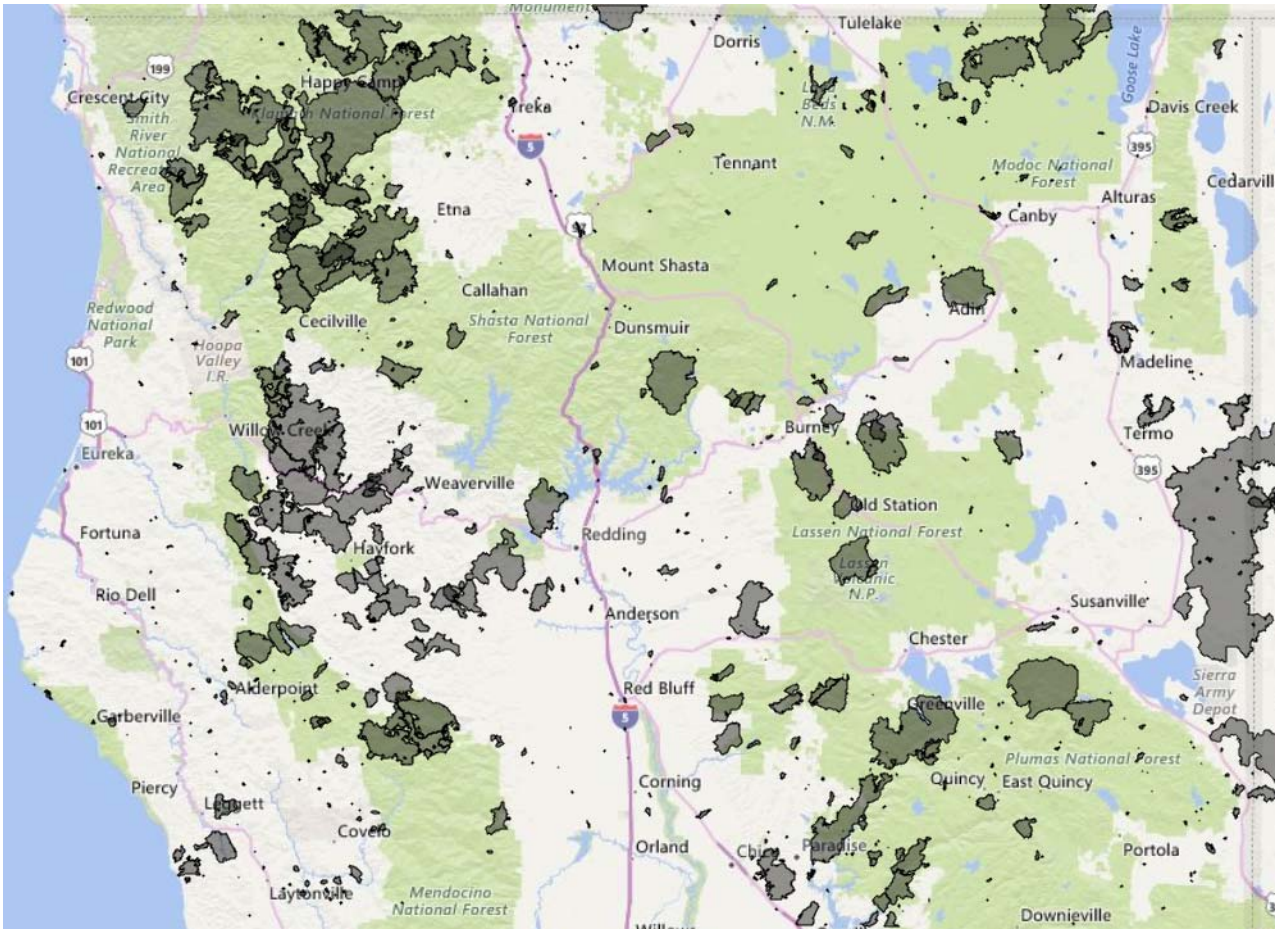


Figure 2 Northern California Fire Perimeters, 2007-2017

This analysis identified the primary cause for ignitions reported within this dataset as lightning, contributing to nearly 54% of about 1,200 records in northern California and 63% of about 240 records in PacifiCorp's service territory. In contrast, power lines contributed to 2.84% of all ignitions in northern California and 0% in PacifiCorp's service territory. See Figure 3.

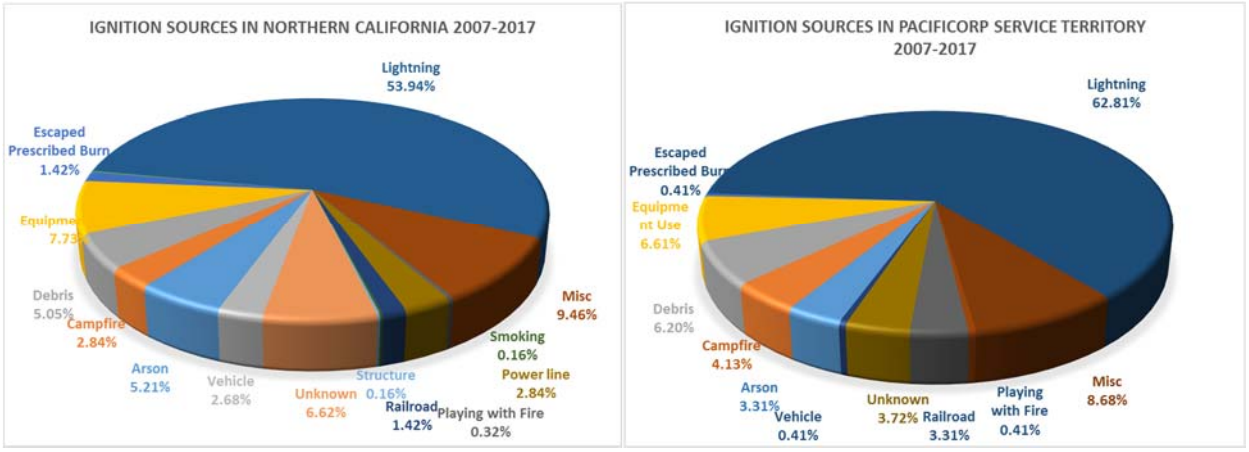


Figure 3 Fire History Ignition Sources in California

This information is further represented in Figure 4 below, identifying ignition source (by color) with the bubble size indicating the acreage burned, and graphed with the gust wind-speed and dryness, further substantiating ignition and conditions which lead to larger fires for the geography in which PacifiCorp serves.

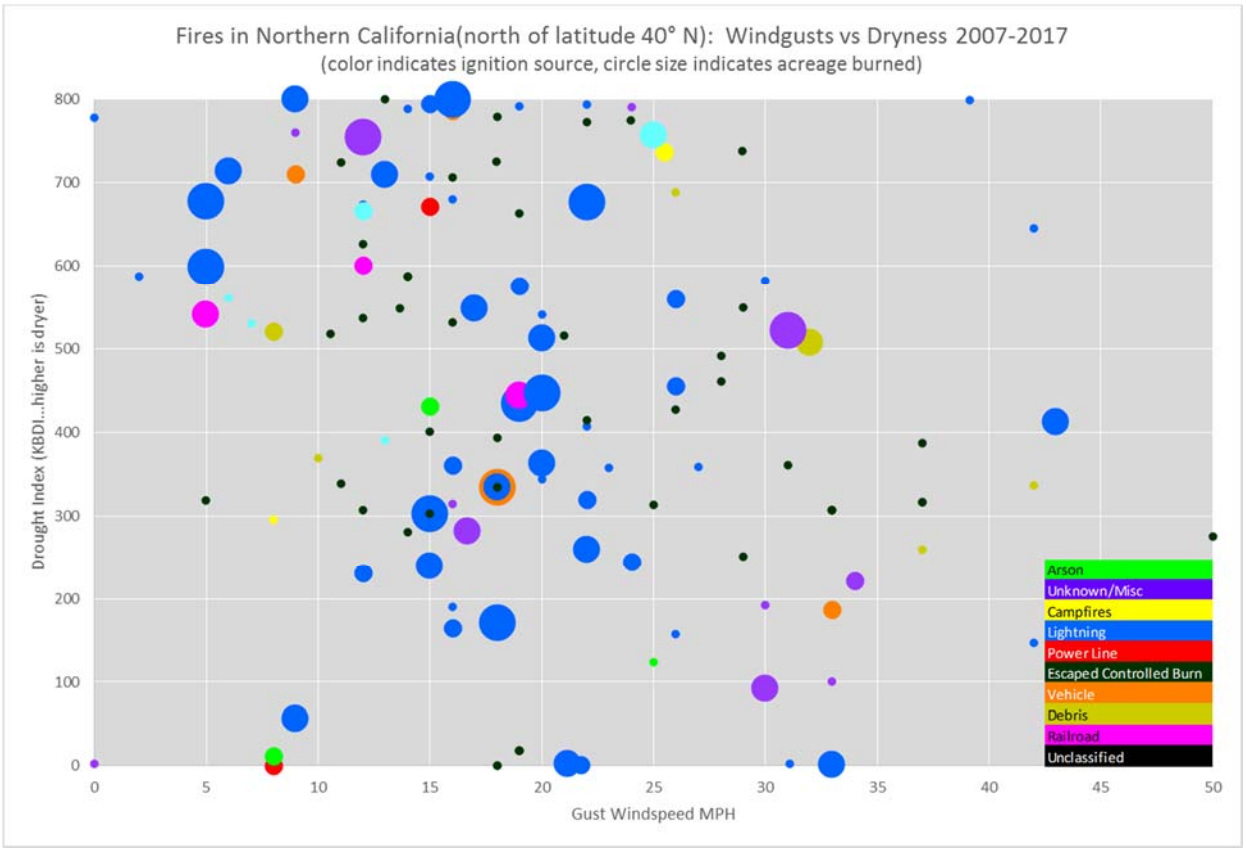


Figure 4 Fires in Northern California, showing wind speed gusts and drought indices, depicting size and ignition source

These causes were then further segregated by the location's fire threat designation, including areas inside and outside of the HFTD, as shown in Figure 5. Except the continued recognition of lightning as a primary

ignition source, no meaningful trends were apparent due to the fairly limited records within the HFTD (Tiers 2 and 3).

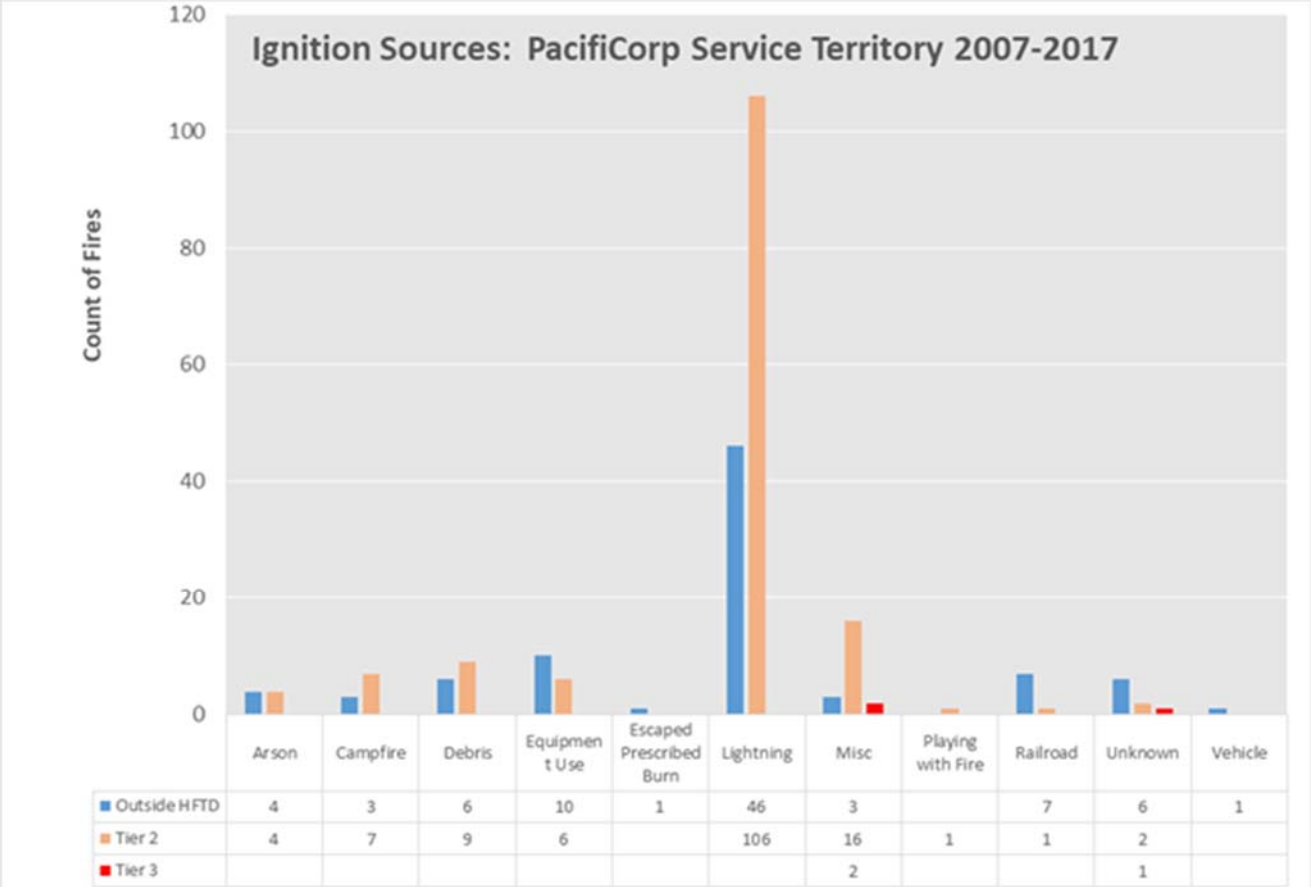


Figure 5 Fire History Ignition Source in PacifiCorp's California Service Territory by Fire Threat Designation

In order to validate the fire season in the company's service territory, PacifiCorp plotted the cumulative acres burnt against the first day of each month for the eleven-year period from 2007 to 2017, as shown in Figure 6 below. This graph shows the data points for all northern California fires and separately depicts the data points for all fires in PacifiCorp's service territory. This figure supports the general conclusion that June 1 through October 1 is a good representation of when fire risk is elevated in northern California.

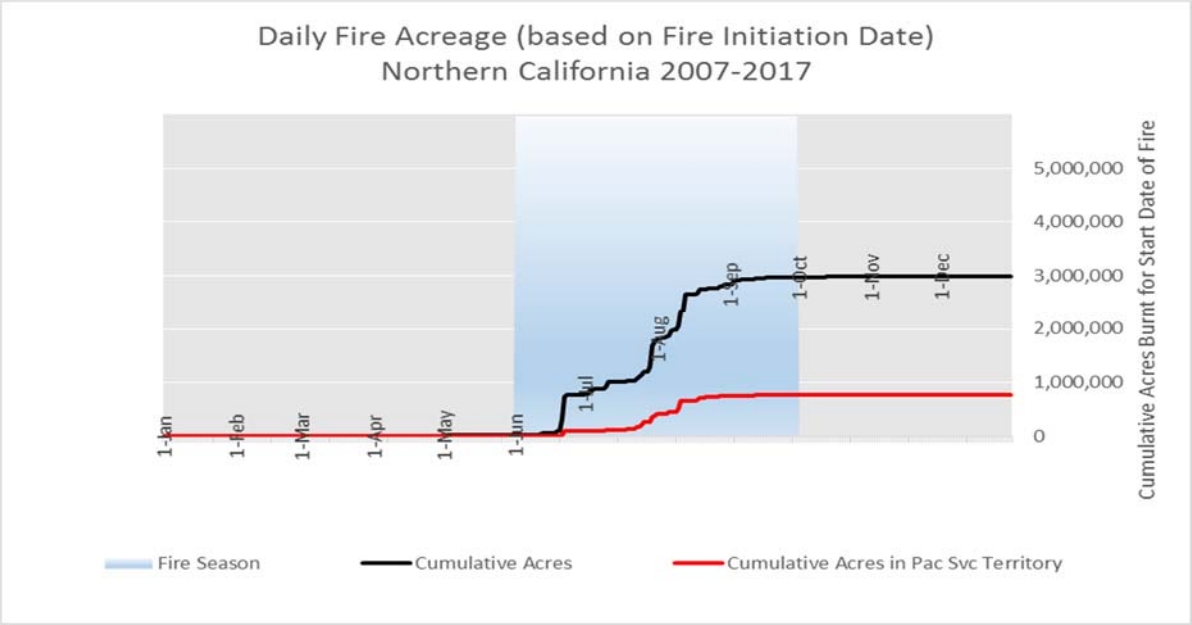


Figure 6 Cumulative Acres Burned per Northern California Fire Start Data 2007-2017

The company also evaluated its own outage records, particularly those in which the record indicated anything associated with fire. Typically these might include pole fires (where insulation has become deteriorated at the pole top, such as can occur from atmospheric pollution), situations in which outages were taken to support fire suppression activities, or those in which equipment or some other reference to fire was made by the troubleman responding to the outage record. These were analyzed to establish root causes for the specific outage. The root causes could involve animals, lightning, or other initiating events, and are geospatially represented in Figure 7.

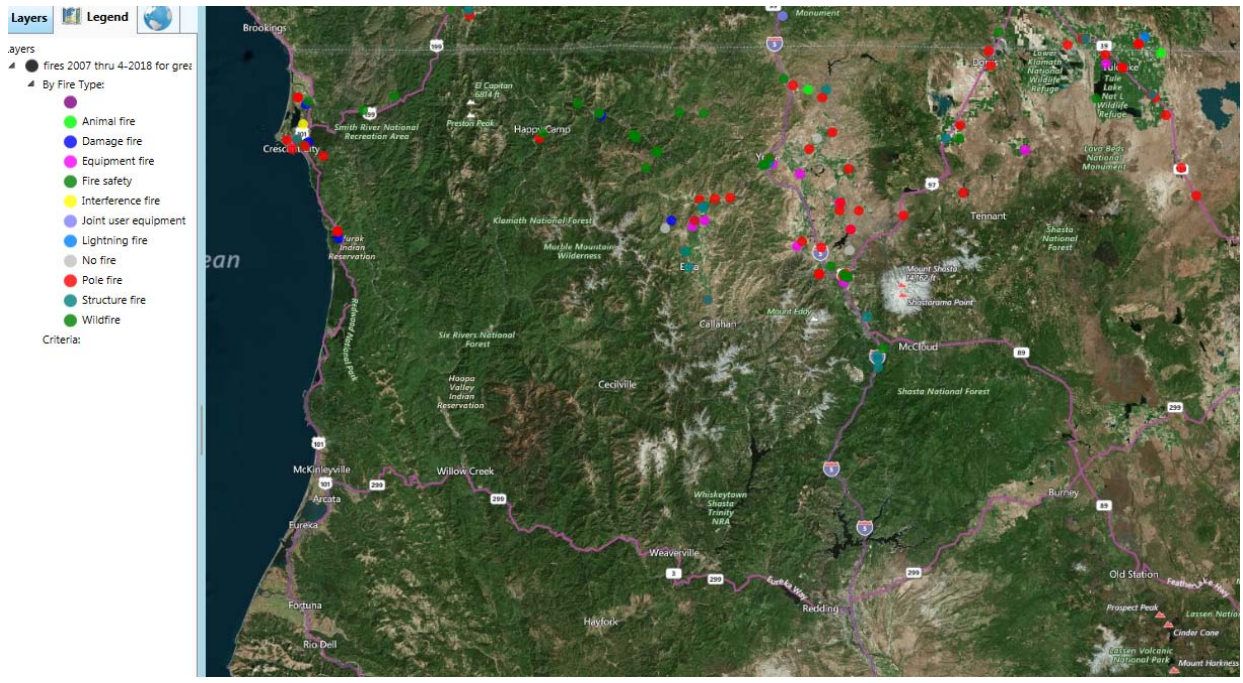


Figure 7 Historic Outages Associated with Fire in PacifiCorp's California Service Territory 2007-2018

Finally, PacifiCorp evaluated fire history against the current HFTD designations for its service territory and believes that no changes in designations are needed. Shown in Figure 8 below is a graphic with recent fire history (2000-2017) as compared to the tier designations, which supports proper classification for areas with elevated fire risks.

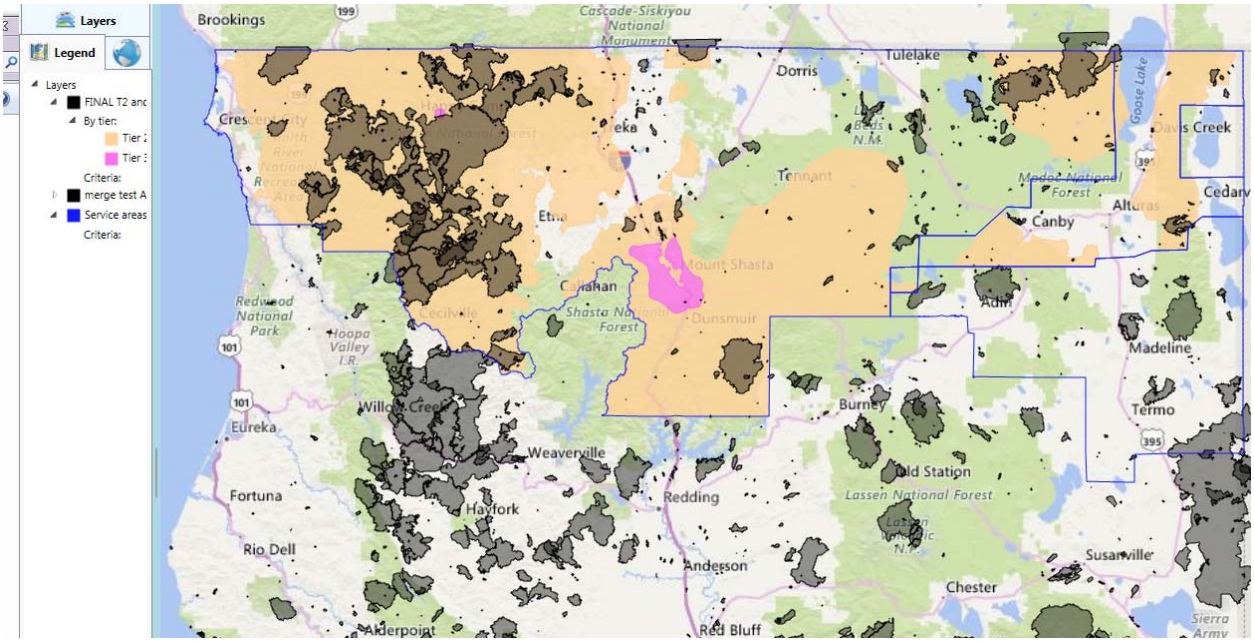


Figure 8 Comparison of Historic Fires (Fire Perimeters) versus Tier Designation

Trends were then assessed for performance over time; this analysis was constrained to the California footprint in which PacifiCorp serves, which are shown in several different ways in Figures 9-11. Although the number of records is relatively small, it appears that (i) since 2012 there has been a reduction in outages associated with fire outside of fire season, and (ii) since 2014 there has been a reduction in outages during fire season, as shown in Table 9.

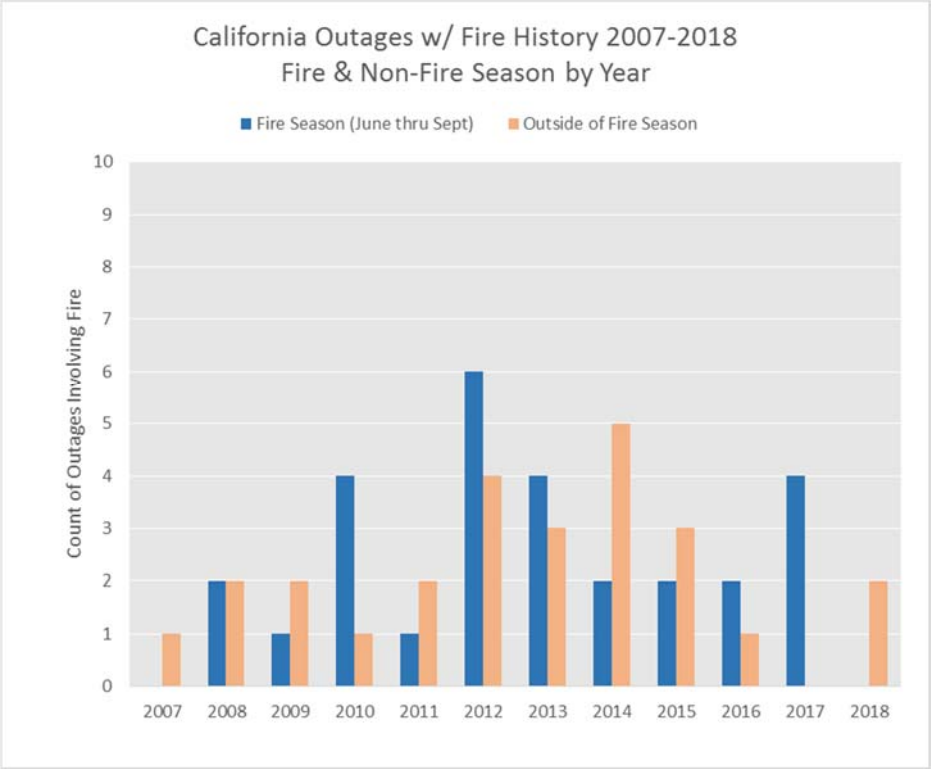


Figure 9 PacifiCorp's Outages Associated with Fire in PacifiCorp's California Service Territory 2007-2018 by Year

When plotted on a day of the year basis, as included in Figure 10, it appears there is a slight elevation in outages associated with fire during the fire season (shown in the orange band).

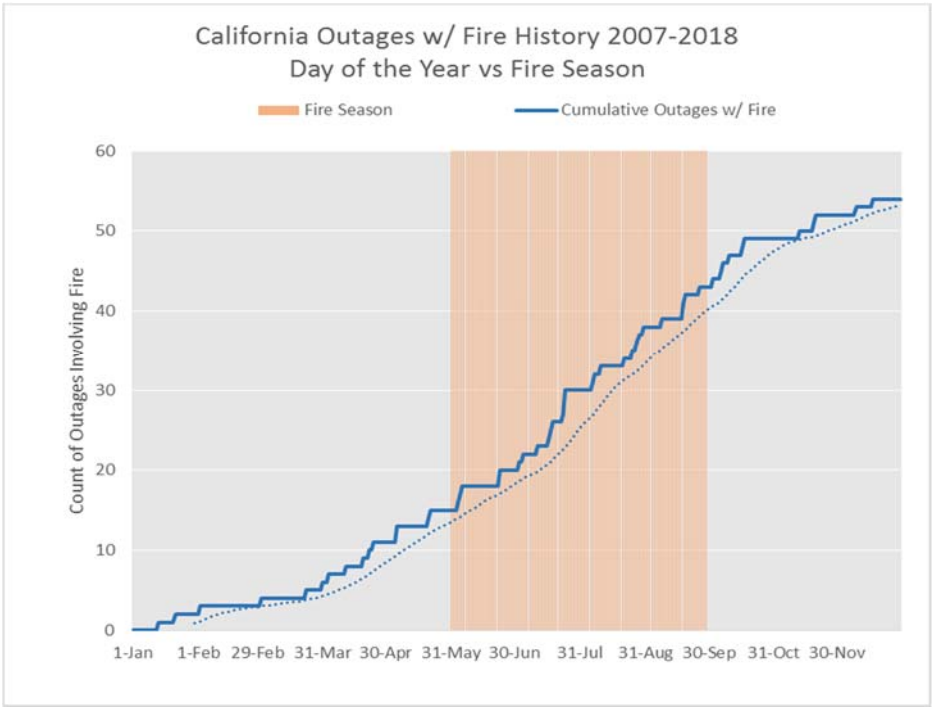


Figure 10 Cumulative Annual California Outages Referencing Fire plotted by day 2007 - 2018

PacifiCorp's outage data was also analyzed to understand what equipment, if any, was typically damaged or associated with root cause when outage records indicated the word "fire." As demonstrated by the results, distribution pole hardware stands out as the component most likely damaged from an outage involving fire.

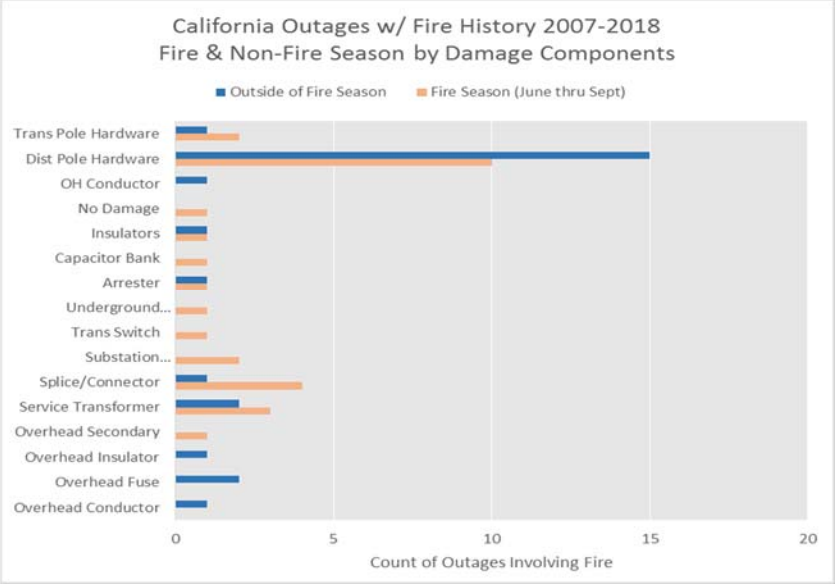


Figure 11 California Outages Associated with Fire by Damaged Components 2007-2018

Outages in which equipment damage was the cause code were reviewed in light of weather conditions at the time of the outage event to determine inherent resilience to that weather. It was determined that while certain equipment, such as poles and crossarms, was tolerant to gusts well above 30 mph, wind-borne debris appeared to result in potential equipment damage at approximately 30 mph. Thus, PacifiCorp concluded that consideration for resilience to flying objects needed to be incorporated into the company's Plan.

2. *Fire Risk Assessment Summary*

Based on both the company's review of primary causes of fires in California, as captured in the CALFIRE datasets discussed in Section III.D.1, PacifiCorp has concluded that a circumstance where the potential exists for a fault creating a spark, which could result in the ignition of a fire if it lands in an adequate fuel bed, is an electric utility related fire risk. The statewide fire threat map, ordered in Decision (D.) 17-12-024, depicts locations where such risk exists and/or is heightened and is used to ground this analysis.

PacifiCorp's outage records, which document the frequency, duration, and cause of outages experienced on energized circuits, represent the most accurate depiction of how often potential ignition events may occur within the company's service territory. All of the outage events experienced within PacifiCorp's California service territory were organized into the thirteen categories included in Table 4 (these are not necessarily the outage classification provided by field employees, but are aligned toward potential ignition sources). As indicated in the table, two of the thirteen outage categories, planned and loss of supply, involve non-energized equipment without the potential for a fault scenario and, therefore, were classified as non-ignition source outage categories and are not considered to be a fire risk. All other outage categories were classified as potential ignition sources.

Table 4 PacifiCorp's Outage Category Identification and Description

Outage Category/Ignition Source	Description	Potential Ignition Source?
EQUIPMENT DETERIORATION/ FAILURE	Deterioration of energized equipment such as a pole mounted insulator, a cross arm that has become cracked or failure of energized equipment, such as a pole mount transformer or deterioration of underground cable insulation, resulting in a potential ignition source	YES
NOT CLASSIFIABLE	Outage event with unknown cause or multiple potential possible causes identified	YES
WEATHER/WIND	Weather or wind directly affecting utility assets ability to remain energized, resulting in a potential ignition source	YES
ANIMALS	Animals making unwanted direct contact with energized assets resulting in a potential ignition source	YES
TREE-NONPREVENTABLE	Non-trimmable trees, limbs, or other vegetation with potential to make contact with energized equipment, resulting in a potential ignition source	YES
NON-UTILITY CAUSE	External factors such as car-hit-pole, theft, third party logging, dig-ins, or other commercial interference resulting in a potential ignition source	YES
ENVIRONMENT	Exposure to environmental factors, such as flooding or contamination, resulting in a potential ignition source	YES
OPERATIONAL	Operating practice or human error resulting in a potential ignition source	YES
VEGETATION	Outage attributed to trees which should have been addressed during cycle vegetation management and trimming	YES
EQUIPMENT MIS-OPERATION	Equipment mis-operation, such as a recloser, circuit breaker, relay, or switch, resulting in a potential ignition source	YES
LIGHTNING	Outage event directly caused by lightning striking either energized utility assets or nearby vegetation or equipment that, as a result, makes contact with energized utility assets	YES
PLANNED	Planned outage to performed scheduled maintenance or repairs resulting in non-energized circuit	NO
LOSS OF SUPPLY	Loss of upstream transmission supply resulting in non-energized circuits and an outage	NO

In order to assess the company's California utility fire risk, PacifiCorp performed a 5-year look back into fire season outage records for the remaining eleven potential ignition categories. See Figure 12, Figure 13, Figure 14, and Table 5 below.

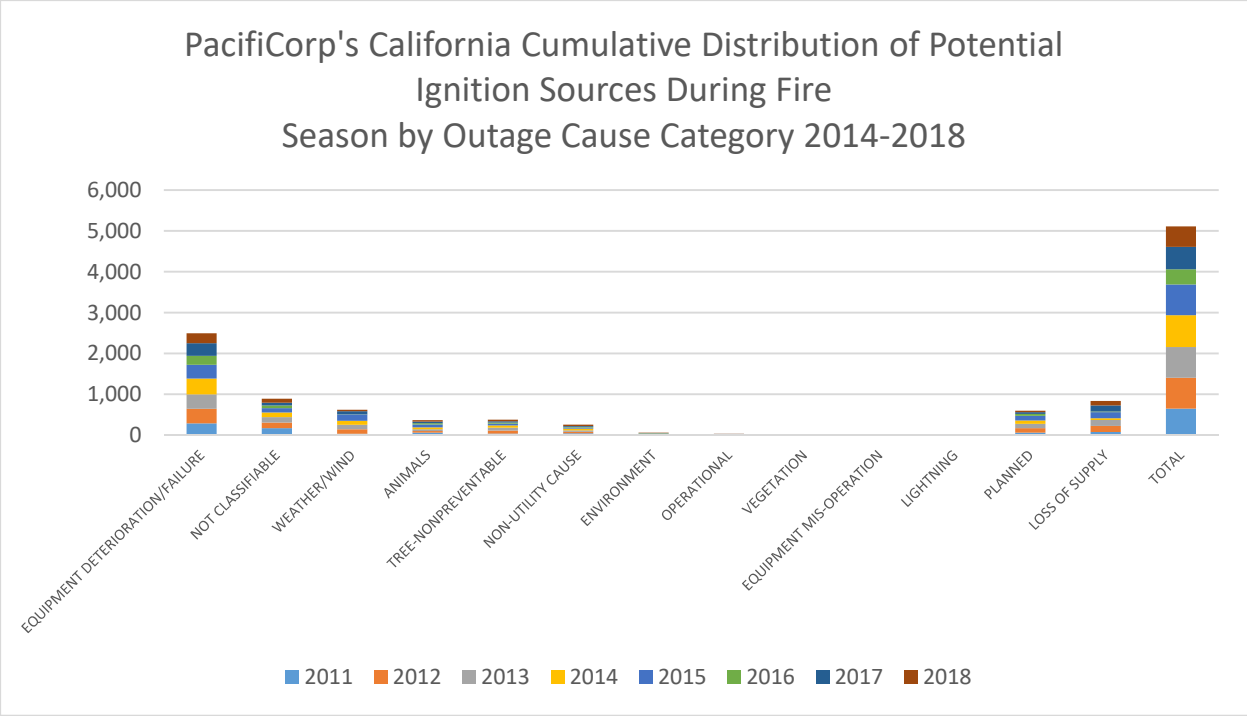


Figure 12 Cumulative Distribution of PacifiCorp's California Potential Ignition Sources by Outage Cause Category 2014-2018

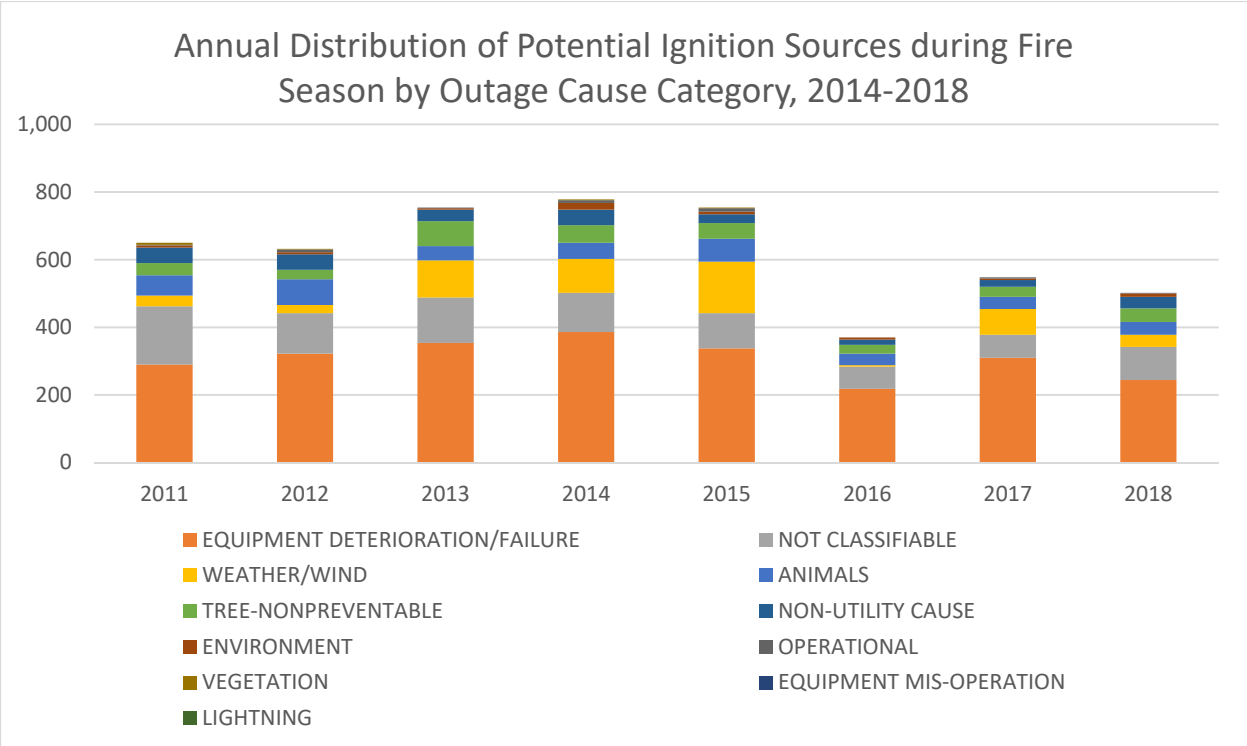


Figure 13 Distribution of PacifiCorp's California Potential Ignition Sources by Year 2014-2018

Table 5 PacifiCorp's California Frequency of Potential Ignition Source by Outage Cause Category 2014-2018

Potential Ignition Source by Outage Cause Category	2014-2018 Total Number of Events (FS)	% Contribution	Events/ Year
EQUIPMENT DETERIORATION/FAILURE	1,496	51%	299
NOT CLASSIFIABLE	452	15%	90
WEATHER/WIND	368	12%	74
ANIMALS	224	8%	45
TREE-NONPREVENTABLE	194	7%	39
NON-UTILITY CAUSE	142	5%	28
ENVIRONMENT	48	2%	10
OPERATIONAL	24	<1%	5
VEGETATION	4	<1%	1
EQUIPMENT MIS-OPERATION	0	0%	0
LIGHTNING	0	0%	0
TOTAL	2,952	100%	590

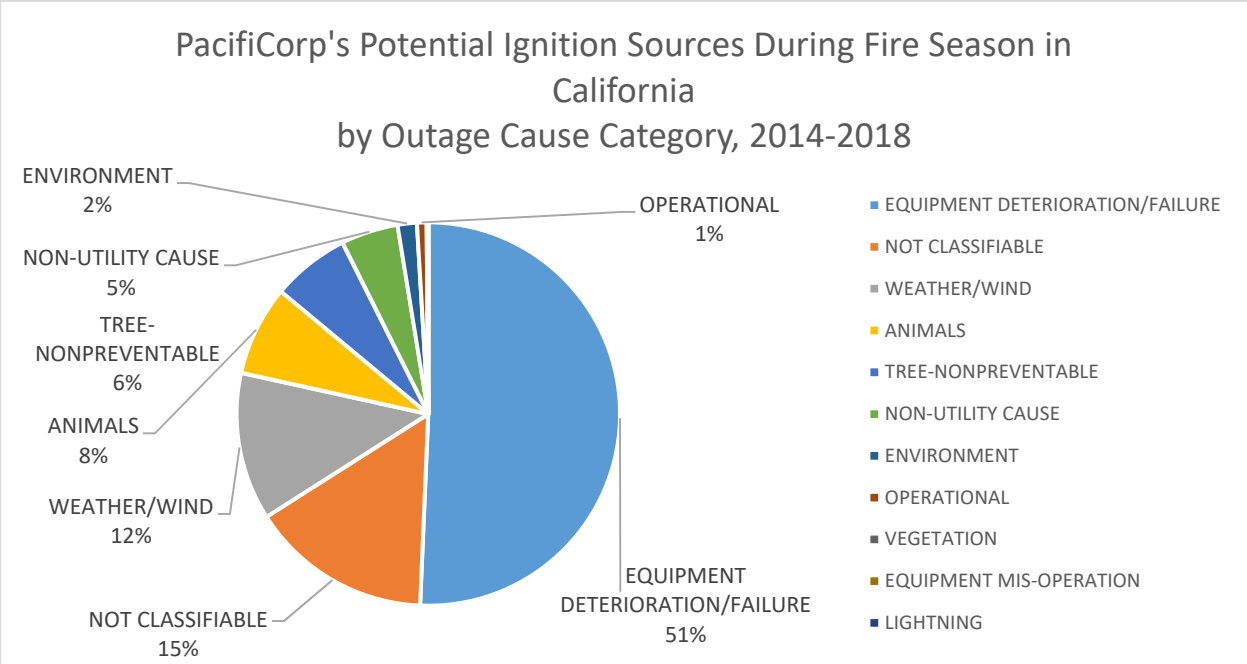


Figure 14 Distribution of PacifiCorp's California Potential Ignition Sources during Fire Season by Cause Category 2014-2018

As demonstrated by the 5 year outage data, equipment deterioration/failure presents the greatest utility related fire risk to PacifiCorp's California service territory. Additionally, the top four potential ignition sources, including equipment deterioration/failure, weather/wind, not classifiable, and animals, account for 86% of all fire threat outage events experienced from 2014-2018. In contrast, little to no outage events with ignition potential were caused by operations, vegetation, equipment mis-operation, or lightning during this time period.

PacifiCorp leveraged this analysis to identify specific fire threats, reviewed the adequacy of existing fire risk mitigation programs included in the company's 2019 GRC, and identified the need for additional fire risk mitigation programs which align with the risk level designated for each outage category with ignition potential. See Table 6. These fire mitigation programs are discussed in detail in Section IV.

Table 6 PacifiCorp's Risk Assessment Summary and Proposed Mitigation Programs

Outage Category/Potential Ignition Source	Fire Risk Ranking	Do Legacy Programs Exist Included in GRC?	Need for Change or Expansion	Proposed Additional Mitigation Programs
EQUIPMENT DETERIORATION/FAILURE	HIGH	YES	YES	- Enhanced Inspect/Correct Programs - Asset Health Indexing and risk based decision making
NOT CLASSIFIABLE	HIGH	YES	YES	- Asset Hardening: Structural - Operational Programs
WEATHER/WIND	HIGH	YES	YES	- Public Safety Power Shut-Off (PSPS)
ANIMALS	HIGH	YES	YES	- Asset Hardening: Enhanced Wildlife Protection Plan
TREE-NONPREVENTABLE	MIN	NO	YES	- Asset Hardening: Structural - Operational Programs
NON-UTILITY CAUSE	MID	YES	YES	- Asset Hardening: Structural - Enhanced Emergency Response Plan
ENVIRONMENT	MID	NO	YES	- Wildlife Assessment Program (not-protected species)
OPERATIONAL	MID	NO	YES	- Enhanced Operations Wildfire Mitigation Plan
VEGETATION	MID	YES	YES	- Enhanced Vegetation Management
EQUIPMENT MIS-OPERATION	LOW	YES	YES	- Enhanced Inspect/Correct Programs
LIGHTNING	LOW	YES	YES	- Lightning Detection for Situational Awareness - Lightning-Resilient Infrastructure Modifications

IV. Wildfire Prevention Strategy and Programs

PacifiCorp leveraged the methodology and framework included in the company's 2019 GRC filing, as well as the subsequent review of historic fire data and fire risk analysis described in Section III, to inform the company's fire mitigation plans and programs. See Table 7 below for all proposed programs and estimated cost.

All plans or programs introduced in 2018, were included in the company's 2019 GRC and are considered legacy, compliance based programs. All programs introduced in the WMP, are considered new programs which exceed the minimum regulatory requirements. These new programs are driven by the results of the company's subsequent fire risk assessment in Section III. To understand the specific risks mitigated by each program, refer to Table 6 in Section III.D.2. Additional detailed information, as requested has been included in Appendix B.

Table 7 Summary of PacifiCorp's Fire Mitigation Plans and Programs

Proposed Mitigation ($)	Introduced In	Capital or Expense	Estimated Cost
Weather Stations	2018	Capital	$200,000
Risk Analysis modeling software	2018	Capital	$1,500,000
Computer modeling of Fault Scenarios	WMP	Capital	$175,000
Lightning Detection Monitoring Service	WMP	Expense	$30,000
Additional Staffing: Fire specialist and operations response	WMP	Expense	$1,100,000
Additional Staffing: Fault event analysts	WMP	Expense	$350,000
Replace Substation Relays	2018	Capital	$3,250,000
Automatic Reclosers	2018	Capital	$1,000,000
Remote Reconfiguration of network	2018	Capital	$1,500,000
Distribution Insulated Wire	WMP	Capital	$39,954,000
Transmission Insulated Wire	WMP	Capital	$17,400,000
Replace targeted wooden structures	WMP	Capital	$24,000,000
Fusing Mitigation: Additional efforts	WMP	Expense	$250,000
System Hardening: Replace #6 CU conductor	WMP	Capital	$3,940,000
Wildlife Resiliency	WMP	Capital	$347,500
Vegetation Clearance	2018	Expense	$1,600,000
Enhanced transmission line inspections	WMP	Expense	$120,000
Enhanced distribution line inspections	WMP	Expense	$130,000
Expanded vegetation management	WMP	Expense	$2,033,421
Equipment	WMP	Capital	$300,000

A. Operational Practices

1. Reclosers and Relays

Operational considerations such as blocking reclosers and fast-curve/sensitive relay settings

Specific to the operation and setting of equipment, PacifiCorp intends to modify the operational mode of automatic reclosers at appropriate times and locations during fire season in accordance with PacifiCorp's fire season policies. The company intends to conduct construction activity within the parameters of the existing Industrial Fire Protection Levels as described within the Fire Prevention, Preparedness and Response Plan, filed as Attachment E in the company's GO 166 filing on October 31, 2018 and attached in this document as Appendix C.

2. Other Special Work Procedures during Periods of Elevated Risk

Other special work procedures during Red Flag Warning period or other conditions that presents elevated wildfire risk. If the Plan includes special work procedures during periods of elevated wildfire risk, the Plan should explain how that elevated wildfire risk is determined (i.e., what models, data, or assessments the electrical corporation uses to define elevated wildfire risk).

Overview

Because operational practices and equipment present a potential fire risk, as described in Section III.D, PacifiCorp has developed operational fire mitigation programs for implementation when working in California during fire season. These programs are focused in one of four main areas: (1) Equipment, (2) Personnel, (3) Procedures and Practices, and (4) Documentation and Data Collection. See Table 8 and the following subsections for more information.

Table 8 Summary of New Operational Practices Fire Mitigation Programs

New Program	Description	Incremental Spend
Equipment	Fire risk specific tools and requirements such as fire-extinguishers and truck exhaust modifications	$300k
Personnel	Additional personnel to accommodate alternate work schedules, and additional stand-by resources	$450k[2]
Procedures and Practices	Additional personnel and equipment to perform additional patrols and inspections for fault or switching and accommodate shifting of work to non-fire seasons	$500k[3]
Documentation and Data Collection	Enhanced investigation and data collection of fire risk events to properly inform and evolve fire risk mitigation programs	$250k[4]

[2] Spend will be accounted for in the additional staffing line item in Table 7 on page 29.
[3] Spend will be accounted for in the additional staffing line item in Table 7 on page 29.
[4] Spend will be accounted for in the additional staffing line item in Table 7 on page 29.

Equipment Program

PacifiCorp field crews working in California maintain the capability to extinguish small fires or new ignitions, assuming the fire has not spread to a size larger than one person can effectively fight while maintaining their personal safety. In the event of an ignition, PacifiCorp intends to notify and dispatch fire crews from the local jurisdiction or geographic area fire center. PacifiCorp also intends to make the following equipment available with the relevant guidance for its usage.

Table 9 Operational Practices Equipment Program Summary

Equipment	Policy/Requirement
Fire Extinguishers rates ABC-10 pound minimum	• Fire extinguishers shall be used to respond to small ignitions. • If a fire spread*s* beyond the suppression capability of workers with these tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.
Shovels, Pulaski, or Power Equipment to include back hoe or mini excavators may be used to prepare work sites previous to work or during fire suppression efforts	• All gasoline powered saws will be provided with approved spark arrestors/mufflers. Gasoline-powered chain saws will be maintained in good condition throughout their assignment to the project. • May be used to prepare work sites previous to work or during fire suppression efforts • Work sites may be required to have water tanks, water trailers, or 5-gallon water backpack (or other approved container) full of water or other extinguishing solution.

Pacific Power also maintains additional firefighting equipment which may be used to respond to small ignitions. The locations extend outside the state but are able to be deployed on a case by case basis. The following is a list of resources and their location:

Table 10 Operational Practices Equipment Program Summary

Equipment Description	Location
500 gallon water tanker and pump with ¾ inch high pressure hose	Bend
250 gallon water skid-tank on trailer	Grants Pass
500 gallon water trailer, 2 inch hose	Klamath Falls
250 gallon water skid-tank (requires trailer for movement)	Klamath Falls
500 gallon water trailer, 2 inch hose	Medford
250 gallon fire tank and pump (trailer or pickup loaded)	Pendleton
500 gallon water tanker, 3 inch hose, firefighting equipment	Roseburg
250 gallon fire tank and pump *(trailer or pickup loaded)*	Walla Walla
250 gallon fire tank and pump *(trailer or pickup loaded)*	Yakima

Personnel Program

In order to mitigate fire risk in California, PacifiCorp intends to implement the following amendments to standard operating procedures during fire season with regard to labor resources.

Table 11 Operational Practices Personnel Program Summary

Labor Component	Fire Season	Red Flag
Work Hours for Energized Lines/Equipment	6 AM – 2 PM	Shift hours, perform site specific risk assessment, or postpone activity where fuels are abundant, risk of ignition is high, and/or mitigation is challenging
Night Work Consideration	N/A	Optional for activities that present high risk for completion during the daytime
Stand-By Personnel	N/A	Additional crew resources placed on "Stand By" to ensure immediate response is available to outage needs or patrols

New or amended inspections and corrective requirements/timeline, as addressed in additional fire mitigation programs, may require additional staffing, training, or reallocation of resources.

Procedures and Practices

In addition to the work practices and procedures, as included in Appendix C, PacifiCorp identified the following additional work rules and procedures to mitigate fire risk and reduce exposure in California.

- Live line work restrictions- Planned outage work versus work on energized lines
    - Potentially review customer notification processes to include outbound calls to afford work to be completed during "red flag" periods as de-energized and emergency condition.
- PacifiCorp intends to require that work in remote areas along transmission lines include adequate preparation to clear potential fuel sources, and possess fire suppression tools and equipment.
- When working on transmission line during "Red Flag" periods, PacifiCorp intends to require that workers document a wildfire response and escape plan tailboard and discuss before work is initiated each day.

Furthermore, PacifiCorp proposes the following requirements and restrictions for potential implementation:

- District vehicles must either be diesel powered or include protective exhaust configurations to mitigate fire hazards.
- Job site standards that are applied during wildfire season must include removal or reduction in grass height or density while performing planned work around energized equipment. Operation of all vehicles must be on designated roads or park in areas where vegetation is less than 8 inches tall. Vehicles, including the undercarriages, will be cleared of vegetation accumulations and checked periodically to ensure no buildup of flammable vegetation.

- Review weather forecasts and potential fire danger, prior to any operation involving potential sources of fire ignition from vehicles, equipment, or other means. Prevention measures to be taken each workday will be included in the specific job briefing.

When responding to an outage, PacifiCorp intends to take the following additional precautions to minimize the possibility that an outage does not result in a fire risk.

- Outage response to faults or system interruptions may require de-energization. In cases where customer communication is not possible before an outage is taken, an outbound call will be conducted soon after to inform customers of the cause and estimated time of restoration. These specific outage incidents will be individually cause coded and will not be included in underlying reliability reporting metrics.
- Proactive patrols after re-energization post-outage restoration, or switching to restore customers will be performed during red flag conditions.

Documentation and Data Collection

PacifiCorp intends to document all fires associated with facilities at the time of the event using internal reporting methods.

The company plans to staff a dedicated position to perform post-fire investigations, preparing needed documentation for internal and external reporting. Perform inspection work of lines to verify compliance reporting, and act in an advisory role in coordinating proactive wildfire corrective and design plans.

3. Wildfire Infrastructure Protection Teams

PacifiCorp has not staffed a Wildfire Infrastructure Protection Team, rather it has evaluated its operational organization to determine alignment with supporting routine, emergency and fire operations to field teams which are flexible but able to accommodate each operational mode.

B. Plans for Inspection and Maintenance

Plans for inspection and maintenance of electrical infrastructure.

A cornerstone of a resilient system relies on inspection and correction programs tailored to identify situations in which the infrastructure may no longer be able to operate per engineered design, become susceptible to external factors, and result in premature failure and potential fault scenarios. Specific to fire risk, conditions associated with equipment deterioration or failure was identified.

Legacy Inspection/Correct Programs[5]

Consistent with California GO 165, California GO 95, and prudent utility practice, PacifiCorp performs multiple types of inspections on all transmission and distribution assets as described in Table 12.

Table 12 PacifiCorp California Inspection Description Summary

Inspection Name	Description and Assets Included
Detailed	Detailed inspections are intended to be careful visual inspections accomplished by visiting each structure as well as inspecting spans between structures to adequately identify nonconformance with California GO 95 and GO 165, infringement by other utilities or individuals, defects, potential safety hazards, and deterioration in order to maintain reliable and safe service. The specific equipment inspected included poles, underground dip-pole equipment, guys, anchors, grounding, climbing space, service conductors, secondary service conductors, energized equipment such as transformers, capacitors, and regulators, switches an disconnects, crossarms and braces, insulators, primary conductors, street lights, and enclosures/fencing.
Safety/Visual Assurance	Safety/visual insurance, also known as patrol, is a brief visual inspection performed by viewing each facility point intended to identify obvious damage or defects to the transmission and distribution system, including nonconformance that could potentially result in an ignition source, right-of-way-encroachment, or public safety hazard. The specific equipment visually inspected includes but is not limited to poles, cross arms, insulators, conductors, risers, pole mounted transformers, surface mounted equipment, trees, and any potential condition that could result in ignition.
Detailed Pole Test & Treat	Specific inspection and testing conducted to assess the existing condition of transmission and distribution poles and, based on condition found, perform any required treatment to prolong life or flag for near term additional repair/reinforcement/replacement. Visual inspections include the identification and measurement of external decay or wear and wood-pecker damage. In addition, the specific tests performed include pole-sounding, inspection hole drilling, and excavation. All information gathered is used to determine pole shell thickness and strength. Based on the results, poles are then either treated, replaced, reinforced, or a combination of the above.
Detailed Hold Down Inspection	Specific inspection performed to identify non-conformity of transmission structures to include the structure itself, glass and polymer insulators, cross-arms, and hardware such as nuts and bolts. Depending on location and accessibility, the inspection may be performed by ground, helicopter, or unmanned aerial system (UAS).
Substation Inspection	Substation inspections include the assessment of physical safety, security, and performance of substation components, including fencing, grounding, and major equipment, as well as the performance of minor housekeep tasks to ensure safe and reliable service.

[5] Legacy inspection/correction programs are regulatory driven and were included in PacifiCorp's 2019 GRC.

Table 13 PacifiCorp's California Inspection Program Summary

Asset Classification	Inspection Name	Minimum Frequency
Main Grid Transmission	Safety/Visual Assurance	Every year
	Detailed Inspection	Every 2 years
	Hold Down Inspection (by insulator type)	Polymer/glass – every year Glass only – every 2 years
	Detailed Pole Test and Treat	Every 10 years
OH Local Transmission	Safety/Visual Assurance	Every year
	Detailed Inspection	Every 5 years
	Hold Down Inspection	Polymer/glass – every year Glass only – every 2 years
	Detailed Pole Test and Treat	Every 10 years
OH Distribution	Safety/Visual Assurance	Tier 2 & 3 - Every year Non-Tier - Every 2 years
	Detailed Inspection	Every 5 years
	Detailed Pole Test and Treat	Every 20 years
UG Distribution	Visual Assurance	Every 2 years
	Detailed Inspection	Every 4 years
Substation	Detailed Inspection	Every month

The intent of each type of inspection above is to identify existing conditions not compliant with engineered design or code requirements, classify and prioritize these conditions based on inherent risk, and correct these conditions in a timeline consistent with the risk assigned. In order to do so, each condition is assigned a priority based on the definitions below.

Priority A: Conditions that do not conform to the California GOs and that meet the requirements for an "A" priority, or that in the opinion of the inspector demonstrate a high potential impact to safety or reliability. See California GO 95 Appendix I, page 1 for details. In addition, items that pose a significant present threat to human life or property shall be considered a safety hazard and action shall be taken immediately. See GO 95 Appendix I, page 5 for details and examples. In GO 95, Priority A conditions are called Level 1 conditions.

Priority B: Conditions that do not conform to the California GOs and that meet the requirements for a "B" priority, or that in the opinion of the inspector demonstrate at least a moderate potential impact to safety or reliability, including fire threats. See GO 95 Appendix I, page 3 for details. In GO 95 Priority B conditions are called Level 2 conditions.

Priority C: Conditions that do not conform to the California GOs and that meet the requirements for a "C" priority, or that in the opinion of the inspector demonstrate a low potential impact to safety or reliability. The C-condition priority level is used for PacifiCorp facilities and is not used for communications. See GO 95 Appendix I, page 4 for details. In GO 95 Priority C conditions are called Level 3 conditions.

Priority D: D conditions are issues that are not California GO conformance issues, may not involve correction, and are recorded for informational purposes. These items typically involve reliability or informational issues that are recorded for engineering and planning purposes such as “locked gate” and “missing intersection identification sign.”

Priority G: Conditions that conformed to California GO requirements that were in place when construction took place but do not conform to more current code revisions. These are “grandfathered,” are considered conforming, and are recorded for future inspection references and audit purposes.

A critical component of the inspection and correction programs is the proper assessment and classification of fire threats according to new GO 95, Rule 18A requirements. Consistent with the methodology described in Section 2, PacifiCorp designates conditions which could have a correlation with ignition as fire threat conditions. Depending on the severity of the condition, fire threat conditions may receive either an A or B priority level, and correction timeframes comply with GO 95, Rule 18.

The following table describes the risk associated with each condition priority as described above and includes PacifiCorp’s required timeline for corrections, including fire threats, consistent with California GO 95 requirements.

Table 14 PacifiCorp's California Condition Classification and Correction Timeline Requirements

Condition Priority Classification	Description	Timeline for Correction
A	Risk of high potential impact to safety or reliability including fire threats	Within 30 days
B	Any other risk of at least moderate potential impact to worker safety or reliability including fire threats	Variable 6 - 36 months See Table 15
C	Any risk of low potential impact to safety or reliability	Within 60 months

PacifiCorp’s required correction timeframe for B Priority conditions is dependent on both the nature of the condition and the geographic location. Fire threat B Priority conditions must be corrected within 6 months in Tier 3 locations and within 12 months in Tier 2 locations. In addition, any B Priority condition that is deemed a worker safety risk must be corrected within 12 months. All other B priority conditions must be corrected within 36 months.[6] See Table 15.

[6] Per Decision 18-05-042 issued June 7, 2018.

Table 15 PacifiCorp's B Priority Correction Timeframe Requirements in Months[7]

Wildfire Tier	Fire Threat Conditions	Non Fire Threat Conditions	
		Worker Safety Risk	Other
Non HFTD	N/A	12 months	36 months
Tier 2	12 months	12 months	36 months
Tier 3	6 months	12 months	36 months

In addition to the line inspections above, PacifiCorp also performs the following equipment maintenance and inspections to assess the health and performance of the asset and ensure safe and reliable operation.

Table 16 PacifiCorp California Equipment Inspection Description and Frequency

Equipment	Description	Frequency[8]
Substation Transformers (< 40 years)	Collection and analysis of oil samples for quality and dissolved gas analysis to assess condition	>230kV Voltage – annually <230kV Voltage – every 3 years
Substation Transformers (> 40 years)	Collection and analysis of oil samples for quality and dissolved gas analysis to assess condition	All voltages - annually
Substation Circuit Breakers	Routine maintenance, battery replacement, and operation of substation circuit breaker with frequency dependent on manufacturer, model, and voltage class	Exercise Breaker – annually Battery Replacement – every 3 years Minor maintenance – every 3-6 years Major overhaul – every 6-10 years
Substation Regulators	Collection and analysis of oil samples for quality and dissolved gas analysis to assess condition	In Tank models – every 4 months Other models - annually
Line High Voltage Switches	Visually inspection and battery replacements	Every 3 years
Line Fault Indicator	Visual inspection and battery replacement	Every 8-9 years depending on manufacturer recommendations
Line Reclosers	Inspect functionality and condition of battery, and operational counts	Every 2-3 years depending on manufacturer recommendations

[7] Per GO 95 Rule 18, as amended by Decision 18-05-042 issued June 7, 2018.
[8] Per PacifiCorp's existing policies and in alignment with California code requirements.

New Proposed Inspect/Correct Programs

As demonstrated by the risk assessment performed in Section III, equipment deterioration/failure presents the greatest utility-related potential ignition source within PacifiCorp's California service territory. PacifiCorp intends to increase the scope of the legacy inspection/correction programs further mitigate fire risk within PacifiCorp's California service territory. See Table 17.

Table 17 PacifiCorp's Proposed Inspect/Correct Program Enhancement

Program/Inspection Name	Description	Proposed Frequency[9]	Estimated Annual Impact ($)
Enhanced Transmission Line Inspections	Additional inspection performed via either helicopter or UAS technology to collect Infrared (IR) and Radio Frequency (RF) data along transmission lines to identify sub-standard or loose connections and additional hot spots.	Annually	$120,000
Enhanced Line Equipment Inspection	Detailed inspection of line capacitors, line regulators, line capacitors, and line reclosers, specifically focused on assessing leaks, bulging tanks, open fuse(s), and missing or incorrectly installed avian protector. Data collected, such as counter operations, will be used to identify potential system or equipment problems that could present fire risk.	Annually – Tier 2/3 Every 2 Years – Other	$90,000
Enhanced Line Equipment Maintenance	Full de-energization and testing of line equipment and replacement of deteriorating or damaged equipment prior to placing back in service	Every 2 years - Tier 2/3 Every 5 years - Other	$40,000
Feeder Zone Inspections	Additional proactive patrol inspection based on known system conditions, such as limited access and outage history, focused on identification and eradication of fire threats in Tier 2 and 3 geographic locations	Annual – Spring[10]	$20,000

[9] Frequency of proposed programs/inspections reflects PacifiCorp's best estimate based on available knowledge and prudent utility practices. PacifiCorp anticipates using data collected during these new inspections to further inform required frequency and anticipates changing the frequency at a future date to better reflect a risk-based approach.

[10] PacifiCorp proposed performing this additional feeder zone patrol inspection once annually in the spring, with the intent of completing the inspection prior to the beginning of fire season each yeah. Should the industry or PacifiCorp's interpretation of fire season change, PacifiCorp may alter the preferred season to perform this additional patrol inspection.

Asset Health Indexing Program

In alignment with the risk-based decision making framework as described and included in the company's 2019 GRC, PacifiCorp intends to continue refinement of the asset health indexing through incorporation of data collected through both legacy and enhanced inspection/correction programs in order to assess equipment status, evaluate potential exposure, and escalate key transmission and distribution utility assets for proactive replacement which present fire threat or risk. As products are developed which further quantify the reduced risk for a variety of safety considerations, the company intends to provide updates of the program.

Geographic Information System (GIS) Data Availability Plan

Plans for how to make GIS data about location of electric facilities available to the CPUC and CAL FIRE, including designated contact persons for GIS-related data requests. Data may include, but is not limited to, files showing location of infrastructure, outage maps, vegetation databases, and any other data requested.

Upon request, PacifiCorp intends to make its GIS electric facility data available to the Commission and CALFIRE with proper confidentiality agreements and protections in place. The Director of GIS Mapping and Data, T&D Operations has been designated as the contact person for this request.

C. System Hardening

System Design – summary of the programs, investments, strategies, technologies, policies, and procedures that electrical corporation has deployed in the past or that proposes to deploy in the future as part of its effort to prudently manage its mitigation of wildfire risks. To the extent that the electrical corporation system design elements proposed for future deployment, the Plan should indicate when the deployment will begin, how long it will take, and what continual improvement features are built into monitoring and updating systems designs.

The components of this section are intended to address the elements of the template, IV.C.1-7, specifically equipment design, structure design, pole loading, conductor, protection, equipment and alternate technologies.

Given the nature of the risks identified in Section III and included in Table 6, the asset hardening, standards, and system design fire mitigation programs have been developed to improve structure and wildfire resistance. Structure resilience includes the replacement of existing or implementation of new technologies and designs to reduce the susceptibility of PacifiCorp's T&D assets to external factors such as contamination and incidental contact or unforeseen impact loads. Wildfire resilience employs a similar concept, but targets the reduction in susceptibility of certain locations and equipment types from interference from animals.

Reliability Triggered Resilience

Pacific Power uses operational data, such as momentary and sustained outages, to identify where circuit modifications need to occur. It establishes thresholds for outage events, based on type of auto-isolation device (such as fuses), and when those thresholds are exceeded (when outages are no longer random but indicative of a persistent issue), field engineers and operational staff interrogate devices and perform targeted line inspections and, based on these findings, may identify the need for remediation, such as re-sagging, installation of spacers, or intersetting poles. These findings may also precipitate fuse coordination activities as well.

Structures are replaced and/or upgraded based on a variety of triggers. These can include the results on intrusive testing (conducted on a periodic basis in compliance with GO 165). If joint users request attachment authority for poles with insufficient strength, poles may be replaced to accommodate their attachments. Further, if PacifiCorp is reconductoring or modifying its circuit equipment and, upon strength calculations, determines that the new installation will not meet Section IV of GO 95, a pole upgrade will be required. Finally, if inclement weather results in damaged poles and/or crossarms, pole replacement may be accomplished in connection with restoration activities.

PacifiCorp patrols its equipment in compliance with PacifiCorp's fire season policies, evaluates its subject poles in compliance with PacifiCorp's fire season policies, and conducts vegetation management in compliance with GO 95, Rule 35. It also coordinates with the CALFIRE and the USFS. With the modifications to GO 95, the company is currently reconfiguring its vegetation management cycles and timing in order to attain adherence with the new rules.

PacifiCorp evaluates the need for line clearance expansion as it conducts inspections throughout its system. Further, as discussed in response (1) above, fault events may also highlight the need for additional reconfiguration of circuits.

Structural Resilience

As part of the company's routine targeted reliability program, evidence of repeated fault operations are investigated on a prompt basis, using the company's web-based notification tool. Where more substantial system modifications are required, this work is integrated into the company's annual reliability program and individual projects created to queue the necessary work into the project pipeline. This plan contemplates continued operation of that plan, augmenting as outlined below.

In 2011 PacifiCorp piloted installation of aerial cable systems (spacer cable) in its Tulelake area. Results from this and subsequent projects have been highly successful. By its design, spacer cable is resilient to incidental contact (such as from animals, mylar balloons or limbs), electrical contacts (such as lightning) and impact loads (such as mechanical forces from wind-borne debris or trees). The installation costs for spacer cable are a fraction of that compared to install an underground system and do not require reconstruction of the customer's point of attachment, minimizing cost consequences to customers.

To move such benefits forward, the company proposes to install spacer cable in Tier 3 areas (and all circuits electrically-connected to those areas). Further, PacifiCorp proposes the installation of multipoint grounding systems, which are more sensitive to fault events. Additionally, the company intends to install the messenger outfitted with damaged monitoring signal. Further, PacifiCorp intends to require that joint use attachments also use weak-link (breakaway) design so as not to fail the structure in the event of substantial mechanical forces.

In summary, PacifiCorp's proposed reconductor for insulation programs include locations in Tier 3 as well as those electrically connected to Tier 3; the company will consider whether sources outside Tier 3 might result in greater safety and reliability for serving the connected customers. The proposed costs of these projects have been included below.

Table 18 PacifiCorp's Asset Hardening/Reconductor Plan

Reconductor	District	Tier Designation	Quantity	Cost/Mi	Extended Cost
Distribution Overhead	Yreka/Mt Shasta	Tier 3	38.72	$200k	$7.744 million
Distribution Overhead	Yreka/Mt Shasta	Tier 2-Electrically Connected to Tier 3	149.8	$200k	$29.96 million
Transmission Overhead	Yreka/Mt Shasta	Tier 3	23.2	$750k	$17.4 million
Damage conductor equip monitoring	Yreka/Mt Shasta	Tier 3 & electrically connected	9	$250k	$2.25 million
Total					$57.354 million

Certain conductor sizes and types are potentially less able to operate in a coordinated manner with other devices and customer loads on the electrical network and as a result, their potential replacement is an element of the company's mitigation plan. The scope of this proposed replacement includes replacing small diameter copper and iron conductors throughout the state with aluminum stranded conductor,

using tier designation to prioritize specific locations. If any location is to be considered for aerial cable reconductoring, the section will be prioritized for that work.

Table 19 PacifiCorp's Proposed Small Diameter Conductor Replacement Program

Small Diameter Conductor Replacement					
Reconductor	District	Tier Designation (Tier 2 prioritized over non-tier)	Quantity (miles)	Cost/mile	Extended Cost
Distribution Overhead	Yreka/Mt Shasta	Tier 2 & non-tier	17.8	$75k	$1.34 million
Distribution Overhead	Alturas/Tulelake	Tier 2 & non-tier	26.5	$75k	$2.0 million
Distribution Overhead	Crescent City	Tier 2	8.7	$75k	$0.6 million
Total					$3.94 million

PacifiCorp also plans to assess the transition of certain structures at key locations to be transitioned from wooden to steel structures. The company estimates approximately 10% of its poles will be targets to be transitioned to steel structures. Fundamentally, locations that are likely to experience more substantial impact loads, which includes locations where large trees or branch elements, ice loading or heavy wind locations are ideals. The company plans to establish criteria to be assessed as locations are further evaluated for their specific risk profiles. In addition, the company has had success with pole cladding and fire proof spray coating in advance when fires have threatened its equipment. As a result, targeted treatment for poles is planned. Finally, in certain areas, removal of ground cover at the bases of poles (not subject poles, as identified in Public Resources Code (PRC) § 4292) can further result in greater resilience to wildland fires in facilitating more rapid restoration after the fire has passed through an areas.

Table 20 PacifiCorp's Proposed Pole Strengthening/Preservation/Restoration

Pole Strengthening/Preservation/Restoration					
Pole Strengthening	District	Tier Designation (Tier 2 prioritized over non-tier)	Quantity (poles)	Cost/pole	Extended Cost
Replace wooden poles with steel structures	Statewide	Tier 2 & 3	4,000	$6k	$24 million
Clad pole butts & fire resistant spray	Statewide	Tier 2 & 3	TBD	TBD	TDB
Remove ground cover from specific (non-subject) poles	Yreka/Mt Shasta	Tier 3	TBD	TBD	TBD

In addition, not individually or specifically cost estimated, but considered for inclusion in resilience improvements include:

- Adopt lightning detection software to identify impending lightning events and track lightning strikes throughout service territory to improve operational response to such events; archive data for subsequent analysis (estimated $30,000 annual subscription cost).
- Improve conventional construction joint use attachment resilience by ensuring weak-link design that breaks away from the pole without use of solid mount and steel core messenger as the breaking point. Breakaway elements cannot be loose to wind forces.
- Road crossing patrols to determine locations where structural damage could occur due to clearance of overhead equipment.
- Pursue pole strength restoration processes which could occur when incidental contact or modified joint use attachments occur which result in diminished shell for wooden poles.
- Increase system performance against conditions which could result in line-slap or galloping conductors by increasing phase spacing (particularly in areas of avian habitats), intersetting poles to minimize span length, or installation of phase spacer bars.
- Develop “HFTD-Preferred” construction standards. Currently under evaluation are line elements (such as fuses, connectors, etc.) and their performance history in regards to wildfire events. These are being prioritized for their benefits in risk versus the complexity and cost to modify the network to accommodate them. Additionally, development of “HFTD-Preferred” standards will be implemented throughout the organization.

Another wildfire mitigation program area includes integration of new technology that is more sophisticated in determining that some incidental contact or equipment damage has occurred. Legacy equipment, while largely capable of detecting such events, are less sensitive to these events than modern equipment. As a result, PacifiCorp proposes replacing protective relays with modern microprocessor-based protective relays. These relays are to be equipped with modern protective algorithms and communications sufficient to support these functions.

Cohesive high fire danger protection schemes are planned to be developed for both transmission and distribution devices. These schemes will be based heavily on protection fundamentals making use of sound industry practice and taking advantage of modern functions when these present the best outcomes with respect to the mitigation of risk and reliability. The guiding functional characteristics for these improvements shall be: Speed, Sensitivity and Selectivity. See Table 21.

Table 21 Methodology to Improve Functional Characteristics and Modernize Response

Functional Characteristic	Methodology
Speed	• Improved time coordination by the use of communications to shorten clearing times. This will require the addition of communications throughout the system in order to clearly identify fault location. • Improve time coordination by verifying actual fault currents due to system disturbances and comparing these to the fault models used for the calculation of relay settings. This will require time and monitoring after new equipment has been installed.
Sensitivity	• Review system fault data and load data in order to more closely fit overcurrent settings to actual field conditions. • Use high impedance fault detection technology to monitor for degraded feeder insulation, damaged conductor and line impingement.
Selectivity	• The installation of fault indicators and communications throughout the system to support precise fault location. • The use of impedance based fault location to identify issues.

All equipment will be designed to accommodate SCADA control inputs for the timely adaptation of protection and reclosing in response to perceived fire conditions in the geographic location. See PacifiCorp's breakdown of related equipment inventory per location in Table 22.

Table 22 PacifiCorp's Inventory of Modernizing Response In-Service Equipment

Device Type	Yreka	Mt Shasta	Crescent City	Grants Pass (serving into Happy Camp)	Tulelake	Klamath Falls (serving into Tulelake)
Conventional Recloser	4				4	
Weather Inputs	2	7				
Communicating Recloser	2	14				
Distribution Circuit Relay	6	5	6		4	3
Transmission Relay	9	3	3	6	2	

Schedule of Deliverables:

1. Detailed scoping on a site by site basis is scheduled for completion by March 12, 2019, a portion of the scopes will be complete by February 26, 2019.
2. Site by site design schedules will be defined based on the completed scopes. Site priority will be defined by the project sponsor and the designated project manager who has yet to be identified. Schedules will tentatively be developed by March 28, 2019, pending assignment of a project manager.
3. Priority-1 site designs will commence on April 8, 2019, with design delivery dates defined in the individual project schedules.
4. Ongoing system improvement and adaptation will be based on information gathered from the operation and monitoring of these systems in the field utilizing the Plan, Execute, Measure, Correct process.

In addition to more sophisticated interrupting devices, additional focus with routine modeling of protective coordination routines will be performed to identify locations for further network modifications.

- Develop CYME-based time-current characteristic curve (TCC curve) fault modeling process including incorporating high fault rate segments, including factoring elevated fire periods into assessment; create cycle for review and update of analysis.
- Where appropriate and segments are not likely to reliably safely coordinate with line elements, replace those sections as necessary.

Develop mechanisms for voltage-independent system fault event analysis with specific time period targets for assessment and follow up actions.

- Periodically interrogate devices, evaluate performance.
- Modify electrical network as appropriate.
- Refine system protective settings based upon experience gained during routine analytics.
- As necessary, replace particular families with specific performance limitations.

Wildlife Resilience Plan

PacifiCorp's service territory in California supports a diverse array of migratory birds and other wildlife[11] that have the potential to interact with its electrical facilities. PacifiCorp has developed and implemented a bird management program or Avian Protection Plan (APP), initially developed in 2004 for the Klamath Basin in cooperation with the U.S. Fish and Wildlife Service (Service), which identifies processes to minimize and/or eliminate avian interactions with electrical facilities that may result in an avian mortality or injury and subsequent potential for a disruption in electrical service (here after referred to as an avian, bird, or wildlife "incident")[12]. PacifiCorp's APP outlines company policies, response actions regarding incidents involving avian species protected under the Migratory Bird Treaty Act ("protected birds"), and

[11] Wildlife refers to and includes non-protected avian species (i.e. birds that are not protected under the Migratory Bird Treaty Act) and mammals or other wildlife that may climb, land on, or interact with electrical infrastructure.

[12] Incident refers to an avian (protected and/or non-protected under the Migratory Bird Treaty Act) and/or wildlife interaction with electrical facilities that may result in mortality or injury of the wildlife interacting with the facility and/or results in a disruption in electrical service.

risk assessment procedures to identify areas in which to implement proactive facility retrofit[13] activities to reduce risk of protected bird incidents due to phase-to-phase or phase-to-ground contact. PacifiCorp's program was used as a template for the national Avian Protection Plan Guidelines developed by the Avian Power Line Interaction Committee (APLIC) and U.S. Fish and Wildlife Service. PacifiCorp's APP is a living document and is reviewed and updated as needed through coordination with the U.S. Fish and Wildlife Service.

Although PacifiCorp's APP and policies were developed focusing on protection of eagles, raptors, and other migratory birds from electrocution and collision mortality on PacifiCorp's overhead lines and substations, implemented APP activities can result in minimizing other wildlife (includes non-protected birds, small mammals, etc.) incidents that may pose a fire risk.

Preventative Actions

In 2009, PacifiCorp's Transmission and Operations developed and implemented two policies, 1) *Avian Protection Plan Policy* and 2) *Bird Protection Policy for Substations* that address management of protected bird incidents with company-owned distribution, transmission, and substation facilities. These policies outline PacifiCorp's avian-safe construction design standards, which include requirements to construct and design all new or rebuilt equipment poles in all areas and all new or rebuilt lines in rural areas in adherence with PacifiCorp's avian-safe constructions standards, thereby reducing and/or eliminating the risk of avian or other wildlife incidents. PacifiCorp implements these policies throughout its service territory.

PacifiCorp's avian-safe construction design standards follow APLIC guidance documents: Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 and Reducing Avian Collisions with Power Lines: State of the Art in 2012. Avian-safe designs for transmission and distribution structures are achieved by framing poles with 60-inch horizontal and 40-inch vertical phase-to-phase and phase-to-ground separation, extending center phase of a three-phase crossarm design 36 inches from the crossarm (pole), or by using covers to insulate potential phase-to-phase and phase-to-ground contact by avian species or other wildlife. Phase-to-phase and phase-to-ground separation distances are based on the dimensions of eagles as recommended by APLIC for utilities located in areas where eagle interactions may occur. Because eagle interactions with substations are unlikely, PacifiCorp's avian-safe substation standards are based on the measurements of the largest birds commonly observed in substations and are sufficient for the protection of birds such as hawks, owls, ravens, and smaller birds. Consequently, PacifiCorp's avian-safe substation designs apply covers or barriers where there is less than 30 inches of vertical separation and/or less than 46 inches of horizontal/diagonal separation between phase-to-phase or phase-to-ground potential points of contact. All avian protection standards and products are reviewed periodically and updated to ensure that the best available products and methods are being used.

Wildlife Protection Plan

In order to address potential for fire due to wildlife interactions, PacifiCorp plans to develop and implement a Wildlife Protection Plan (WPP), which will apply applicable APP practices and methodologies and where needed new approaches, to respond to wildlife incidents and implement proactive measures

[13] Retrofit refers to action(s) taken to modify or reframe a structure to achieve adequate phase-to-phase and phase-to-ground separation distances, or to insulate these contact points using covers in order to minimize or eliminate potential for avian and wildlife incidents.

to reduce potential for wildlife incidents within Tier II and Tier III boundaries. The WPP is intended to be funded separately from current funding commitments made to implement the APP. The WPP will contain applicable elements of the APP. Table 23 presents major components of the WPP and associated development-related tasks to be completed. The WPP will be a living document and updated as appropriate.

Table 23 PacifiCorp's Wildlife Risk Mitigation Programs

Component	Task
Wildlife Protection Plan	Identify funding commitment for proactive elements implementation
Incident Tracking	Update policies and/or guidance documents to require all wildlife incidents to be reporting internally.
Incident Tracking	Update internal reporting application to include additional wildlife species, such as small mammals (e.g. squirrels), as input options.
Incident Tracking	Update Wildlife Incident Tracking System (WITS) to include additional wildlife species, such as small mammals (e.g. squirrels), as input options.
Reactive Actions	Update and/or develop applicable policies and/or guidance documents to identify requirements relative to responding to a wildlife incident (e.g. to retrofit pole where wildlife incident occurred).
Reactive Actions	Coordinate with logistics to identify bird/animal guard inventory level requirements to address increase in use.
Proactive Actions	Identify publically available wildlife, habitat, land use data, and data containing other influencing factors to incorporate in analysis.
Proactive Actions	Coordinate with federal and state fish and wildlife agencies to determine feasibility of wildlife data sharing.
Proactive Actions	Develop spatial mapping to recognize habitat that may support or be favorable to wildlife categorized by wildlife types that interact with facilities based on available data (outage cause data).
Proactive Efforts – Substations	Develop and implement a process to evaluate substations where there is an increased risk of wildlife incidents within Tier II and Tier III boundaries to determine appropriate retrofit actions and/or plan.
Emerging Focal Areas	Develop methodology to identify when an area would be considered an emerging focal area and trigger proactive actions.

Incident Tracking

PacifiCorp tracks reported protected bird incidents and nest management activities utilizing the company's WITS. Data stored in WITS includes data such as species information, location, and outage identification numbers, which are used to ensure that outages caused by protected bird incidents or nests are documented, and remedial actions (typically retrofitting the structure where the incident occurred) are tracked through completion. Company programs are used to identify and track avian incidents. This information is used in identifying potential areas of high risk for avian incidents and focal zones to implement proactive retrofitting efforts.

Tier II and Tier III Incident Tracking

Within Tier II and Tier III boundaries, all wildlife incidents will be required to be reported internally utilizing existing reporting applications and tracked using WITS in addition to current outage data tracking programs. Applicable policies and/or guidance documents and tracking programs such as WITS, will be updated to accommodate and reflect this process change.

Reactive Actions

PacifiCorp's APP identifies response actions to address avian incidents after they are identified, which includes retrofitting the pole where the incident occurred in order to prevent incident reoccurrence at that location. Additional poles are retrofitted depending upon species involved in the incident (i.e. eagles).

Tier II and Tier III Reactive Actions

Within Tier II and Tier III boundaries, in addition to implementation of PacifiCorp's APP, PacifiCorp proposes to implement remedial actions to wildlife incidents (including non-protected birds and other wildlife) consistent with current remedial actions taken in response to protected bird incidents. PacifiCorp plans to, at a minimum retrofit the pole where the wildlife incident occurred or suspected to have occurred in order to prevent the event from recurring at that location again. Applicable policies and/or guidance documents will be updated and/or developed to support implementation of this activity.

Proactive Actions

In addition to reactive actions, PacifiCorp may also implement proactive measures to address the potential for avian-related interactions that may result in an outage or pose a potential fire risk.

Nest Management

During line inspections and operational activities throughout PacifiCorp's service territory, field personnel identify nests on facilities that have the potential to result in fires, outages, and other operational problems. These nests are categorized as "problem nests" and are documented and proactively managed through coordination with PacifiCorp Environmental Services. Proactive nest management may include removing or relocating the nest, discouraging birds from nesting in areas on structures which may result in operational issues, providing an alternative nest site (nest platform), trimming nest material, installing avian guard, and/or ensuring that surrounding utility facilities are avian-safe. Active nests (those with eggs or young) are protected by the Migratory Bird Treaty Act (MBTA) and management activities may only be implemented in accordance with PacifiCorp's Migratory Bird Special Purpose Utility Permit. In the case of an emergency situation (circumstance where a bird nest poses impending danger of fire, safety risk to crew, avian electrocution, or threat to human life or property that requires immediate action), PacifiCorp crews will take immediate appropriate nest management actions. Nest management that is required to be conducted on eagle or federally listed species' nests require additional permitting and coordination prior to proceeding.

Tier II and Tier III Nest Management

Nest management activities will continue to be implemented throughout PacifiCorp's service territory including Tier II and Tier III boundaries as part of the current APP.

Substations

Avian protection devices are installed (or the presence of existing avian protection devices is verified) at all substations during routine maintenance where an outage is taken and avian guard can be safely installed. Such avian protection devices include covers at equipment locations where there is an increased risk of electrocution (e.g., circuit breaker bushings, substation transformer bushings and arresters, and station service transformers, cutouts, and arresters). If a need for additional retrofitting at substations where there is an increased risk of protected bird incidents is identified, these substations will be included in the APP and added to the retrofit schedule.

Tier 2 and Tier 3 Proactive Efforts – Substations

Proactive efforts applicable to substations will continue to be implemented within Tier II and Tier III boundaries as part of PacifiCorp's current APP. In addition, PacifiCorp will establish a process to evaluate substations where there is an increased risk of wildlife incidents identified within Tier II and Tier III boundaries to determine appropriate proactive retrofit actions and/or plan.

Lines & Line Elements

Risk assessment surveys (visual inspection of distribution lines, line elements, and rights-of way to identify evidence of avian use of facilities) are conducted as needed to assist with identifying high risk structures for proactive retrofitting efforts. Circuits and regions are prioritized throughout PacifiCorp based on avian mortality history. Distribution circuits can be prioritized for risk assessment surveys based on the total number of protected bird mortalities (electrocutions and collisions) on each circuit and incident trends. A circuit's category is subject to change based on fluctuations in influencing factors including availability of suitable avian habitat, population shifts, prey base, surrounding land use, and proactive retrofitting activity completion status.

In addition to circuit prioritization, a spatial based analysis may be conducted to determine focal areas to implement proactive retrofit activities. Spatial based analysis uses density and heat mapping within ArcGIS to identify high risk avian environments. Using GIS modeling, the highest risk poles in a specific area may be identified by considering pole-related variables and habitat variables such as the number of jumpers, number of phases, presence or absence of any pole-top grounding, and presence or absence of unpaved open habitats as the dominate land cover within 200 meters.

The appropriate analytical tool (circuit based or spatial based) or a combination of these tools is used to identify proactive retrofit focal areas.

Each year, the identified focal areas in which proactive measures will be implemented, are evaluated and updated as additional information is obtained or new risk areas emerge based on influencing factors.

Lines and Line Elements – Tier 2 and Tier 3

Within Tier II and Tier III boundaries, in addition to implementation of the current APP, which is focused on addressing and preventing protected bird incidents, PacifiCorp will apply APP methods and practices to proactively address potential for non-protected bird and other wildlife incidents. PacifiCorp will develop and implement methods for circuit and focal area identification and prioritization within Tier II and Tier III boundaries for proactive retrofitting activities. This will be accomplished using methods outlined in the APP including analyzing outage data, nesting data, land use changes, other pertinent data

sources, and conducting circuit-based and spatial analyses focusing on equipment poles where there is a higher relative likelihood for wildlife incidents to occur due to reduced phase-to-phase and phase-to-ground separation distances. Seasonally based field surveys will be conducted as appropriate to further inform and validate the desktop analysis. After identified circuits or portions of multiple circuits within an area are identified and prioritized, a plan will be developed and implemented to proactively retrofit these circuits, portions of theses circuits or focal areas based on prioritization. Prioritization may be modified through continuous review of applicable data sources and field review.

Emerging Focal Areas

Through implementing tracking of wildlife incidents and analysis of applicable data for Tier II and Tier III areas, PacifiCorp will develop a methodology to identify "emerging focal areas". These areas are locations where risk of wildlife incidents is elevated, due to changes in influencing factors, to a level warranting proactive retrofit activities when compared to the initial analysis or prioritization conducted for this and other area(s) or circuit(s). PacifiCorp Environmental Services regularly monitors data entered into WITS and for areas within Tier II and Tier III boundaries, will monitor wildlife-caused outage data. If an increase in incidents is documented in close geographic proximity within a short period of time, Environmental Services will conduct further review. If an area is identified as an emerging focal area, the location will be evaluated and incorporated into planned proactive retrofitting actions as appropriate.

Summary

The following table includes the summary of PacifiCorp's proposed wildlife programs.

Table 24 PacifiCorp's Wildlife Fire Mitigation Program Summary

Category	Existing Programs	New Proposed Programs	Incremental Spend
Preventative Actions	N/A	Establish policy and/or procedures to address wildlife incidents in addition to protected bird species.	$500
Wildlife Protection Plan	Avian protection plan	Program to assess, respond to, and minimize risk of wildlife incidents	$15,000
Incident Tracking	Avian incident doForm (incident reporting application) and WITS	Update doForm and WITS to include functionality for reporting and tracking all wildlife incidents	$2,000
Reactive Actions	Avian Protection Plan and Company policy require retrofitting incident pole and 5 poles in each direction of incident pole to address eagle mortalities; and retrofitting of incident pole for other protected birds	Respond to all other wildlife incidents within Tier II and Tier III boundaries by retrofitting the pole where the wildlife incident occurred	$30,000

Category	Existing Programs	New Proposed Programs	Incremental Spend
Proactive Actions	As part of the Avian Protection Plan, high risk-poles for protected bird incidents are identified by circuit and/or area. Company commits set funding to conduct proactive retrofit actions.	Identify circuits or focal areas to proactively retrofit high risk-poles to prevent/minimize wildlife incidents in addition to protected bird incidents as part of the wildlife protection plan	$300,000

D. Vegetation Management Plan

PacifiCorp's existing Vegetation Management Program is consistent with GO 95, Rule 35 (as recently amended) and is described below. To supplement existing programs, the following table includes a summary of PacifiCorp's California vegetation management fire risk mitigation plan, reflecting new programs which exceed current regulatory requirements. Detailed information for each program has been included in the following subsections.

Table 25 PacifiCorp's Summary of New Vegetation Risk Mitigation Programs

Program	Description	Estimated Incremental Spend
Overhang Reduction	Remove additional overhang during off cycle years.	$238,849
Off Cycle Inspections	Off cycle inspections, so that every line within HFTD has vegetation inspection annually, regardless of cycle.	$758,651
Higher Risk Tree Removals	Expanded clearing and removal of higher risk trees, including potential hazard trees and certain higher risk species.	$1,035,920

1. Overall Objectives, Strategies, and Tactics

Discussion of the overall objectives, strategies, and tactics of the electrical corporation. Address how the electrical corporation has collaborated with local land managers to leverage opportunities for fuel treatment activities and fire break creation, and compliance with other local, state, and federal forestry and timber regulations.

PacifiCorp's vegetation management program is designed to address the reality that trees growing into or near power lines can create safety and service reliability risks. The overall objective is to minimize vegetation related faults, including any faults which could be a source of fire ignition. PacifiCorp's vegetation management program is compliant with GO 95, Rule 35, and is described in detail in PacifiCorp's Transmission & Distribution Vegetation Management Program Standard Operating Procedures ("Standard Operating Procedures").

Existing Tactics and Strategies

Fully described in the Standard Operating Procedures, the core of vegetation management efforts are directed to two primary areas. Like other utilities, PacifiCorp prunes vegetation to maintain a safe distance between tree limbs and power lines; PacifiCorp also identifies and removes hazard trees. Like other utilities, PacifiCorp contracts with vegetation management service providers to perform pruning and tree removal work.

Maintaining safe clearances is the starting point of any utility vegetation management plan, including PacifiCorp's. From an overall perspective, it is important to note that there is a distinct set of procedures for vegetation management work on distribution circuits and another set of procedures for vegetation management work on transmission lines.

Vegetation management on distribution circuits center on cycle work. In areas without an elevated risk, regular vegetation management work on any particular circuit is done every two years; full clearance work is done on a four year cycle, with interim work at the two year mark between each cycle. In the HFTD, however, regular vegetation management work is done annually, consistent with current regulations.

Vegetation management on transmission lines focus on maintaining extended clearances and on employing "Integrated Vegetation Management" (IVM) practices to prevent any future vegetation growth disrupting clearances. Because of the nature of transmission lines, wider rights-of-way allow PacifiCorp to generally maintain clearances well in excess of the Minimum Vegetation Clearance Distance (MVCD) required in Table 2 of FAC-003-04.[14] Accordingly, rather than scheduling vegetation management work for transmission lines on a fixed cycle timeframe, such work is scheduled on an as-needed basis, dependent on the results of regular inspections and specific local conditions. In addition, PacifiCorp vegetation management endorses IVM as industry best practice. IVM essentially tries to prevent any clearance issue from ever emerging, by managing the species of trees (and other vegetation) growing in the right-of-way. Under such an approach, tall growing trees are removed long before there is any issue with clearance requirements.

In addition to clearance work, removal of hazard trees is a key overall strategy for both distribution and transmission vegetation management. This strategy is discussed in greater detail, in subsection 5 below.

There are other notable "tactics" specifically geared towards mitigating the wildfire risk. Consistent with PRC § 4292 and 4293, PacifiCorp requires a ten foot cylinder of clear space from pole top to bare ground around "subject" poles in state regulated areas. When appropriate, bare-ground herbicide treatments are used to keep the ten foot cylinder clear of vegetation. Vegetation management crews working in fire-prone areas are required to adhere to fire restrictions and to receive training related to fire prevention and suppression.

Many other strategies and tactics described in the Standard Operating Procedures support (even if only indirectly) the overall objective of reducing vegetation related faults. Any fault occurring in the HFTD is considered a wildfire ignition risk. Consequently, all such strategies and tactics are incorporated as part of PacifiCorp's Wildfire Mitigation Plan. For example, the Standard Operating Procedures includes strategies and tactics for obtaining property owner approval for tree removals, thereby supporting the overall strategy of removing hazard trees.

Very generally, all of the tactics and strategies in the Standard Operating Procedures are "existing" practices. The current form of the Standard Operating Procedures was first published in 2008, and periodic updates to content have been made. The most current version is Revision 06, dated June 1, 2017. Certain practices (i.e. the clearance distances required in the HFTD, per GO 95, Rule 35, Appendix E, discussed below) are "existing," in the sense that current work is being performed according to current requirements, but are "new," in the sense that they modify the current version of the SOP. As part of its typical practice to update the SOP, PacifiCorp is planning to issue a Revision 07, which will incorporate those requirements. Because of the nature of cycle work, some additional clearance work in Tier 2 areas is required in 2019, on circuits which would not otherwise be scheduled for cycle work in 2019, to ensure timely compliance with the recently updated Case 14 of Table 1 of GO 95, Rule 35. Accordingly, in addition to normal cycle work,

[14] https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-4.pdf

compliance work projects will be done on six circuits in the first half of 2019. The cost of this extra compliance work is estimated at $389,859.

New Tactics and Strategies

PacifiCorp is also planning to implement other new elements to its vegetation management program. Along these lines, PacifiCorp performed specific wildfire mitigation projects in 2018, spending approximately $1,600,000 on such work. Applying this experience, PacifiCorp plans to implement three new vegetation management programs to mitigate the wildfire risk, which are described in subsections 2, 3, and 5 below. In summary, PacifiCorp vegetation management will do annual vegetation inspections on all lines in the HFTD, with correction work also done based on those inspection results. This is a change from current practices because additional inspection and correction work will now be done on lines which would not otherwise have been scheduled for inspection and work under the existing schedule for regular cycle maintenance work on distribution lines. Correction work will also target reduction of overhang, prompt removal of hazard trees, and more aggressive removal of higher risk trees. The estimated incremental costs associated with such new programs are summarized in Table 25.

Collaboration with Local Land Managers

PacifiCorp routinely collaborates with local land managers in obtaining permits, scheduling work, and addressing particular issues as they arise during the course of work. PacifiCorp works closely with various local offices of federal agencies to ensure there are approval processes in place for vegetation management work, including hazard tree removals. Annual meetings are held with some agencies to enhance communication on authorization permits and upcoming vegetation management work on federal properties.

From a larger perspective, PacifiCorp has worked with and made joint efforts with the Edison Electric Institute and other utilities to collaborate with federal agencies to expedite approvals for vegetation management work on transmission and distribution facilities. PacifiCorp representatives participated in the drafting of an agreement specifically aimed at building collaboration between the federal agencies and the utilities on these issues. As a result, the Memorandum of Understanding on Vegetation Management for Powerline Rights-of-Way, dated September 29, 2016, was signed by the Edison Electric Institute, Utility Arborist Association, the National Park Service, United States Fish and Wildlife Service, Bureau of Land Management (BLM), United States Forest Service, and the United States Environmental Protection Service. The purpose of the MOU is to facilitate cooperation and coordination among the parties regarding vegetation management within and immediately adjacent to existing and future powerline right of ways and associated facilities. The MOU facilitates “implementation of cost effective and environmentally sound vegetation management plans, procedures, and practices for powerline ROWs that will reduce adverse environmental and cultural impacts while enhancing the ability of utilities to provide uninterrupted electrical service to customers and address public safety.” (MOU at 4.)

These efforts culminated in the recent passage of legislation by the United States Congress. Section 211 of the Omnibus Appropriations Act of 2018 amended Title V of the Federal Land Policy and Management Act. The new law, codified at 43 U.S.C.A. § 1772, establishes a formal procedure for submission and approval of vegetation management plans, with an emphasis on standardized, consistent plans and minimizing the need for case-by-case approvals for hazard tree removal. PacifiCorp understands that the BLM and the USFS, the two federals agencies responsible for the lands where PacifiCorp’s rights-of-way

are located, are engaged in a rulemaking to "develop a consolidated and coordinated process for the review and approval of plans." 43 U.S.C.A. § 1772(c)(4)(A). When those regulations are finalized, PacifiCorp plans to submit a vegetation management plan under 43 U.S.C.A. § 1772(c)(1) to both the BLM and the USFS.

2. *At Risk Overhanging Tree Limbs*

Remove at-risk overhanging tree limbs, as feasible (specific criteria may vary by utility). This should include information on how the electrical corporation identifies and determines which vegetation is "at-risk."

PacifiCorp's procedures specifically address overhang clearance. Under existing specifications, overhang is removed or pruned to provide at least twelve feet of clearance. In addition, PacifiCorp considers whether increased clearances or removal is warranted in some circumstances, namely when overhang is over three-phase lines (particularly to the first protective device), when located in rural or difficult to access areas, when weak-wooded, fast-growing tree species, or poorly-structured trees are implicated, and to accommodate foreseeable weather conditions such as frequent high wind, heavy rains, ice and snow. Removal of overhang, in excess of required clearances, is allowed in each of these situations. The existing specifications require removal of dead wood or poorly structured limbs that could fall or be blown into the primary conductors.

PacifiCorp does not use the particular term, "at-risk overhanging tree limbs," (as such term is used in the mandated template). Arguably, due to the reality of gravity, all overhang is "at-risk." Trees growing into or near power lines are a concern for PacifiCorp because they can create safety and service reliability risks. At the same time, healthy overhang presents relatively low risk, so long as appropriate clearances are maintained. Along these lines, PacifiCorp recognizes that unhealthy overhang reflects a relatively greater risk (especially over three phase lines). Accordingly, PacifiCorp requires removal of overhang which is "dead wood or poorly structured limbs." To identify and determine what constitutes poorly structured limbs, PacifiCorp uses industry-standard best practices. Specifically, PacifiCorp follows *American National Standard for Tree Care Operations: ANSI A300 (Part 9) Tree Risk Assessment and* International Society of Arboriculture: *Best Management Practices, Tree Risk Assessment*. PacifiCorp, of course, treats "dead, rotten or diseased portions of otherwise healthy trees" as poorly structured limbs, consistent with GO 95 Rule 35.

Moving forward, to supplement existing programs, PacifiCorp plans to conduct off cycle correction work on overhang. PacifiCorp already prunes overhang in excess of minimum clearance recommendations in some circumstances. As discussed in subsection 4 below, PacifiCorp uses a minimum clearance distance of fourteen (14) feet after work, for overhang of moderate growing and fast growing species, that is in excess of the recommended minimum clearance in Appendix E to GO 95, Rule 35 of twelve (12) feet after work. Off cycle correction work on overhang, done on project specific work thresholds, will further supplement the existing effort to maintain overhang clearances well in excess of minimum requirements. In addition, depending on tree health and local conditions, PacifiCorp may employ tree removals as an alternative to overhang reduction.

3. Inspections

Any additional (more than annual) inspections within the HFTD as deemed necessary. This should include information about how (i.e. criteria, protocols, etc.) the electrical corporation determines additional inspections are necessary.

PacifiCorp regularly inspects its lines and facilities. PacifiCorp's vegetation management program conducts inspections on distribution lines in advance of distribution cycle maintenance work. As discussed above, vegetation management work on distribution circuits is done on a cycle. Accordingly, pre-work inspections are done immediately prior to the cycle work, to identify which trees will be worked in the cycle. In addition, post-work inspections are done as part of an audit and quality review.

For transmission lines subject to FAC-003-04, inspections are completed annually by line patrolmen, who report any vegetation conditions; any such vegetation conditions are promptly corrected. In addition, vegetation management conducts additional regular inspections of vegetation near transmission lines, including annual inspections on all main grid transmission lines. Line patrolmen meet with PacifiCorp's area foresters to discuss vegetation conditions twice a year. Vegetation work is scheduled dependent on a number of local factors, which is consistent with the Vegetation Management ANSI A300 (Part 7) standard and best management practices. Vegetation work on local transmission overbuild (not subject to FAC-003) is completed on the distribution cycle schedule and inspected accordingly.

As part of existing efforts to mitigate the risk of wildfire, PacifiCorp has previously conducted targeted vegetation management projects in the HFTD, discussed in more detail below. Pre-work and post-work inspections are included as part of those work projects.

Moving forward, to supplement existing programs, PacifiCorp plans to implement additional vegetation inspections, which exceed current regulatory requirements. In addition to annual facility inspections, PacifiCorp will conduct annual vegetation management inspections on all lines in HFTD areas. A Level 1 assessment, as outlined in ANSI A300 (Part 9), will be conducted to identify vegetation, including hazard trees, which requires work under PacifiCorp's specifications. Consequently, and in conjunction with such annual inspections, vegetation management shall annually complete correction work based on the inspection results.

4. Clearances

Where prudent based on species and environmental conditions, trim vegetation back to 12 feet (or more), in alignment with CPUC General Order (GO) 95, Rule 35, Appendix E guidelines. To the extent that an electrical corporation trims vegetation beyond minimum required clearances required by GO 95 Table 1, "based on species and environmental conditions," its Plan should describe how (i.e., criteria, data, protocols, studies, etc.) the utility made this determination.)

PacifiCorp has adopted a minimum clearance distance, at time of work, of at least twelve (12) feet for all distribution lines and at least twenty (20) feet for transmission lines under 115 kV and thirty (30) feet for any transmission lines of 115 kV or above. These minimum clearance distances are consistent with the recommendation in the Appendix E Guidelines of GO 95, Rule 35. These minimums are being used in existing work projects, and the next revision of the Standard Operating Procedures will reflect the same.

In addition, PacifiCorp prunes vegetation beyond minimum required clearances in multiple ways. First, PacifiCorp uses increased clearance distances on distribution lines for certain species of trees, depending on tree growth rate. PacifiCorp separates vegetation into three categories: (a) slow growing; (b) moderate growing; and (c) fast growing. In all cases, PacifiCorp applies the minimum clearance of twelve (12) feet for slow growing species. In certain cases, PacifiCorp applies an increased clearance for moderate growing and fast growing species.

Second, PacifiCorp integrates spatial concepts to distinguish between (i) side clearances, (ii) under clearances, and (iii) overhang clearances. Recognizing that certain trees grow vertically faster than other trees, it is appropriate to use an increased clearance when moderate or fast growing trees are under a conductor. Increasing overhang clearances also reduces the potential for faults due to overhang.

Third, as a practical matter, PacifiCorp almost always prunes beyond the minimum required distances because of the physical structure of the tree. PacifiCorp uses natural target pruning for all prune work. Natural targets are the final pruning cut location at a strong point in a tree's disease defense system, which are branch collars and proper laterals. Pruning at natural targets protects the joining trunk or limb. This technique is drawn from ISA *Best Management Practices: Tree Pruning* (Gilman and Lilly 2002) and *A300* (ANSI 2008). (*See also* Miller, Randall H., 1998. *Why Utilities "V-Out" Trees.* Arborist News. 7(2):9-16.)

Fourth, PacifiCorp uses forty (40) feet for minimum clearance after work on a 345 kV transmission line. This additional clearance is driven by heightened reliability concerns.

As part of existing efforts to mitigate the risk of wildfire, PacifiCorp has previously conducted targeted vegetation management projects in the HFTD. In essence, this has increased the frequency of work in particular areas, based on local conditions and growth rates. As a practical matter, increasing the frequency of work in particular areas typically results in clearances being maintained well in excess of those clearances required under GO 95, Table 1.

Correction work done in conjunction with off cycle inspections will address any outstanding clearance issues. Because of historic success in maintaining clearance requirements through its regular cycle maintenance programs, PacifiCorp does not anticipate that substantial additional clearance work will be required. Thus, no separate incremental costs for additional work to maintain clearance minimums are forecasted at this time.

5. *Hazard Trees*

Mitigate identified hazard trees. This should include information about how (i.e., criteria, protocols, data, statutes, etc.) the electrical corporation identifies and defines "hazard trees."

PacifiCorp defines "hazard trees" as "dead, dying, diseased, deformed, or unstable trees which have a high probability of falling and contacting a substation, distribution or transmission conductors, structure, guys or other Company electric facility."

PacifiCorp's existing Standard Operating Procedures require the removal of hazard trees. Consistent with California law, removal is required when "dead, rotten or diseased trees or dead, rotten or diseased portions of otherwise healthy trees overhang or lean toward and may fall into a span of supply or communication lines." (GO 95, Rule 35; *see also* Public Resources Code § 4293 ("Dead trees, old decadent

or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or pruned so as to remove such hazard.")). Furthermore, the existing Standard Operating Procedures encourage removal even when removal is not required under GO 95, Rule 35 or PRC § 4293.

Hazard trees are identified through the inspections discussed above and by field crews performing work. To identify hazard trees, PacifiCorp uses the practices set forth in ANSI A300 (Part 9); Smiley, Matheny, and Lilly (2011), *Best Management Practices: Tree Risk Assessment,* International Society of Arboriculture; and CALFIRE Power Line Fire Prevention Field Guide §§ 12-19. In summary, PacifiCorp uses an initial Level 1 assessment, as defined in ANSI A300 (Part 9), with particular attention to the prevailing winds and trees on any uphill slope. Suspect trees are subjected to a Level 2 assessment, as outlined in ANSI A300 (Part 9), to further assess their condition.

In many circumstances, obtaining property owner consent to removal is often part of the process. To accomplish removal when a property owner objects to removal, PacifiCorp goes to great lengths to obtain property owner permission, making repeated and reasoned requests by different representatives of the company.

Moving forward, in addition to existing practices, PacifiCorp plans to increase efforts to identify and remove hazard trees. As discussed in subsection 3 above, PacifiCorp plans to increase the frequency of its vegetation management inspections and conduct an annual vegetation inspection on all lines in the HFTD. More frequent inspections will necessarily improve the identification of hazard trees. Hazard trees identified during annual inspections will, of course, be removed or pruned sufficiently to eliminate the hazard (unless a property owner prevents such work). As a result, some hazard trees will be identified and removed earlier than under the existing program (i.e. which would have then occurred during the next regular cycle). To further its efforts to identify and remove hazard trees, PacifiCorp plans to increase the training requirements for forest technicians, enabling them to better identify hazard trees.

In addition, PacifiCorp plans to implement a program for increased higher risk tree removal and increased clearing of rights-of-way in the HFTD. PacifiCorp plans to be more aggressive in generally reducing total inventory, thereby proactively removing more trees before such trees ever become hazard trees. While it would be unfeasible to remove all trees which have the potential to become hazard trees (i.e. by definition, all trees eventually become hazard trees when they die), PacifiCorp plans to remove a greater number of trees in the HFTD which have a higher potential of becoming a hazard tree.

6. *Reliability/At Risk Tree Species*

Identify reliability/at-risk tree species to trim or remove, where feasible, per location-specific criteria.

As discussed in the clearances section above (subsection 4), PacifiCorp distinguishes between slow growing, moderate growing, and fast growing species. Moderate growing and especially fast growing species present certain reliability and at-risk concerns. Accordingly, such species are subject to increased minimum clearance distances. In addition, removal of cycle buster trees, which are extremely fast growing species, is encouraged. As part of the new program for increased higher risk tree removal, discussed in subsection 5, PacifiCorp plans to target particular areas of high density vegetation for increased removal of non-compatible tree species that have a potential to encroach on facilities.

7. Tall Trees with Path to Strike Powerlines

Assess trees that are tall enough, and have a feasible path, to strike powerlines (rather than inspecting to a pre-determined distance from the powerline).

PacifiCorp does not limit inspections or tree assessments to a pre-determined distance (which would be, presumably, the defined width of a particular right-of-way easement). As discussed in the hazard tree section above, PacifiCorp's definition and assessment of hazard trees necessarily incorporates trees which are tall enough to fall into the right-of-way and strike a powerline. PacifiCorp does not conduct a Level 2 assessment on every tree tall enough to strike a powerline, because this would be unfeasible. Instead, PacifiCorp conducts a Level 1 assessment to identify trees tall enough to strike a powerline which may also be hazard trees; if such a tree is identified, PacifiCorp then conducts a Level 2 assessment to determine whether the tree is, in fact, a hazard tree subject to removal. Moreover, PacifiCorp will consider tree height as a factor in determining whether any particular tree is a candidate for preemptive removal. (See discussion in subsection 5.)

8. Consequential Risk

Include a discussion of how the Vegetation Management Plan addresses any risks that may arise from trimming or removing trees, including but not limited to erosion, wind shear, flooding, etc.

PacifiCorp is not aware of consequential risks of erosion, wind shear, or flooding arising from pruning or removing trees in PacifiCorp's service territory. With respect to the wildfire risk, PacifiCorp is aware of certain concerns related to leaving dead wood behind as a source of fuel. To address this concern, PacifiCorp uses lop and scatter techniques, which are generally recognized as best practices. Historically, the most pronounced concerns of consequential risks related to vegetation management work have centered on disturbing natural habitat with the equipment used for work projects. These concerns are typically addressed through permit requirements with governmental agencies, who manage large areas of natural habitat. Other significant concerns have focused on the use of chemical herbicide and tree growth regulator treatments. PacifiCorp complies with applicable laws. These concerns are also addressed through the permit process, as well as through communications with private landowners.

E. Protocols on Situational Awareness and Determination of Local Conditions

SB901 recognized that many stakeholders play significant roles in improving the resilience of the state to wildfires. PacifiCorp's plans demonstrate the seriousness with which it is evaluating and working the problem. This section is intended to address the template requirement for IV.E.1-2, specifically meteorological and HD cameras.

Certain improvements are however, are outside the control of the company, but can be influenced by the information the company has gathered. PacifiCorp does not intend to deploy HD cameras, but does believe that other information can be beneficial. Specifically, the high rate of lightning initiated fires suggests incorporation of this information into the company's awareness of local weather impacts will inform the company and other emergency response personnel, which is further discussed in Section IV.C. Further, the high impacts on lightning ignitions suggest greater focus on lightning tolerant-equipment may be beneficial and is outlined in the company's resilience standards section, also discussed in Section IV.C. These costs are not individually identified since they are anticipated to be gradually transitioned as facilities are replaced. Additionally, situational awareness with regards to lightning events, is another important plan element, which is accommodated through subscription and integration of lightning events into the company's evaluation of day to day fire response, as outlined in Appendix B, which outlines the company's FPP.

Finally, the company, in collaboration with emergency response professionals and community organizations can help convey information important for the public to recognize in wildfire mitigation planning, such as sharing resources available for pre-planning (including PSPS), the need for maintaining defensible space and other fuel mitigation strategies.

F. Public Safety Power Shut-off (PSPS)

The following section addresses the regulatory requirements of proactive de-energization, the methodology applied to identify **c**andidate de-energization zones, triggers for activation, subsequent communications, as well as resource estimates and restoration protocols.[15] Further appended are data analytic details for threshold selection, event flow chart, and draft forms for logging communications and key triggers in a given activation event.

Selection of Impacted Areas

PacifiCorp, consistent with other California investor owned utilities, constrains proactive de-energization to Tier 3 areas consistent with regulatory requirements per D. 12-04-024 and ESRB-8. PacifiCorp has two Tier 3 areas within California, as shown in the graphic below.

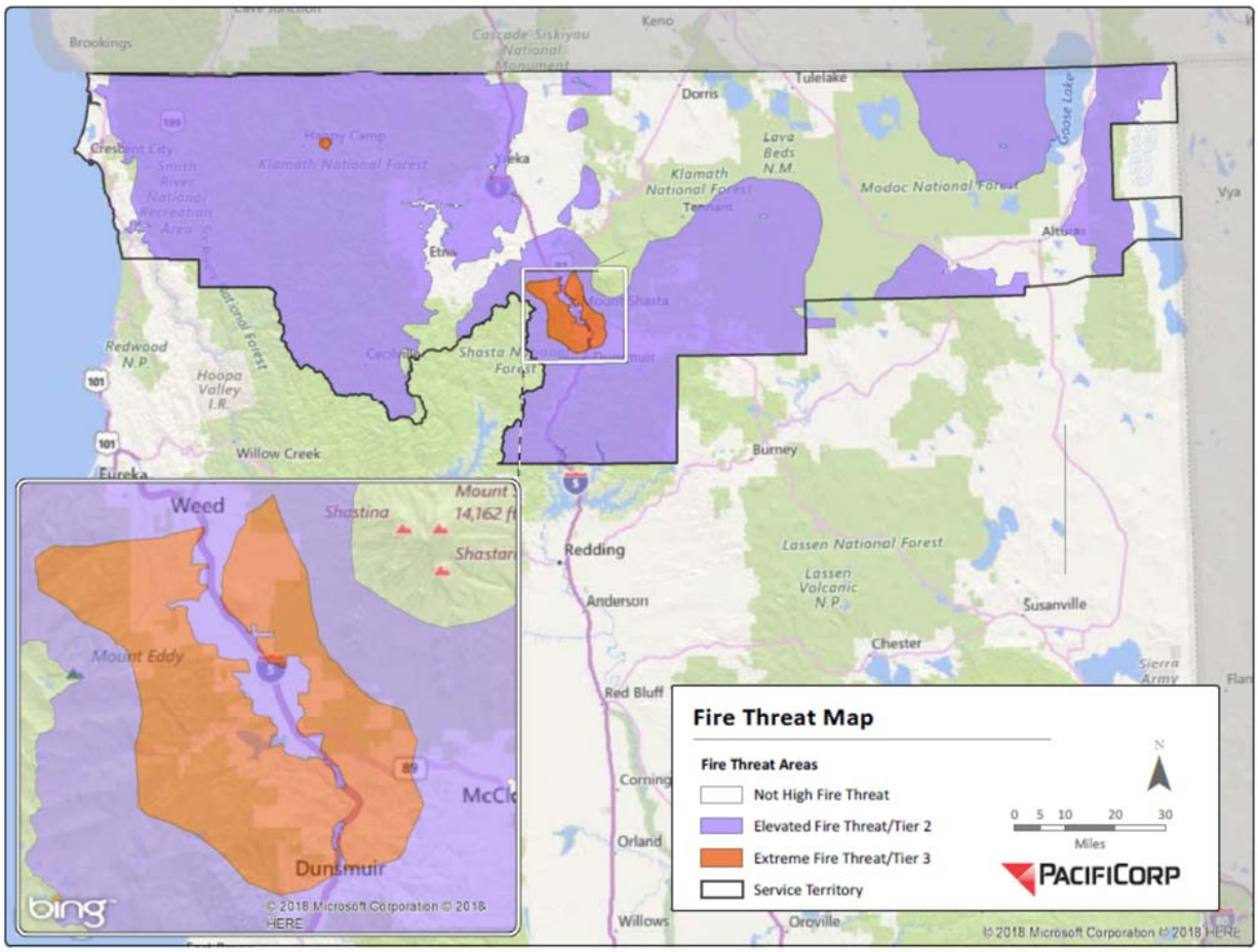


Figure 15 PacifiCorp Tier 3 Geographic Areas

A Tier 3 designation itself does not require the development of a proactive de-energization plan, rather it identifies high threat locations requiring further evaluation to determine if proactive de-energization

[15] This section also addresses questions 1-5 as contemplated in Section IV.F of the template.

should be considered for mitigating fire risk. This is particularly relevant in the Happy Camp area which while the Tier 3 footprint contains no overhead electric equipment, has frequent weather of a widespread nature which could result in impacts to the community.

Nor must the de-energization zone be fully contained within the Tier 3 area; the shape instead is a result of similar risk levels given the weather history and other environmental factors in combination with associated electrical equipment in the area.

PacifiCorp reviewed fire threat, terrain, fire history, fuel characteristics and weather in determining its de-energization zones. It also considered wildland urban interface, probability of maintained defensible space, impacts to customers and facilities to establish its proactive de-energization zones

Proactive De-Energization Zones

PacifiCorp, through its review, identified two primary Proactive De-energization Zones (PDZ) in its California service territory as shown below.

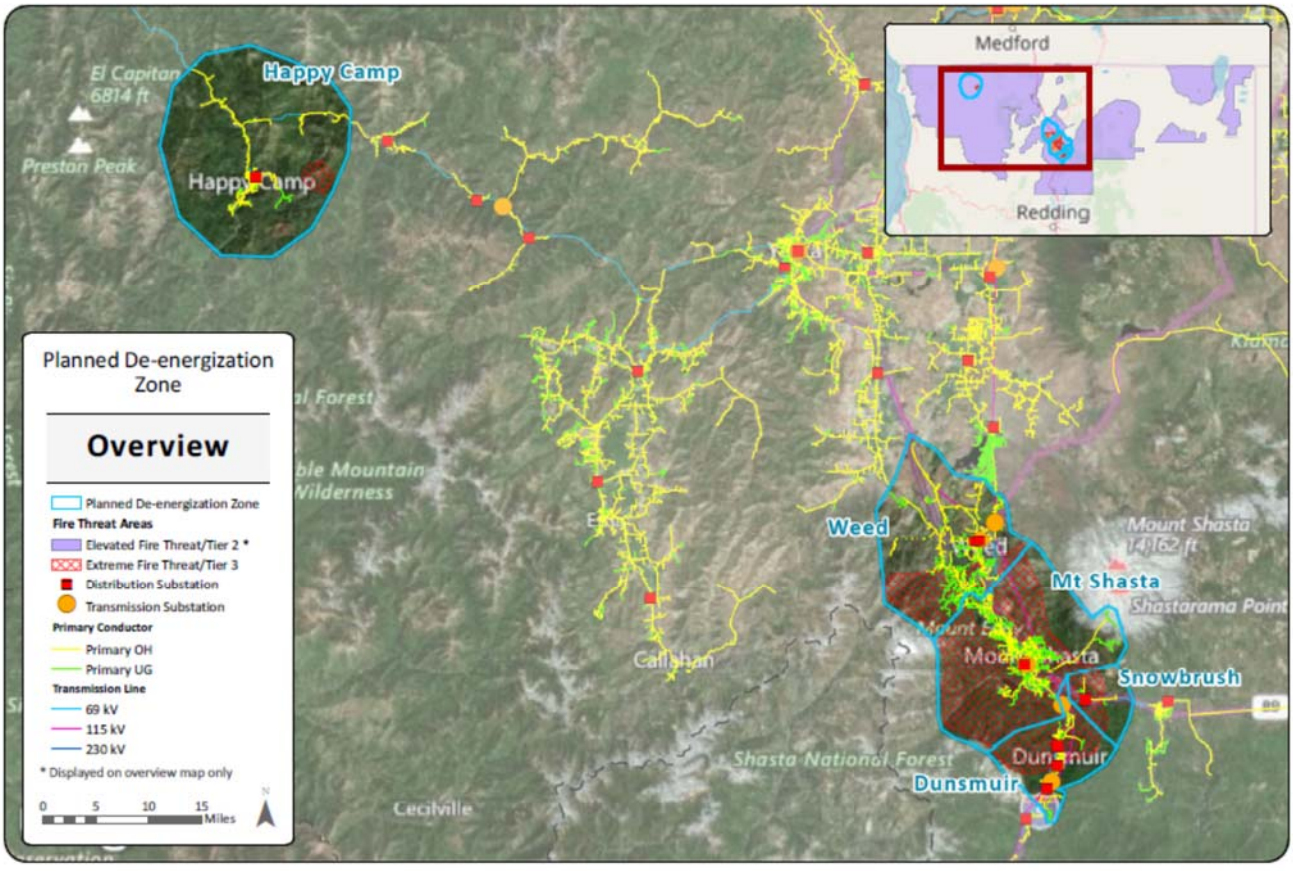


Figure 16 PacifiCorp's Proactive De-Energization Zones

The two primary zones were further subdivided into smaller areas (shown outlined in the graphic above) minimizing customer impact where appropriate based on weather monitoring capability and circuit

topology. Individual PDZ graphics are contained in following sections. This approach resulted in five discrete PDZ areas with a mix of circuit topology and customer impacts as summarized in the below table.

Table 26 PacifiCorp's California Discrete PDZ Areas

	PDZ Name	Substation	# of Circuits	Customers	Distribution OH	Distribution UG
1	Happy Camp	Seiad, Happy Camp	3	865	48.4	5.9
2	Weed	Weed, IP	5	2,589	90.5	62.1
3	Mt. Shasta	Mt. Shasta	6	5,074	86.4	76.7
4	Dunsmuir	North & South Dunsmuir	5	1,806	30.0	8.6
5	Snowbrush	Snowbrush	1	17	4.2	1.2
	Total	**9 Substations**	**20**	**10,351**	**259.5**	**154.5**

Criteria for Proactive De-energization

Building upon work completed in developing the California state-wide fire map in D. 17-12-024, Pacific Power utilized weather data, geographic topography, fire probability and ignition data and historic fire data to determine the criteria for triggering proactive de-energization in each of the five PDZs. While the primary triggers in Mt Shasta/Weed/Dunsmuir/Snowbrush are the same; it is expected that by using microclimatology information there is an opportunity for de-energizing smaller areas at a time. It would be an extremely rare condition that all four PDZs would simultaneously be activated.

Criteria Inputs

- Hourly Fosberg Fire Weather Index (FFWI) which uses temperature, relative humidity, 10-minute wind-speed factored into a single weather index which is correlated to influence on fire spread, accumulated over a 6 hour period (FFWI6).
- The Keetch-Byram Drought Index (KBDI) which assesses the risk of fire by representing the net effect of evapotranspiration and precipitation in producing cumulative moisture deficiency.
- While Red Flag Warnings provide the public awareness of heightened fire risk conditions, they do not sufficiently correlate to the history evaluated to require they function as a key input to activation of the proactive de-energization process.

CRITERIA		OR			AND		AND
Proactive De-energization Zone (PDZ)	=	**Wind gust (mph)**	**Sustained wind (mph)**	+	**FFWI6**	+	**KBDI**
Happy Camp		24.8	11		15		346
Mt Shasta/Weed/Dunsmuir/Snowbrush		25.6	16.7		30		282

For example, Happy Camp would need wind gust above 24.8 mph or sustained wind above 11 mph, and Fosberg (FFWI6) above 15 and KBDI above 346 to trigger a proactive de-energization event.

System Monitoring

PacifiCorp has developed an operating procedure that documents the process for monitoring weather information from the PDZ areas and triggering a proactive de-energization event. The main process outline is summarized below.

1) Utilizing automated weather systems monitoring an alert is generated based on the criteria noted above, and a proactive de-energization event is triggered.
2) When an event is triggered a Proactive De-energization Event Proposal is prepared which contains the timing details, area, and forecasted duration of the event.
3) Once approved by the Vice President of System Operations and the Vice President of Operations, notifications are then made to departments for next steps:
    a. Customer Service for customer notification
    b. Emergency Management for local emergency services notification
    c. Regulation for notification to the director of the CPUC safety and enforcement division (SED).
    d. Local Operations for required switching / line patrolling
    e. Local RBM for preparation of customer care centers and large customer contact
4) Conditions are continuously monitored and when thresholds are no longer exceeded, lines are patrolled for damage, and re-energized.

Communication Plan

In the event of Proactive De-energization, identified personnel will receive an email notification from System Operations. The email will include the current or forecasted weather conditions triggering an event, the affected area, and the date and time of the event. The goal is to begin notifying customers 48 hours in advance of a potential de-energization event. If this is not possible due to weather or any other changing conditions, the notification process will begin as soon as possible.

Customer Communications

- The list of affected customers (generated by System Operations from the impacted circuits noted in the De-Energization Event Plan) is sent to the Customer Contact Center
- Using this list, the contact center will begin sending notifications utilizing preapproved templates for each state of the notification process.

Timeline	Type of Notice
48 hours	Conditional
24 hours	Updated Conditional
2 hours	Imminent
1 hour	Immediate
2 hour	Restoration

During the proactive de-energization event, customers will receive updates to the status of the outage. The trigger for an update will be when the status of the outage or the estimated time of restoration changes. If a previously noticed proactive de-energization event is cancelled, customers will receive a cancellation notice.

Method of Notification

- Customers will be contacted by text, email, or phone call based on their preference. If no preference is selected, a phone call will be made to the primary phone number on the account.
- Notifications for a proactive de-energization event are exempted from the 48 hour notification prior to a planned outage as required under Rule 25 under both the Force Majeure and Safety clauses listed under approved exemptions.
- Messages will be posted on social media, local media, and press release.

Table 27 Customer Service/Communications Plan for PSPS

	Customer Service/Communications
48 hours before De-Energization	48 hour notice to customers (including critical priority customers) Emergency response site goes live Notification posted on website, Social Media and emergency response site Mobilize local authorities for a live stream on Facebook Issue a press statement/release Mandatory manager call for local employees impacted
2 hours	2 hour notice to customers (including critical priority customers) Notification posted on website, Social Media and emergency response site Mobilize local authorities for a live stream on Facebook Issue a press statement/release Mandatory manager call for local employees impacted
1 hour	Mobilize local authorities for a live stream on Facebook Mandatory manager call for local employees impacted
De-Energization	Notification posted on website, Social Media and emergency response site Mobilize local authorities for a live stream on Facebook Issue a press statement/release
Re-Energization	Notice of cancellation customers (including critical priority customers) Notification posted on website, Social Media and emergency response site Issue a press statement/release

Outreach in Advance of the Implementation of a Public Safety Power Shut-Off

PacifiCorp will provide information regarding proactive de-energization on the public website, including the following:

- Actions taken to harden the system to reduce risk,
- Monitoring conditions,
- Criteria for triggering an event,
- Map of tiers in California,
- Notification before, during, and at the conclusion on an event, and
- Restoration information.

Vulnerable Customers

- Known vulnerable customers (medical conditions, etc.) will receive additional outreach from the company requesting they evaluate the safety of their situations and consider a back-up plan in case of a shut off or any emergency outage.

Public Safety Authorities, Local Municipalities, Emergency Responders

The company's Emergency Manager will notify the appropriate local agencies based on the PDZ that was activated. PacifiCorp will work with agencies to minimize the impact of de-energization as much as possible and fully communicate the impacted areas and expected duration. The notification will be documented for reporting purposes after the event has ended.

Local Operational Response[16]

Upon notification of proactive de-energization local operations will secure appropriate resources for required switching, restoration line patrolling, and response to public requests. In each PDZ plan, specific resource estimates have been provided. Further, in each of these plans switching has been identified that can aid in the quicker restoration of priority customers while patrolling continues on the remaining portions of the circuit.

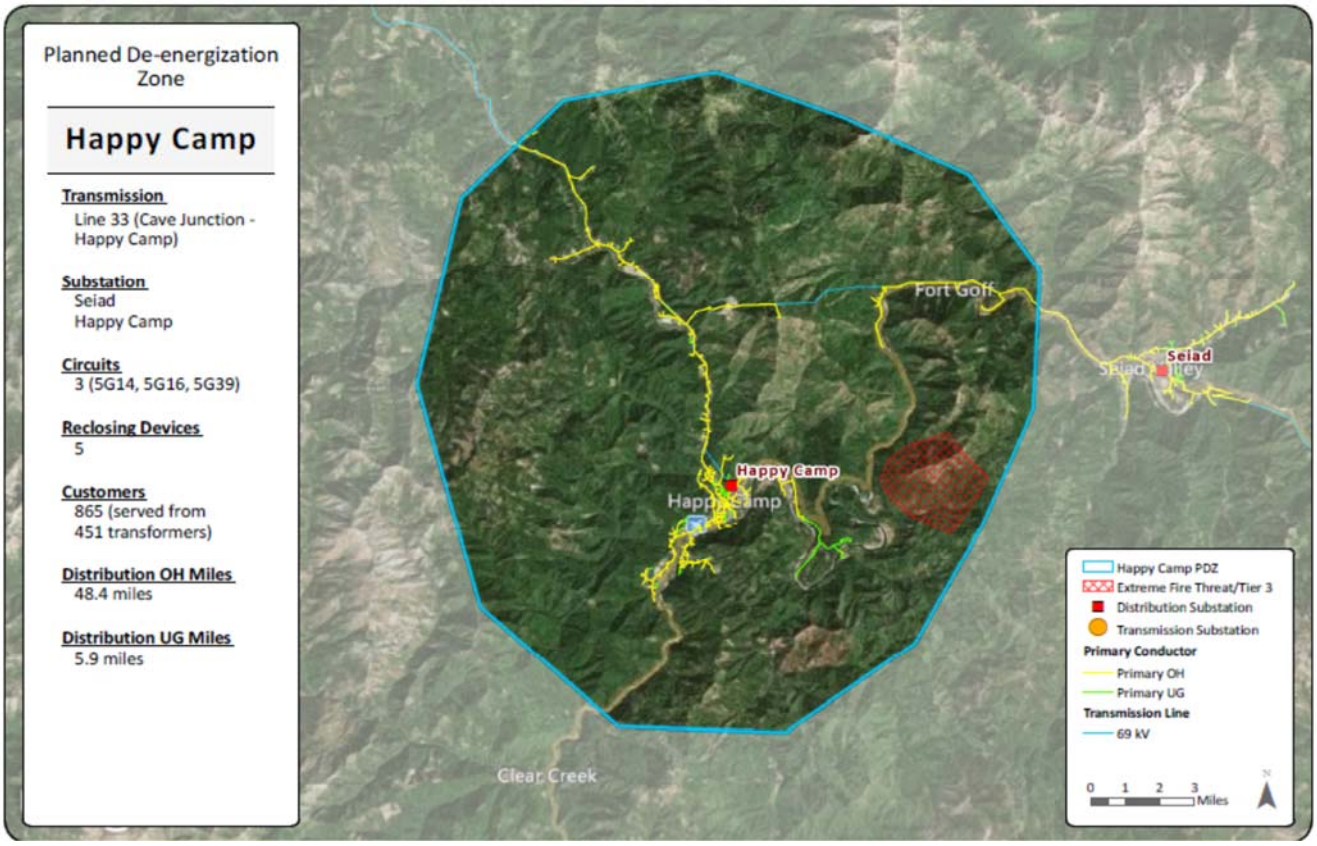
After-Action Reporting/Plan Updates

As outlined in D. 12-04-024 and ESRB-8 there are reporting requirements following a proactive de-energization event. The forms and logs listed in Annex B will be used to document required information

[16] **Note:** In addition to the circuit resources listed in the restoration resource estimate tables below a 3 man crew and 1 Logistics personnel would be required to support the repairs of any damage found during patrols. (3 man crew vehicles & logistics truck)

throughout an event. In addition an annual refresh of the proactive de-energization process and documentation will be conducted and any necessary updates to the plan documented.

Happy Camp PDZ Plan



PDZ Restoration Process, by Substation
Substation: Happy Camp
Circuits: 5G14, 5G16
The entirety of both 5G14 and 5G16 are encompassed in the PDZ.

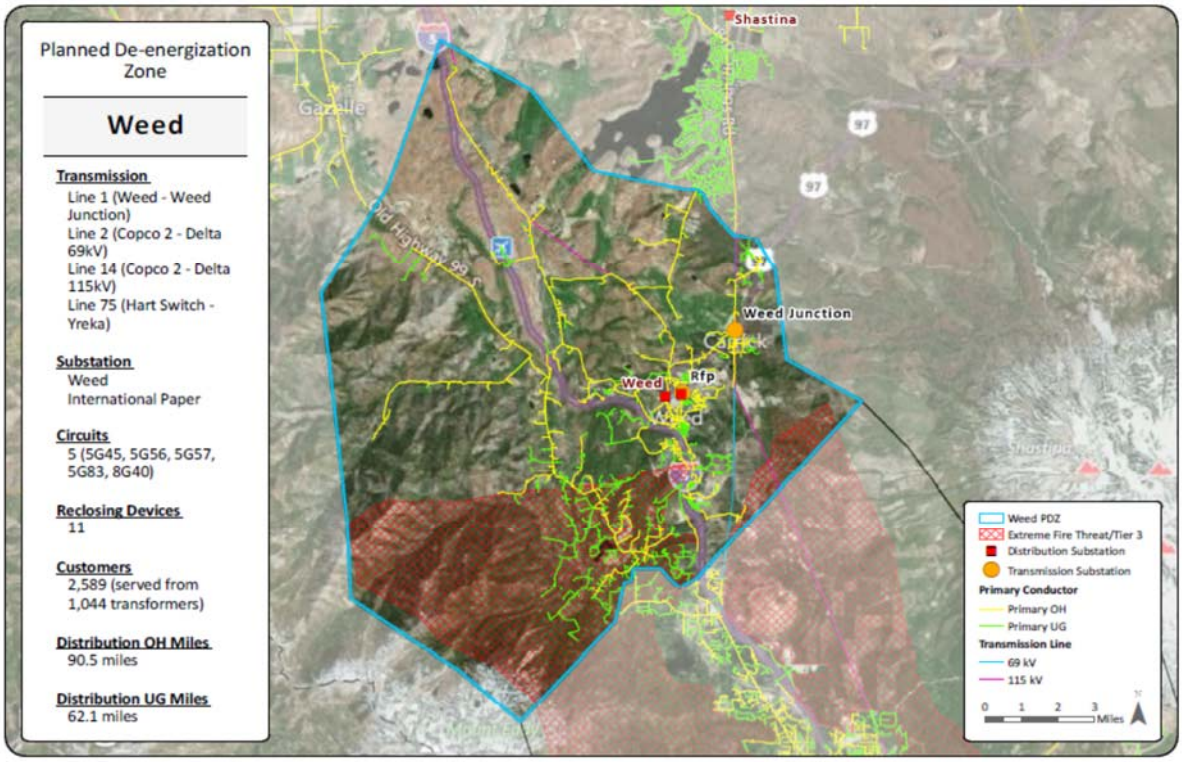
- There are 21 priority customers in the Happy Camp PDZ.
- These customers are primarily in the urban area of Happy Camp, with the exception of two that are 6.9 miles from the substation.
- There are not any alternate possibilities to re-energize any of the priority customers.
    - The short term restoration plan would require the patrol of both feeders before re-energization.

Substation: Seiad
Circuits: 5G39
There is a western extreme edge of the feeder that extends into the PDZ and has two priority customers. There is an existing 25T fuse at 06246012.046560 outside of the PDZ that can be used to de-energize the portion of 5G39 in the PDZ. This would be the short term restoration plan and would require the portion of the feeder beyond the isolation point to be patrolled before re-energization.

PDZ Restoration Resource Estimates

PDZ	Circuit	Number of Personnel	Required Material	Hours to Patrol	Comments (Switching Points, etc.)
Happy Camp	5G14	3-Singleman	3- service trucks	3 hours	This assumes de-energization at the circuit breaker. 5G14 would be the 3rd priority in this PDZ.
	5G16	6-Singleman	6- service trucks	5 hours	This assumes de-energization at the circuit breaker. 5G16 would be the 1st priority in this PDZ.
	5G39	4-Singleman	4- service trucks	4 hours	This assumes de-energization at the circuit breaker. 5G39 would be the 2nd priority in this PDZ.

Weed PDZ Plan



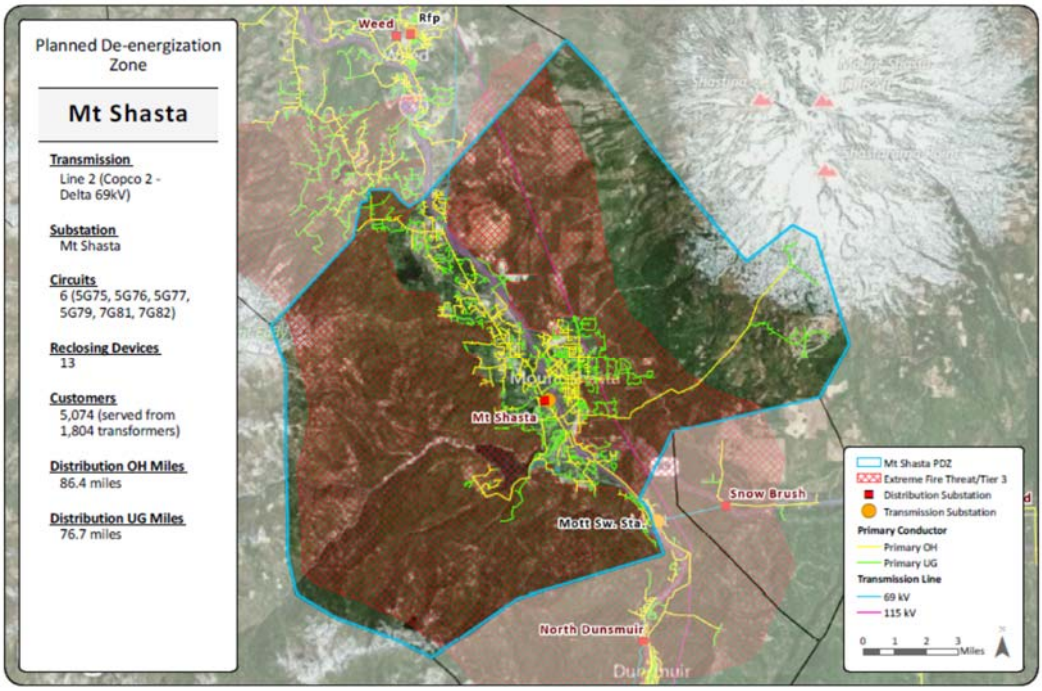
PDZ Restoration Process, by Substation
Substation: Weed
Circuits: 5G45, 5G83, 8G40

- There are three priority customers on 5G83 in Weed that are not in a PDZ but will be affected by de-energization due to the source being within the PDZ. Since the source is within the PDZ, short term restoration will require that the Weed substation feeders be patrolled prior to re-energization.
- All other priority customers are in the PDZ and would not be able to be energized during a proactive de-energization event without the installation of covered conductor and devices that are defined as exempt by the CALFIRE Power Line Fire Prevention Field Guide. The short term restoration plan would require the patrol of both Weed substation feeders before re-energization.

PDZ Restoration Resource Estimates

PDZ	Circuit	Number of Personnel	Required Material	Hours to Patrol	Comments (Switching Points, etc.)
Weed	5G45	5-Singleman	5- service trucks	4 hours	This assumes de-energization at the circuit breaker. 5G45 would be the 2nd priority in this PDZ.
	5G83	6-Singleman	6- service trucks	5 hours	This assumes de-energization at the circuit breaker. 5G83 would be the 1st priority in this PDZ.
	8G40	1-Singleman	1- service trucks	0.5 hours	This assumes de-energization at the circuit breaker. 8G40 would be the 3rd priority in this PDZ.

Mt Shasta PDZ Plan



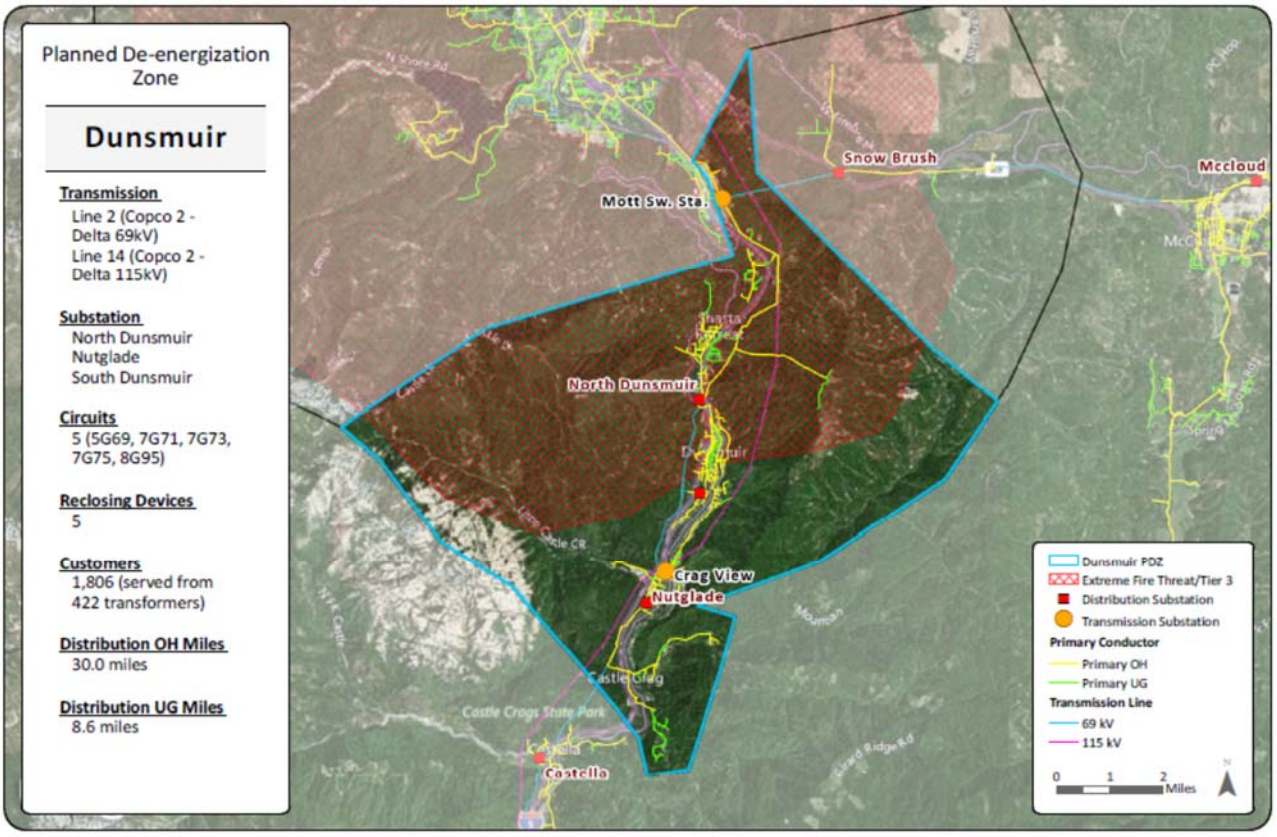
PDZ Restoration Process, by Substation
Substation: Mt Shasta
Circuits: 7G81, 7G82, 5G77 (5G76), 5G79

- There are 55 priority customers in the Mt Shasta PDZ. There are not any priority customers outside of the PDZ that would be affected by the proactive de-energization of the Mt Shasta feeders. The short term restoration plan for this area would require the patrol of the four Mt Shasta feeders before re-energization.
  - There are 20 customers on Mt Shasta that are outside of the PDZ and would be affected by the proactive de-energization 5G79. There is not an alternate source for these customers.

PDZ Restoration Resource Estimates

PDZ	Circuit	Number of Personnel	Required Material	Hours to Patrol	Comments (Switching Points, etc.)
Mt. Shasta	5G76	5-Singleman	5- service trucks	5 hours	This assumes de-energization at the circuit breaker. 5G76 would be the 2nd priority in this PDZ.
	5G79	6-Singleman	6- service trucks 1	5 hours	This assumes de-energization at the circuit breaker. 5G79 would be the 1st priority in this PDZ.
	7G81	2-Singleman	2- service trucks	1 hour	This assumes de-energization at the circuit breaker. 7G81 may not need to be de-energized due to most or all of the circuit not being in the Tier 3 area. 7G81 would be the 4th priority in this PDZ.
	7G82	2-Singleman	2- service trucks	1 hour	This assumes de-energization at the circuit breaker. 7G82 may not need to be de-energized due to most or all of the circuit not being in the Tier 3 area. 7G82 would be the 3rd priority in this PDZ.

Dunsmuir PDZ Plan



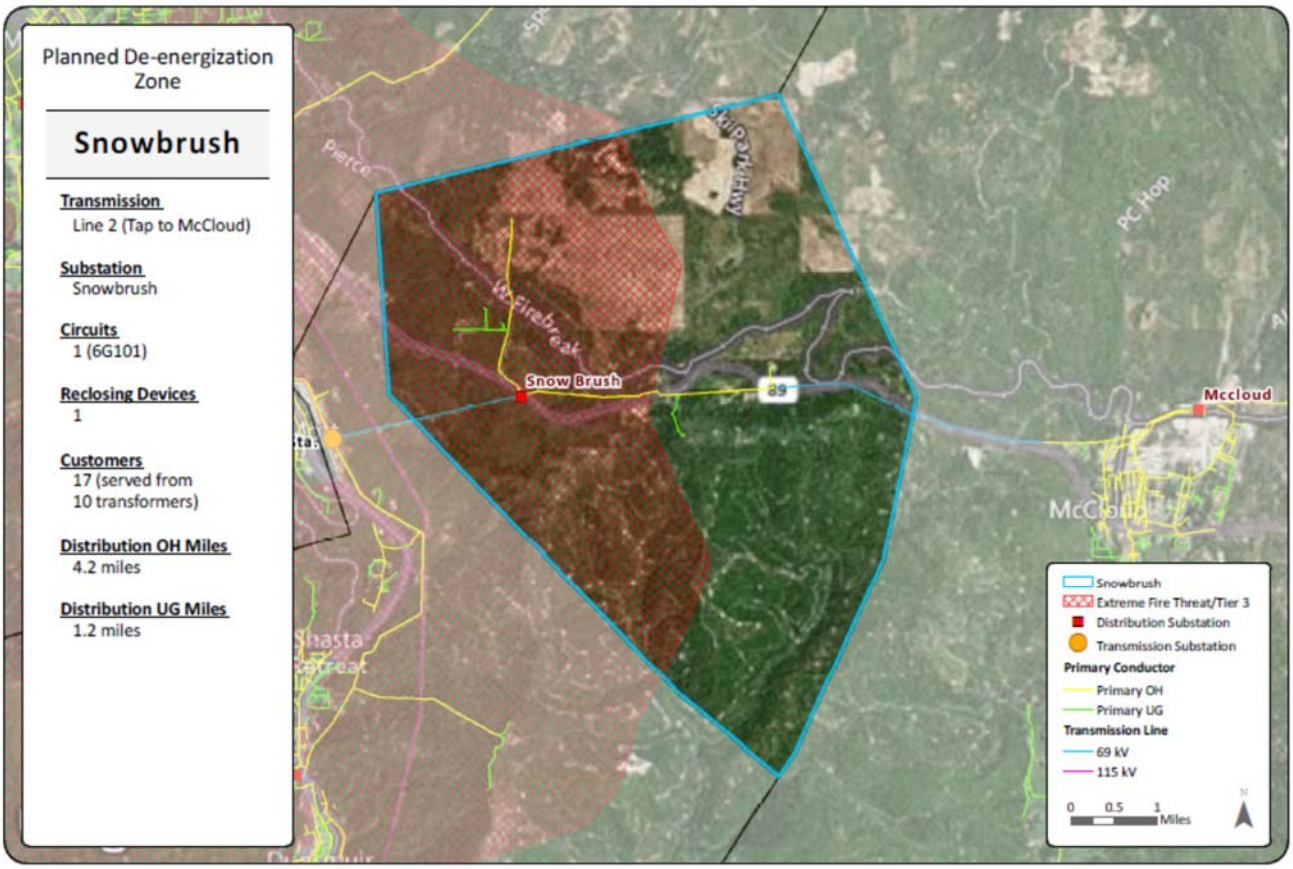
PDZ Restoration Process, by Substation
Substation: Nutglade
Circuit: 8G95

- The Nutglade substation and the northern portion of the feeder is located in the PDZ. The short term restoration plan would require the patrol of the Nutglade feeder before re-energization.

PDZ Restoration Resource Estimates

PDZ	Circuit	Number of Personnel	Required Material	Hours to Patrol	Comments (Switching Points, etc.)
Dunsmuir	5G69	4-Singleman	4- service trucks	3 hours	This assumes de-energization at the circuit breaker. 5G69 would be the 1st priority in this PDZ.
	7G71	3-Singleman	3- service trucks	2 hours	This assumes de-energization at the circuit breaker. 7G71 would be the 2nd priority in this PDZ.
	7G73	3-Singleman	3- service trucks	2 hours	This assumes de-energization at the circuit breaker. 7G73 would be the 3rd priority in this PDZ.
	7G75	3-Singleman	3- service trucks	2 hours	This assumes de-energization at the circuit breaker. 7G75 would be the 4th priority in this PDZ.
	8G95	4-Singleman	4- service trucks	3 hours	This assumes de-energization at the circuit breaker. 8G95 would be the 1st priority in this PDZ.

Snowbrush PDZ Plan



Priority Customers

No priority customers were identified based upon customer classifications.

Priority Customer Constraints

Priority customer constraints were not relevant in this PDZ, since no priority customers were identified.

PDZ Restoration Resource Estimates

PDZ	Circuit	Number of Personnel	Required Material	Hours to Patrol	Comments (Switching Points, etc.)
Snowbrush	6G101	3-Singleman	3- service trucks 1-ATV	2 hours	This assumes de-energization at the circuit breaker. 6G101 would be the 1st priority in this PDZ.

G. Alternative Technologies

Alternative technologies – the exploration of new technologies that will reduce the probability of an ignition event and/or reduce public exposure to a hazardous condition during periods of high fire risk by providing better situational awareness, faster isolation or minimized energy transfer.

The company has addressed alternate technologies in the applicable section previously, including asset hardening, situational awareness and operational responses.

H. Post Incident Recovery, Restoration, and Remediation Activities

Post incident recovery, restoration and remediation activities.

Post incident, PacifiCorp intends to follow the same practices and procedures as described in Section IV.F., PSPS. In addition, on a routine basis, PacifiCorp will follow the procedures and protocols as filed in the company's' Emergency Response Plan in compliance with GO 166.

V. Emergency Preparedness and Response

PacifiCorp's incident management structure provides a flexible and dynamic central command-and-control function that is activated for incidents and events which may require control and support beyond the capabilities of the day-to-day response resources. It is aligned with existing National Incident Management System standards. Response resources, including mutual assistance, will be dispatched as required based the size and severity of the situation.

A. General Description

Provide a general description of the overall emergency preparedness and response plan.

PacifiCorp field crews maintain the capability to extinguish small fires or new ignitions, if the fire has not spread to a size larger than one person can effectively fight while maintaining their personal safety. In the event of an ignition, notification and dispatch of fire crews from the local jurisdiction or geographic area fire center will occur.

Fire Weather Notification

When the National Weather Service issues a Red Flag Warning[17] for low humidity and high winds, the Fire Precaution Levels will be adhered to.

When notified of fire weather or other conditions which could increase the potential for new fire ignition, emergency management or the grid supervisor will forward the GIS provided email regarding fire weather advisory to the appropriate personnel.

B. Consistency with Public utilities Code (PUC) Section 768.6

Description of how Plan is consistent with disaster and emergency preparedness plan prepared pursuant to PUC Section 768.6, including [elements of the Plan described in Sections V.B.1-3 below].

PacifiCorp believes this plan, specifically Plan Sections V.B.1-3 are identical to the applicable provisions in PacifiCorp's plan prepared pursuant to PUC Section 768.6 and Appendix A.

1. Restoration of Service

Plans to prepare for and restore service, including workforce mobilization (including mutual aid and contractors) and prepositioning equipment and employees

New Ignitions/Small Fires

When "new ignition" or small fires occur, local public fire agencies or small wildland firefighting teams (e.g., initial attack teams) may be deployed to manage the event, and a command post may not be established immediately or be easy to locate. District managers should work directly with local public-sector emergency management personnel to coordinate activities. District managers can contact region dispatch or emergency management to assist with locating fire agency resources on new ignitions/small fires.

[17] Red Flag Warnings are posted at: http://www.wrh.noaa.gov/firewx/main.php.

Table 28 Actions and Responsible Group for New Ignition or Small Fire

Actions	Responsible Group
Report new ignition or small fires to region dispatch and your director.	All field personnel
Ensure personnel are evacuated from potential hazard areas. Request assistance from region dispatch, if necessary.	All field personnel
Notify director.	Wires and substation operations managers
Contact Incident Commander (on-scene) and identify resources needed for response. If needed, request assistance from dispatch or emergency management.	Wires and substation operations managers
Notify PacifiCorp Emergency Manager	Wires and/or substation director
Contact field safety administrator and notify them of the incident	Wires and substation operations managers
Evaluate current and anticipated work in the area, and potential impacts to facilities.	Wires and substation operations managers
Identify if additional response resources are needed (e.g. water tankers, N-95 masks.)	Wires and substation operations managers
Provide an incident briefing to Director and Emergency Management.	Wires and substation operations managers
Establish regular updates, coordinating with region dispatch, emergency management and other field resources	Wires and substation operations managers
Implement regular briefings with staff based on fire intelligence provided by public sector resources.	Wires and substation operations managers
Request custom maps from GIS Solutions, if necessary.	Wires and substation operations managers

Large Fires

For large fires, a public-sector incident management team (IMT) is typically located at a multi-agency command post. Field operations may coordinate directly with the IMT at the command post, or request a field safety representative to perform this responsibility.

Table 29 Action and Responsible Group for Large Fire

Actions	Responsible Group
Ensure personnel are evacuated from potential hazard areas. Request assistance from region dispatch.	All field personnel
Assess current and forecasted work in the area, safety hazard potential and potential impacts on company-owned facilities.	Wires and substation operations managers
Contact region dispatch, emergency management and/or a wires director to provide an update. Wire directors will notify the V.P. of Operations.	Wires and substation operations managers
If necessary, request assistance from the Pacific Power Emergency Action Center (PPEAC) through the wires director or V.P. of operations (PPEAC activation is likely)	Wires and substation operations managers

Contact company safety reps to notify them of the event and request deployment of field safety administrators to assist.	Wires and substation operations managers
Locate the on scene Incident Command Post. Request assistance from emergency management, if necessary.	Wires and substation operations managers
Participate in regular briefing sessions with the on scene Incident Management Team, or request assistance from field safety administrators.	Wires and substation operations managers
Identify if additional response resources are needed (e.g. water tankers, N-95 masks.)	Wires and substation operations managers
Establish regular briefings with field personnel.	Wires and substation operations managers
Establish regular updates with emergency management, region dispatch or the PPEAC.	Wires and substation operations directors
Request assistance from the regional community managers when customer evacuations are possible, cooling shelters are established, or other community activities are anticipated.	Wires and substation operations managers

Incident Reporting

Any on scene employee plays a key role in responding to and reporting details of a wildfire event. The safety of the public and company personnel take first priority. In addition, immediate steps should be taken to properly document the facts and circumstances surrounding the fire event. On scene personnel will notify Region Dispatch of the situation and document the situation in accordance with the current Fire Incident Response Procedures.

2. Emergency Communications

Community outreach, public awareness, and communications efforts before, during, and after a wildfire in English, Spanish, and top three languages in California as determined by United States Census data

PacifiCorp will use a multi-faceted effort to communicate information regarding wildfire prevention and response to customers. Communication methods include the following: targeted radio public service announcements; social media posts on Facebook and Twitter; informative banners on website homepage, wildfire safety landing page on website; targeted bill messages; press releases posted to our website and distributed to local media; news articles for local chamber publications; prepared talking points for regional business managers; pre-determined outreach to local community authorities and organizations to participate in prevention and preparedness focused town halls; and live informative Facebook events.

3. Adequate and Trained Workforce

Showing that the utility has an adequate and trained workforce to promptly restore service after a major event, taking into account mutual aid and contractors.

PacifiCorp has dedicated resources in the California service territory available to respond as needed to events. In addition to the resources in California, PacifiCorp has internal resources from Oregon and Washington that can be deployed. In the event these resources are insufficient, mutual assistance

agreements can also be deployed. The table below provides the count of construction / response craft positions available to support California operations.

Table 30 PacifiCorp's Available Trained Workforce in California (and readily available when needed)

Location	Meter Reader	Field Support	Lineman	Total
California	5	10	30	45
Oregon and Washington	78	102	370	550
Total	83	112	400	595

C. Customer Support in Emergencies

Protocols for compliance with requirements adopted by the CPUC regarding activities to support customers during and after a wildfire.

In reporting outages, PacifiCorp will continue its use of the company's customer outage management protocols its real time outage map to inform location customers of outages and estimated restoration plans, consistent with standard operating practices.

PacifiCorp has also implemented a variety of consumer protections and procedures to assist the company's customers when a disaster impacts their communities, consistent with D.18-03-011. These protections are in addition to routine customer service protections as provided in communicating outages and restoration time estimates as are supported through the company's web portal and customer service organization. In considering which of these protections to implement and the duration of the relief so provided the type, scale, and size of the event are evaluated and a program is developed commensurate with the disaster. Some disasters will warrant greater relief than others. In the case of a larger, vast and far-reaching disaster, it may be reasonable to provide greater relief for a longer duration.

The consumer protections include, but may not be limited to the following:

- Waiving deposit requirements for customers in the affected area;
- Expediting opening and closing accounts and new services;
- Suspending energy usage estimates when the structures are unoccupied during the emergency event;
- Discontinuing billing, including minimum billings for customers incapable of receiving electric service;
- Offering long-term payment plans (up to 12 months) on amounts in arrears for customers impacted by the emergency event;
- Discontinuing disconnections and late fees for non-payment in designated areas;
- Freezing standard and high-usage reviews for CARE customers.

VI. Performance Metrics and Monitoring

The following subsections include PacifiCorp's plan to execute, measure, maintain, and improve the company's wildfire mitigation programs as included in this document.

A. Roles and Responsibilities

Accounting of the responsibility of the responsible person(s) executing the plan [including] 1. Executive level with overall responsibility and 2. Program owners specific to each component of the plan.

Consistent with SB 901 requirements, the following responsible persons have been identified for each of the proposed mitigation programs as included in this document. The Vice President of Transmission and Distribution Operations has been identified as the executive sponsor for all programs.

Table 31 PacifiCorp Wildfire Mitigation Plan Roles and Responsibilities

Plan Element	Responsible Role	Responsibility
Risk Assessment	Director of Asset Management	Refresh annually to evaluate risks and integrate with risk-based decision-making approach to incorporate new data, any additional changes to mapping,
Inspect/Correct Programs	Director of Asset Management	Given annual refresh of risk assessment, develop and maintain inspection/correction program requirements in alignment with regulatory requirements and addition risk mitigation requirements
Operations Program	Director of South-West Wires	Ensure implementation of proposed practices and policies in California during fire season including adjustment to work schedules, purchasing of additional equipment, and implementation of work restrictions
System Hardening	Director of Transmission & Distribution Asset Performance	Implement solutions to enhance design and system operability in the areas of reliability, structural resilience, and wildlife resilience
Vegetation Management	Director of Vegetation Management	Ensure implementation of programs including identification of high risk tress and additional pruning for increased clearances
Situational Awareness	VP of System Operations	Ensure implementation of data collection and communication to improve situational awareness
Public Safety Power Shut-Off	Director of Transmission & Distribution Asset Performance	Responsible for execution of the plan, including identification, reporting, and communication
Customer Protections	VP Regulation	Identify the need for and implement plan including tailored solutions for customers effected by a fire emergency
GIS Data	Director, GIS, Mapping & Data	Supply GIS data upon request as indicated in Section IV.B.

B. Description of Metrics

Description of the metrics to evaluate the performance of the plan and the assumptions that underlie the use of those metrics. The identified metrics should be of enough detail and scope to effectively inform the performance of each preventive strategy and program.

PacifiCorp views the successful implementation of the company's proposed wildfire mitigation plan as completion of all activities described and included in Section IV. In addition to completion of the activities, PacifiCorp has developed the metrics in Table 32 in order to track and evaluate the programs developed and included in this document.

Table 32 PacifiCorp's Wildfire Mitigation Plan Metrics

Document Reference	Data Source	Specific Metric	Indicator	Measure of Effectiveness
Section III.D.1-Fire History	Cal Fire Perimeter Data Set	Power Line Fires in PacifiCorp's Service Territory	Sum of Acres Affected	No material increase
Section III.D.1-Fire History	PacifiCorp outage database	Events recorded with fire reference	Count of events	Reduction in general trend of events
Section III.D.1-Fire History	PacifiCorp outage database	Events recorded with fire reference: damage fire, equipment fire, pole fire	Count of events	Reduction in general trend of events
Section III.D.2–Fire Risk Assessment	PacifiCorp outage database	Potential ignition sources	Count of events	Reduction in general trend of events

C. Previous Plan Performance

Discussion of how the application of previously identified metrics to pervious plan performance has informed the plan, as applicable.

This discussion is not applicable to the initial Plan. PacifiCorp expects to include discussion on this issue in its next annual plan.

D. Plan Maintenance

Description of processes and procedures of [items VI.D.1-3 below].

1. Monitoring and Auditing

Monitoring and auditing of the plan including a timelines and scope of monitoring/auditing activities.

PacifiCorp intends to perform an annual assessment of its Fire Risk Mitigation Plan at the beginning of each calendar year to include an analysis of its completed program and review of metrics as contemplated in Section VI.B, in alignment with the objectives included in Section I.C.2.

2. Identifying/Correcting Deficiencies

Identifying and correcting any deficiencies in the plan.

As part of the annual assessment, PacifiCorp will identify any gaps or deficiencies, as evident through an evaluation of the metrics and objectives achieved as described in Section VI.B and Section I.C.2 respectively. PacifiCorp with then incorporate additional feedback from Commissioners and stakeholders to correct these deficiencies and amend the company's wildfire mitigation plan, in anticipation of fire season in each calendar year.

3. Monitoring and Auditing Effectiveness of Inspections

Monitoring and auditing the effectiveness of equipment and line inspections.

These inspections and audits are included in the fire risk mitigation programs described in Section IV.B. As the metrics described in Section VI.B are intended to evaluate all of the fire risk mitigation programs included in this document, PacifiCorp intends to use these proposed metrics to also evaluate the effectiveness of equipment and line inspections.

Appendix A: Comparison of GO166, FPP, SB901

GO 166 Emergency Response Plan (as filed prior to 10/31/2018)	Fire Prevention, Preparedness and Response Plan (as filed on 10/31/2018)	SB 901 Reference Number / Subsection Reference in PUC 8386(b)	Topic (colored font denotes gap in FPP)
1		2	**I. Objectives** of the plan
1.4	1 - 1.2; 2 - 2.1; 5.1	3	**II. Description of service territory conditions** and the preventative strategy or programs to minimize risk of electric lines and equipment causing wildfires given the nature of the service territory (including consideration of the dynamic climate change risk)
1.4.3; pg 8	2.2; 2.3; 4.1;	10, 11, 14, 15	**III. Risk Analysis and Risk Drivers** A. List that identifies, describes, and prioritizes all wildfire risks and drivers, including all relevant wildfire risk and mitigation that is identified in the utility's risk assessment including risk and drivers associated with design, construction, operations and maintenance of equipment and facilities, including topographical and climatological risk factors throughout service territory B. Description of how the plan accounts for the wildfire risk identified in the utility's risk assessment C. Evaluation of higher fire threat areas beyond existing Tier 2 and Tier 3 or elevating within those areas to the extent applicable D. Description of how methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk is consistent with the methodology used by other electrical corporations or such other methodology as is determined by the commission
* not covered in the Pacific Power Emergency Response Plan	2.3 - 2.3.2; 5	6, 7, 8, 9, 12	**IV. Wildfire Prevention Strategy and Programs** A. Operational Practices 1. Operational considerations such as blocking reclosers and fast-curve/sensitive relay settings 2. Other operational protocols based on situational awareness and known local conditions and available data, e.g., meteorological and climatological data 3. Other operational protocols for deploying wildfire prevention resources B. Plans for inspections of electrical infrastructure C. Plans for ensuring system will achieve the highest level of safety, reliability and resiliency. 1. Preparations for a major event 2. Plans for asset hardening/asset resilience and modernizing infrastructure with improved engineering, system design, standards, equipment, and facilities D. Vegetation Management Plan
*not covered in the Pacific Power Emergency Response Plan	* not covered in the Pacific Power Fire Prevention, Preparedness and Response Plan		E. Protocols on Public Safety Power Shut-off (PSPS) 1. Strategy to minimize public safety risk during high wildfire conditions and details of the considerations 2. Strategy to provide for safe and effective re-energization of any area that was de-energized due to PSPS protocol 3. Company standards relative to customer communications, including consideration for the need to notify priority essential services – critical first responders, health care facilities, and operators of telecommunications infrastructure 4. Protocols for mitigating the public safety impacts of these protocols, including impacts on first responders and on health and communication infrastructure
GO 166, table 1; 1.5, 4, 4.3, 5, 7	* not covered in the Pacific Power Fire Prevention, Preparedness and Response Plan	13, 16, 17, 18	**V. Emergency Preparedness and Response** A. Provide a general of description of the overall emergency preparedness and response plan B. Description of how plan is consistent with disaster and emergency preparedness plan prepared pursuant to Public Utilities Code Section 768.6, including 1. Plans to prepare for and restore service, including workforce mobilization and prepositioning equipment and employees 2. Emergency communications a. Public outreach/communications before, during, and after a wildfire in English, Spanish, and top three languages in California as determined by United States Census data Showing that the utility has an adequate and trained workforce to promptly restore service after a major event taking into account mutual aid and contractors 3. Showing that the utility has an adequate and trained workforce to promptly restore service after a major event taking into account mutual aid and contractors
* not covered in the Pacific Power Emergency Response Plan	* not covered in the Pacific Power Fire Prevention, Preparedness and Response Plan		C. Customer support in emergencies 1. Protocols for compliance with requirements adopted by the CPUC regarding activities to support customers during and after a wildfire, including: a. Outage reporting b. Support for low income customers c. Billing adjustments d. Deposit waivers e. Extended payment plans f. Suspension of disconnection and nonpayment fees g. Repair processing and timing h. Access to utility representatives
2, 3	* not covered in the Pacific Power Fire Prevention, Preparedness and Response Plan	1, 4, 5, 19	**VI. Performance Metrics and Monitoring** A. Accounting of the responsibilities of the responsible person(s) executing the plan 1. Executive level with overall responsibility 2. Program owners specific to each component of the plan B. Description of the metrics to evaluate the performance of the plan and the assumptions that underlie the use of those metrics C. Discussion of how the application of previously identified metrics to previous plan performance has informed the plan, as applicable D. Description of processes and procedures of the following: 1. Monitoring and auditing of the plan 2. Identifying and correcting any deficiencies in the plan 3. Monitoring and auditing the effectiveness of equipment and line inspections
		20	**VII. Any other information that the CPUC may require**

Appendix B: TURN Cost Estimate

PUC Section 8386(c)(3)(4)(8)(9): Wildfire Mitigation Strategies and Programs
Commission Ruling issued January 17, 2018, directed "to the extent electrical corporations submitting their plans have the information for the table in their possession in time for their WMP filing on February 6, 2019, they shall include it in summary form." To the extent possible, PacifiCorp provides the information in the summary form below.

Program/Strategy (PUC Section 8386(c)(3)) NOTE: CPUC Ruling requires this column to be updated, which it has been, to include all elements outlined in section IV. of the WMP	Categories: (1) Design and Construction; (2) Inspection and Maintenance; (3) Operational Practices; (4) Situational Awareness; and (5) Response Recovery NOTE: CPUC Ruling requires this column to be added	Asset Addressed (Ex: line, poles, etc.) (Section 8386(c)(3))	Annual Cost (Capital v Expense) (Scoping Memo at 4: "In evaluating the proposed plans the Commission may weight the potential cost implications of measures proposed in the plans")	Costs Currently Reflected in Revenue Requirement? (Provide Decision Reference) If for Only Part of Budget, Identify the $ for that Part and Explain Part not Previously Authorized (Section 8386(j))	Compliance Requirement? (Provide Code/GO Reference) If for only part of Budget, Identify the % for that Part and Explain Part that in Not in Compliance	Identify any Aspects of Plan/Strategy and Associated Funding That Is or Will Be Addressed in Another Case (Identify the Case) (Section 8386(j)) NOTE 1	Identify Any Memorandum Accounts Where Costs of Program/Strategy Are Being Tracked and Explain how Double Tracking is Prevented (Section 8386(j))	Previously Included in RAMP? (Provide Reference) (Section 8386(c)(11))	Evaluation Metric(s) (Section 8386(c)(4))	Assumptions Underlying Metric (Section 8386(c)(4))
OPERATIONAL PRACTICES										
Additional Staffing: Fire Specialist	Operational Practices		$150,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. A. and VI.	
Additional Staffing: Operations Response (standby during fire season)	Operational Practices		$950,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. A. and VI.	
Additional Staffing: Fault Event Analysts	Operational Practices		$350,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. A. and VI.	
Fusing Mitigation: Additional coordination / sectionalize	Operational Practices		$250,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. A. and VI.	
Fire prepardness Equipment (water trucks, etc.)	Operational Practices		$300,000 (capital)	0	n/a	n/a		n/a	See Plan Sections IV. A. and VI.	
Incident Investigation/Fire Threat Jurisdictional Coordination	Operational Practices				n/a	$37,500 (expense)		n/a	See Plan Sections IV. A. and VI.	
Emergency Operations Planning: Fire Prevention Plan	Operational Practices				n/a	$112,500 (expense)		n/a	See Plan Sections IV. A. and VI.	
PLANS FOR INSPECTION AND MAINTENANCE										
Transmission Line Inspections (IR)	Inspection and Maintenance	Lines	$120,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. B. and VI.	
Distribution Line Inspections (IR)	Inspection and Maintenance	Lines	$130,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. B. and VI.	
Increased Inspection Cycles	Inspection and Maintenance	Lines			n/a	$780,000 (expense)		n/a	See Plan Sections IV. B. and VI.	
SYSTEM HARDENING (ASSET MANAGEMENT)										
Conductor (Distribution Insulated Wire)	Design and Construction	Lines	$39,954,000 (capital)	0	n/a	n/a		n/a	Miles Installed - Also see Plan Sections IV. C. and VI.	
Conductor (Transmission Insulated Wire)	Design and Construction	Lines	$17,400,000 (capital)	0	n/a	n/a		n/a	Miles Installed - Also see Plan Sections IV. C. and VI.	
Conductor (Replace #6 CU conductor)	Design and Construction	Lines	$3,940,000 (capital)	0	n/a	n/a		n/a	Miles Replaced - Also see Plan Sections IV. C. and VI.	
Replace targeted wooden structures	Design and Construction	Poles	$24,000,000 (capital)	0	n/a	n/a		n/a	Structures Replaced - Also see Plan Sections IV. C. and VI.	
Wildlife Resiliency Design	Design and Construction	Poles	$247,500 (capital)	0	n/a	n/a		n/a	Poles Retrofited - Also see Plan Sections IV. C. and VI.	
Tier 2 Compliance, Pole Replacement (Transmission)	Design and Construction	Poles			n/a	$96,000 (capital)		n/a	Structures Replaced - Also see Plan Sections IV. C. and VI.	
Tier 2 Compliance, Pole Replacement (Distribution)	Design and Construction	Poles			n/a	$1,033,200 (capital)		n/a	Structures Replaced - Also see Plan Sections IV. C. and VI.	
VEGETATION MANAGEMENT										
Vegetation (Enhanced Clearances / Patrols)	Operational Practices	Lines	$2,033,421 (expense)	0	n/a	n/a		n/a	Line Miles - Also see WMP Section IV. D. and VI.	
Increased Vegetation Clearance in non-SRA Fire Threat Areas	Operational Practices	Lines			n/a	$841,066 (expense)		n/a	Line Miles - Also see WMP Section IV. D. and VI.	
Pre-Fire Season Vegetation Patrol	Operational Practices	Lines			n/a	$37,080 (expense)		n/a	Line Miles - Also see WMP Section IV. D. and VI.	
Tier 2 Vegetation Compliance	Operational Practices	Lines			GO 95	$374,297 (expense)		n/a	Line Miles - Also see WMP Section IV. D. and VI.	
SITUATIONAL AWARENESS										
Lightning Detection Monitoring Service	Situational Awareness	Lines / Poles	$30,000 (expense)	0	n/a	n/a		n/a	See Plan Sections IV. E. and VI.	
Computer Modeling of Fault Scenarios	Situational Awareness		$175,000 (capital)		n/a	n/a		n/a	See Plan Sections IV. E. and VI.	
Communications Network	Situational Awareness					$45,000 (expense) $750,000 (capital)		n/a	See Plan Sections IV. E. and VI.	
Safety/Risk Management System Software	Situational Awareness					$75,000 (expense) $750,000 (capital)		n/a	See Plan Sections IV. E. and VI.	
Weather Stations	Situational Awareness									
Cameras	Situational Awareness									

Appendix C: Pacific Power's GO 166 Attachment E

This appendix includes Pacific Power's GO 166 Attachments E, Fire Prevention, Preparedness, and Response Plan, or FPP, as filed with the Public Utility Commission on 10/31/2018.

Attachment E

PacifiCorp

Fire Prevention, Preparedness and Response Plan

Fire Prevention, Preparedness and Response Plan

Document Owner: The emergency manager is responsible for maintaining this document. This includes scheduling annual reviews and exercises, updating content based on annual reviews and exercises, and redistributing new version to document stakeholders.

The plan will be reviewed and exercised annually. The scale of the exercise will be determined by the President and CEO in coordination with Pacific Power emergency management personnel and key leadership.

Version Control	Exercise
Author: Jeff Bolton	Last Exercise Date:
Version: 1.0	Last Exercise Type:
Origination Date: 10/12/2018	Next Exercise Date:
Last Revision:	Next Exercise Type:
Next Revision: 2019	

1 PLAN OVERVIEW

1.1 PURPOSE

This Fire Prevention, Preparedness and Response Plan has been prepared by Pacific Power. Its primary purpose is to provide guidance to Pacific Power employees regarding the prevention and response to wildfires within its service area. These policies and procedures seek to minimize the probability of overhead line equipment resulting in a wildland fire as well as minimizing the impact on people and property caused by emergency events, and align utility response with responses by other emergency personnel.

1.2 ACTIVATION CRITERIA

This plan is to be activated in preparation for fire season and for any fire which could affect Pacific Power assets.

2 SITUATION OVERVIEW

2.1 HAZARD ANALYSIS SUMMARY

All of Pacific Power's service districts have some level of fire risk. Based on variables, such as fuel, weather and terrain, the fire potential and response can be unpredictable. Wildfire season generally lasts from June to September annually, however weather conditions could adjust the fire season to begin earlier or end later than expected. Flexibility to adjust operational requirements with the current fire danger and Industrial Fire Precaution Levels is required.

The company's service area includes territories in California which were determined in recent rulemaking and risk modeling efforts to be considered "high fire threat" areas, designated as Tiers 2 and 3. Tier-2/Elevated (in purple) and Tier-3/High (in orange) risk areas identify areas of increased vulnerability to fire incidents throughout the California districts, as shown in the graphic below. General Orders (GOs) were amended to recognize enhancements in various overhead construction and maintenance activities and GO 166 was amended to require utilities to develop a fire prevention plan. This plan is intended to fulfill that requirement.

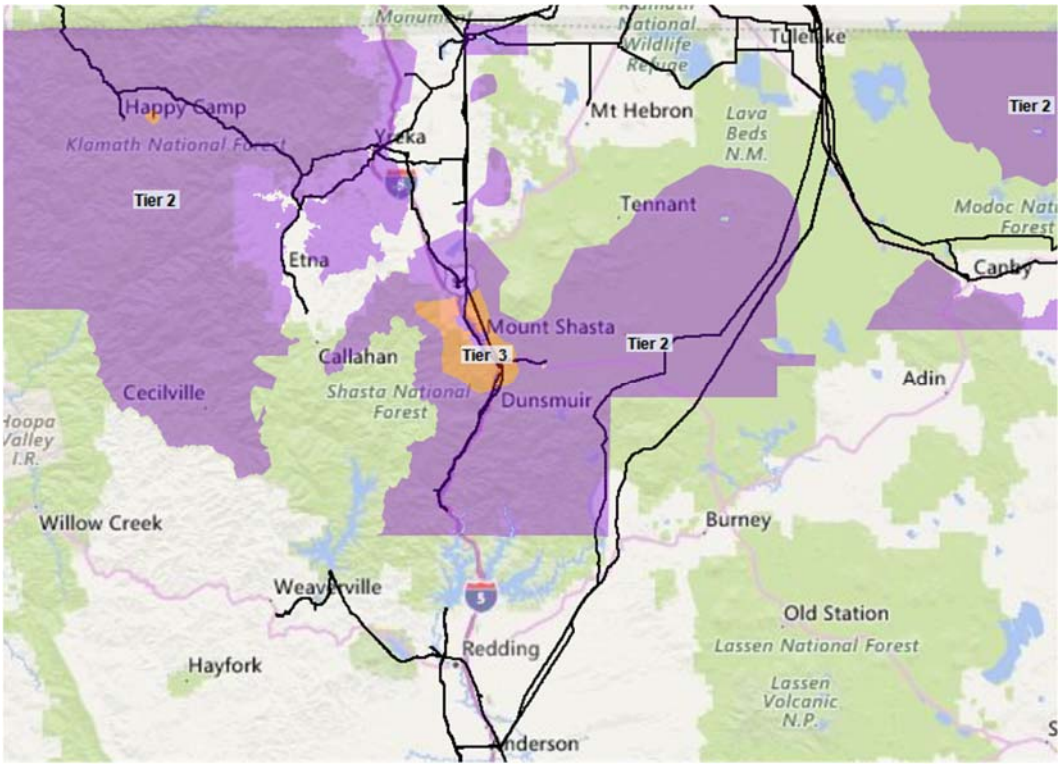


Figure 1: Pacific Power California Service Territory Designating High Fire Threat Areas

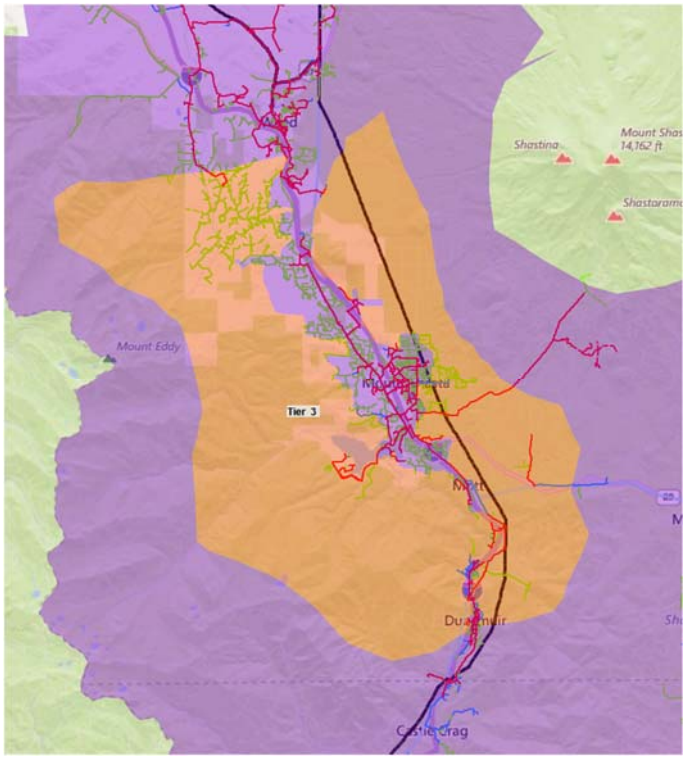


Figure 2: Extreme Fire Threat Area near Mt Shasta, CA

2.2 CAPABILITY ASSESSMENT

Pacific Power field crews maintain the capability to extinguish small fires or new ignitions; if the fire has not spread to a size larger than one person can effectively fight while maintaining their personal safety. In the event of an ignition, notification and dispatch of fire crews from the local jurisdiction or geographic area fire center will occur.

2.3 MITIGATION OVERVIEW

2.3.1 Weather Factors

Pacific Power's Emergency Management and System Operation's personnel subscribe to several National Weather Service email distribution lists and receive forecast information directly from these sources. During fire season, Pacific Power's Disaster/Risk Planning Manager maintains contact with the National Fire Predictive Services Agency and the National Geographic Area Coordination Center for up to date fire information.

Upon notification of increased fire threat due to weather, Industrial Fire Protection Level or fire danger preparedness and mitigation actions will be taken in accordance with PCC-200 policy. Actions that may be taken in this policy include:

- Disabling SCADA-capable circuit breaker reclosing
- Notifying field management of increased fire potential areas
- Limiting testing of lines without patrolling prior to test

2.3.2 Vegetation Management

Pacific Power maintains clearance around facilities and powerlines in order to lower the risk of fire damage or ignition. These clearances are consistent with state regulations or, where no state requirements exists, the company's vegetation policies.

2.3.3 Vehicle and Equipment Maintenance

Vehicles are designed and maintained to prevent ignition from high temperature areas and are required to be regularly inspected for grass and debris accumulation which could create an ember and start a fire.

2.3.4 Awareness and Readiness

Pacific Power Emergency Management conducts daily checks of the fire hazard for its service areas and reports those findings to the field employees as appropriate. This includes, but is not limited to, Industrial Fire Protection Level status, weather forecast, wind predictions and other fires in the area. The Pacific Power GIS department also maintains fire detection and notification capability to alert operations and emergency management personnel of a potential fire within a specified distance (five miles, as of this time) of Pacific Power assets.

2.3.5 Workforce Training and Field Practices

Pacific Power field employees are trained in detection, prevention and response to fires. Current policies and practices have been put in place with the sole intention of preventing fire ignition or damage.

2.3.5.1 Fire settings for re-closers

Recloser settings for areas within fire danger districts will be in accordance with the PCC-200 policy.

2.3.5.2 Proactive de-energization

In circumstances which Pacific Power deems it necessary for fire safety to de-energize lines in order to mitigate the potential for fire ignition, actions will be taken in accordance with the PCC-201 policy.

2.3.5.3 Additional fire prevention measures for circuits under 3000' elevation

Forty-one percent of Pacific Power's circuits in California are below 3000 feet elevation. Due to the robust nature of Pacific Power's fire prevention program there are no additional measures in place to circuits below 3000' elevation.

3 COMMUNICATIONS

3.1 GENERAL

The Pacific Power radio system serves as the primary communications capability and is designed with redundancy and power backup for emergency situations. Pacific Power personnel utilize vehicles equipped with two-way radios under Federal Communications Commission license. These radios can communicate with Grid Operations, Hydro Control Center, surrounding mobile units and portable radios via fixed base stations which are located at Pacific Power facilities, and with Pacific Power's microwave radio system. The Pacific Power radio communications section states the radio system is designed to operational through any incident. However there may be certain limitations/inoperability to the computer based radio assets. Handheld and vehicle mounted radios will continue to operate even if the network is damaged. The system's repeaters will continue to operate independently from the main system, therefore a minimum level of connection across each area which would allow operations to continue. If repeaters are not working, the radios still have line of sight capabilities for direct communications as needed.

Available secondary communications systems are landline and cellular telephone. Pacific Power employees may utilize the Government Emergency Telecommunications Service (GETS), a program that prioritizes busy land-based telephone circuits during emergencies for identified emergency responders. Also emergency personnel have been given access to the Wireless Priority Service (WPS), which gives priority on cell towers. The WPS is an additional service connected to GETS. WPS is activated through the dialing sequence on a cell phone prior to calling the GETS hotline number (if a GETS connection is needed).

3.2 FIRE DISPATCH

3.2.1 Geographic Area Dispatch Centers

Communications with Northwest Geographic Area Dispatch Centers and the California Wildland Fire Dispatch will be coordinated through region dispatch and/or Pacific Power emergency management.

Coordination with California fire resources may be conducted through either the California Utility Emergency Association (CUEA), California Office of Emergency Services (CalOES), county and city emergency management or through CalFire directly.

3.2.2 Fire Contact Directory

California (CalFire) Dispatch/ECC	
Contact	**Number**
Humboldt/Del Norte ECC – CalFire	707-726-1280
Lassen/Modoc ECC – CalFire	530-257-5575
Siskiyou ECC – CalFire	530-842-7066
Shasta/Trinity ECC – CalFire	503-225-2411
California Warning Center *(secondary contact if county contacts are unavailable)*	916-845-8911
Oregon Interagency Dispatch	
Contact	**Number**
Blue Mountain Interagency Dispatch Center (LA Grande, OR)	541-963-7171 (Day) 541-786-5457 (After Hours)
Burns Interagency Communication Center (Burns, OR)	541-573-1000 (24 Hour)
Central Oregon Interagency Dispatch Center (Prineville, OR)	541-416-6800 (24 Hour)
Central Washington Dispatch (Naches)	509-884-3473 (24 Hour)
Coastal Valley Interagency Communication Center (Corvallis, OR)	541-750-7024 (24 Hour)
Columbia Cascades Communication Center (Vancouver, WA)	360-891-5140 (24 Hour)
Coos Bay District—BLM (Coos Bay, OR)	541-751-4302 (Day)
Eugene Interagency Communication Center (Springfield, OR)	541-225-6400 (24 Hour)
John Day Interagency Dispatch Center (John Day, OR)	541-575-1321 (24 Hour)
Lakeview Interagency Dispatch Center (Lakeview, OR)	541-947-6315 (24 Hour)
Rogue Interagency Communication Center (Medford, OR)	541-618-2510 (Day) 541-776-7114 (After Hours)
Warm Springs Agency—Dispatch Center (Warm Springs, OR)	541-553-1146 (Day)
Roseburg District—BLM (Roseburg, OR)	541-464-3370 (Day) 541-440-4947 (After Hours)
Salem Coordination Center—ODF, (Salem, OR)	503-945-7455 (Day)
Vale District—BLM (Vale, OR)	541-473-6295 (24 Hour)
Umpqua Dispatch—Umpqua National Forest (Roseburg, OR)	541-957-3325 (24 Hour)
Washington Interagency Dispatch	
Contact	**Number**
Central Washington Interagency Communication Center (Wenatchee, WA)	509-884-3473 (Day) 509-663-8575 (After Hours)
Yakama Agency—Dispatch Center (Toppenish, WA)	509-865-6653 (24 Hour)

4 FIRE PREVENTION

Pacific Power will use the current Industrial Fire Precaution Level (IFPL) for the immediate area to guide operational decisions. The IFPL is a standardized set of actions to be taken or avoided as declared by the USFS within their district areas.

Industrial Fire Precaution Level actions

- IFPL I – Closed Season
    - Fire precaution requirements are in effect. A fire watch/security is required at this and all higher levels unless otherwise waived. Crews must have firefighting equipment such as a Pulaski, Shovel and water can readily available.
- IFPL II – Partial Hootowl
    - No power saw use, welding or metal cutting from 1 P.M. to 8 P.M. Crews must have firefighting equipment such as a Pulaski, Shovel and water can readily available.
- IFPL III – Partial Shutdown
    - No off road vehicle/equipment operation, power saw use, welding or metal cutting from 1 P.M. to 8 P.M. Crews must have firefighting equipment such as a Pulaski, Shovel and water can readily available.
- IFPL IV – General Shutdown
    - All operations in the area cease. Written waiver is available for fire-safe activities. Must have firefighting equipment such as a Pulaski, Shovel and water can readily available.

4.1 FIRE PREVENTION AREAS

Enhanced fire prevention areas have been identified and have the potential for proactive de-energization in accordance with PacifiCorp Policy PCC-201. These areas are identified on the previous maps in section 2.1.

5 FIRE PREPAREDNESS

Start and completion dates for the fire preparedness activities are dependent on forecasted conditions and may vary from district to district. The leadership from each area will make the final determination on the level of preparedness activities needed. The preparedness actions found in Section 7 may be conducted concurrently. Fire preparedness actions will be documented on Pacific Power Training Attendance forms.

5.1 Fire Equipment Inventory

Pacific Power maintains firefighting equipment which may be used to respond to small ignitions. The following is a list of resources and their location:

Equipment Description	Location
500 gallon water tanker and pump with ¾ inch high pressure hose	Bend
250 gallon water skid-tank on trailer	Grants Pass
500 gallon water trailer, 2 inch hose	Klamath Falls
250 gallon water skid-tank (requires trailer for movement)	Klamath Falls
500 gallon water trailer, 2 inch hose	Medford
250 gallon fire tank and pump (trailer or pickup loaded)	Pendleton
500 gallon water tanker, 3 inch hose, firefighting equipment	Roseburg
250 gallon fire tank and pump *(trailer or pickup loaded)*	Walla Walla
250 gallon fire tank and pump *(trailer or pickup loaded)*	Yakima

5.2 Fire Season Monitoring

Even during a very active season company assets may not be directly impacted by wildland fires. However, monitoring, communication and coordination with internal and external resources is essential to help ensure rapid, coordinated response when an event does occur. Emergency Management will maintain awareness of the overall situation throughout the Pacific Power service territory and near assets outside of the service territory. If an incident occurs which may affect Pacific Power assets response actions will be executed. See section 10 for checklist.

GIS Solutions provides information received from external resources (e.g., U.S. Forest Service, Oregon Department of Forestry, and United States Geological Survey) however, fire data accuracy and update frequency are dependent on those external agencies.

6 Wildfire Incident Response Guidelines

6.1 Fire Weather Notification

When notified of fire weather or other conditions which could increase the potential for new fire ignition, emergency management or the grid supervisor will forward the Geographic Information System (GIS) provided email regarding fire weather advisory to the appropriate personnel.

6.2 New Ignitions/Small Fires

When “new ignition” or small fires occur, local public fire agencies or small wildland firefighting teams (e.g., initial attack teams) may be deployed to manage the event, and a command post may not be established immediately or be easy to locate. District managers should work directly with

local public-sector emergency management personnel to coordinate activities. District managers can contact region dispatch or emergency management to assist with locating fire agency resources on new ignitions/small fires. See section 11 for fire response checklist.

6.3 LARGE FIRES

For large fires, a public-sector incident management team (IMT) is typically located at a multi-agency command post. Field operations may coordinate directly with the IMT at the command post, or request a field safety representative to perform this responsibility. See section 11 for fire response checklist.

6.4 INCIDENT REPORTING

Any on scene employee plays a key role in responding to and reporting details of a wildfire event. The safety of the public and company personnel take first priority. In addition, immediate steps should be taken to properly document the facts and circumstances surrounding the fire event. On scene personnel will notify Region Dispatch of the situation and document the situation in accordance with the current Fire Incident Response Procedures.

7 ROLES AND RESPONSIBILITIES

All roles and responsibilities are within the scope of the normal Pacific Power Emergency Management Structure. In the event of a fire the EAC should be notified of the incident for potential activation.

8 FIRE SEASON PREPARATION CHECKLIST

Objectives
• Ensure life-safety • Ensure employee welfare • Complete preparedness actions for wildfire season • Most actions can be performed concurrently in this section • Annotate completed tasks on training roster (See Appendix B for Document)

Actions	Responsible	Completed by date
Participate in wildland fire season playbook review and update.	All areas, facilitated by emergency management	June 1st
Coordinate with state and federal fire resources (e.g. ODF, USFS, BLM, CalFire) on lessons learned from the previous wildland fire season, and implement improvements to public / private sector coordination, when applicable.	Emergency management	June 1st
Communicate wildland fire season forecasts to company personnel via the Pacific Power weather information distribution list (*_PP Weather Info.*)	Emergency management	Daily as needed
Verify locations and check conditions of specialized equipment, such as tankers and fire pumper trailers	Field and Substation Operations Director	June 1st
Review operating procedures for specialized equipment with personnel.	Field and Substation Operations Directors	June 1st
Check with local rental companies about access to "spare" water tankers.	Field Operations Directors	June 1st
Have mechanics check under all vehicles being serviced for accumulating grass or weeds.	Field operations Directors	June 1st
Review available stock and locations of PPE's related to wildland fire season (e.g. masks, fire shelters.)	Field and Substation Operations Directors	June 1st
Review Accident Prevention Manual / APM sections 12.7 and 12.8, covering no-test policy of breakers with staff.	Field, Safety, and Substation Operations Directors	June 1st
Initiate no test policy and review system operations line-testing policies with personnel: • PCC-200 Operating Transmission and Distribution lines during Fire Season • PCC-201 Proactive De-energization Procedure	Dispatch, Field and Substation Operations Directors	Upon notification of Fire Season declaration for a specific area

Provide wildland fire training; related to safety equipment, tools and PPE's (contact the safety department.)	Field and Substation Operations Directors	June 1st
Secure permits from local, state and federal forest agencies to work past 14:00 during fire season, typically completed before May 31.	Field and Substation Operations Directors	June 1st
Coordinate with emergency management on wildland fire season public/private sector meetings and exercises.	Field and Substation Operations Directors	June 1st
Provide regular updates to personnel on current and forecasted wildland fire season conditions.	Field and Substation Operations Directors	June 1st
Ensure vehicles working in or around fire potential areas are equipped with: • Shovel. • Pulaski/axe. • Water can.	Field and Substation Operations Directors	June 1st
Ensure excessive vegetation growth in and around substations is eliminated to prevent increased fire risk.	Substation operations	June 1st
Implement improvements to fire season maps based on the previous year's lessons learned.	GIS Solutions	June 1st
Update distribution lists for fire maps.	GIS Solutions	June 1st
Send out updated maps and contact information for Fire Dispatch Centers.	Emergency Management	June 1st
Review guidelines with dispatch personnel.	Region dispatch	June 1st
Review health and safety practices and apply lessons learned from the prior wildland fire season to improve training and equipment.	Safety	

9 FIRE SEASON MONITORING

Objectives
• Ensure life-safety • Ensure employee welfare • Continue Incident Management functions • Maintain situational awareness • Most actions can be performed concurrently in this section

Actions	Responsible
Monitor fire conditions throughout the region and communicate monthly national outlooks and NWS briefing information via the *_PP Weather Info* distribution list, when necessary.	Emergency management
Collaborate with external fire agency resources on incident intelligence, and communicate to personnel as the situation warrants.	Emergency management
Provide wildland fire e-mail warnings to incident management and operations personnel. This product provides maps and information, including a list of potentially at-risk infrastructure and nearest operation center within a 5 mile range of active fires.	GIS solutions
Coordinate with field personnel, grid operations and emergency management on current and forecasted fire information provided by emergency services and Northwest Fire Dispatch Centers.	Region Dispatch
Upon notification of fire season implement PCC-200 procedures	System Operations

10 FIRE RESPONSE CHECKLIST

Objectives
• Ensure life-safety • Ensure employee welfare • Initiate Incident Management functions

New Ignition or Small Fire Which Is Not Immediately Extinguished

Actions	Responsible
Report new ignition or small fires to region dispatch and your director.	All field personnel
Ensure personnel are evacuated from potential hazard areas. Request assistance from region dispatch, if necessary.	All field personnel
Notify director.	Wires and substation operations managers
Contact Incident Commander (on-scene) and identify resources needed for response. If needed, request assistance from dispatch or emergency management.	Wires and substation operations managers
Notify Pacific Power Emergency Manager	Wires and/or substation director
Contact field safety administrator and notify them of the incident	Wires and substation operations managers
Evaluate current and anticipated work in the area, and potential impacts to facilities.	Wires and substation operations managers
Identify if additional response resources are needed (e.g. water tankers, N-95 masks.)	Wires and substation operations managers
Provide an incident briefing to Director and Emergency Management.	Wires and substation operations managers
Establish regular updates, coordinating with region dispatch, emergency management and other field resources	Wires and substation operations managers
Implement regular briefings with staff based on fire intelligence provided by public sector resources.	Wires and substation operations managers
Request custom maps from GIS Solutions, if necessary.	Wires and substation operations managers

Large Fires

Actions	Responsible
Ensure personnel are evacuated from potential hazard areas. Request assistance from region dispatch.	All field personnel
Assess current and forecasted work in the area, safety hazard potential and potential impacts on company-owned facilities.	Wires and substation operations managers
Contact region dispatch, emergency management and/or a wires director to provide an update. Wire directors will notify the V.P. of Operations.	Wires and substation operations managers
If necessary, request assistance from the PPEAC through the wires director or V.P. of operations (EAC activation is likely)	Wires and substation operations managers
Contact company safety reps to notify them of the event and request deployment of field safety administrators to assist.	Wires and substation operations managers
Locate the on scene Incident Command Post. Request assistance from emergency management, if necessary.	Wires and substation operations managers
Participate in regular briefing sessions with the on scene Incident Management Team, or request assistance from field safety administrators.	Wires and substation operations managers
Identify if additional response resources are needed (e.g. water tankers, N-95 masks.)	Wires and substation operations managers
Establish regular briefings with field personnel.	Wires and substation operations managers
Establish regular updates with emergency management, region dispatch or the PPEAC.	Wires and substation operations directors
Request assistance from the regional community managers when customer evacuations are possible, cooling shelters are established, or other community activities are anticipated.	Wires and substation operations managers

APPENDIX A NORTHWEST GEOGRAPHIC AREA DISPATCH CENTERS

APPENDIX B TRAINING ROSTER

TRAINING ATTENDANCE ROSTER

All Fields Are REQUIRED

Training Date:		**Start Time:**		**End Time:**	
Course Title(s):					
Instructor:		**ID #:**			
Training Location:		**(Only one ID per training attendance roster)**			
Submitted By:					

	✓	Emp. #	Print Name	Signature - *see notes below* **
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

* Trainers may indicate attendance by checking box next to P# of **each employee** present and signing below.

Trainer: I certify to the accuracy of the information contained in this roster _____

Signature

Signatures are required for PacifiCorp Security Training, CIPS Overview, Code of Business Conduct, and FERC courses

➲ Submit to **Administrator** • E-Mail: **_Training Rosters**