BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

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

LIBERTY UTILITIES (CALPECO ELECTRIC) LLC'S (U 933-E) SUBMISSION OF ITS WILDFIRE MITIGATION PLAN PURSUANT TO SENATE BILL 901 (2018)

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February 6, 2019

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In accordance with the December 7, 2018 Assigned Commissioner's Scoping Memo and Ruling ("Scoping Memo"), Liberty Utilities (CalPeco Electric) LLC ("Liberty CalPeco") submits its Wildfire Mitigation Plan. The Wildfire Mitigation Plan follows the template provided in the January 17, 2019 Administrative Law Judge's Ruling.

I. Introduction and Background

Given recent catastrophic wildfires in California, the state passed Senate Bill ("SB") 901 in late 2018. This bill requires utilities to adopt wildfire mitigation plans, the details of which are at the discretion of the California Public Utilities Commission ("Commission" or "CPUC") for investor-owned utilities. In response, the Commission issued an Order Instituting Rulemaking ("OIR") in the Utility Wildfire Mitigation Plans (SB 901) filed under Rulemaking (R.) 18-10-007. The OIR provides guidance to utilities about the framework and content of the Wildfire Mitigation Plan and a timeline and process for review and implementation moving forward. In this initial OIR, the Commission requires that utilities submit plans by February 6, 2019. The Commission will review these plans and issue a decision

in mid-2019. Due to limited time in developing the document for filing, the Commission understands that the plans may not be exhaustive and envisions the plans evolving over time.

II. Liberty CalPeco's Wildfire Mitigation Plan

Liberty CalPeco has applied a thoughtful approach in developing a holistic strategy to mitigate utility-posed wildfire risks pursuant to SB 901. The process included a strategic, risk-based evaluation that resulted in efforts to improve operational practices, fortify existing preventative and response plans, and coordinate responsibilities within the utility to monitor and enhance the plan over time. Liberty CalPeco looks forward to working with the Commission and other parties to continually improve its Wildfire Mitigation Plan.

Respectfully submitted,

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February 6, 2019

Liberty Utilities (CalPeco Electric) LLC's

Wildfire Mitigation Plan

NAVIGANT

Liberty Utilities (CalPeco Electric), LLC

Wildfire Mitigation Plan

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February 4, 2019

Prepared for Liberty Utilities (CalPeco Electric), LLC. (U 933-E)

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DISCLAIMER

The State of California and the California Public Utilities Commission (Commission or CPUC) mandated through Order Instituting Rulemaking (OIR) that the electric utilities develop a "Wildfire Mitigation Plan" pursuant to Senate Bill (SB) 901. In Rulemaking (R.) 18-10-007, The Commission provided a specific outline that the electric utilities were to follow in the development of their Wildfire Mitigation Plans. Electric utilities' Wildfire Mitigation Plans (WMP or Plan) aim to reduce utility-posed wildfire risks while creating a process for review and implementation throughout the iteration filings of the Plan.

Liberty Utilities (CalPeco Electric), LLC (Liberty CalPeco) retained Navigant Consulting, Inc. (Navigant) as support in the development of their Wildfire Mitigation Plan. Navigant's approach in supporting the development of Liberty CalPeco's Wildfire Mitigation Plan included:

- **Data Requests**: Navigant requested data, reports, and prior plans to be incorporated into their proposed Plan.

- **Interviewed Liberty Personnel**: A series of interviews were held with Liberty CalPeco personnel to determine specific actions and strategies to be included along with site inspection of select equipment and infrastructure.

- **Plan Development**: Navigant developed a Wildfire Mitigation Plan based on the direction and information provided to Navigant by Liberty CalPeco.

- **Review of the Plan**: Liberty CalPeco reviewed and approved their Wildfire Mitigation Plan outlined in this report.

Navigant assisted Liberty CalPeco in preparing this report for filing, based on the information and plans the utility provided. The information presented in this report represents Navigant's professional judgment based on the information available at the time this report was prepared with Liberty CalPeco's overall decision-making. Navigant is not responsible for the reader's use of, or reliance upon, the report, nor any decisions based on the report. NAVIGANT MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED. Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

INTRODUCTION

Given recent, catastrophic wildfires in California, the state passed Senate Bill (SB) 901 in late 2018. This bill requires utilities to adopt wildfire mitigation plans; the details of which are at the discretion of the California Public Utilities Commission (Commission or CPUC) for Investor-Owned Utilities (IOUs). In response, the Commission issued an Order Instituting Rulemaking (OIR) in the Utility Wildfire Mitigation Plans (SB 901) filed under docket number Rulemaking (R.) 18-10-007. The OIR provides guidance to the utilities it governs about the framework and content of the Wildfire Mitigation Plan (WMP or Plan) and a timeline and process for review and implementation moving forward.[1] In this initial OIR, the Commission requires that utilities submit plans by February 6, 2019. The Commission will then review the plans and issue a decision in mid-2019. Due to limited time in developing the document for filing, the Commission understands that the Plans may not be perfectly robust and envision iterations of the Plan evolving over time.

Liberty Utilities (CalPeco Electric) LLC (Liberty CalPeco) has applied a thoughtful approach in developing a holistic strategy to mitigate utility-posed wildfire risks pursuant to SB 901.The process included a strategic, risk-based evaluation that resulted in efforts to improve operational practices, embellish existing preventative and response plans, and coordinate responsibilities within the utility to monitor and enhance the Plan overtime.

[1] The Commission oversees the following utilities: Pacific Gas & Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), Liberty CalPeco, Bear Valley Electric Service (BVES), and Pacific Power.

1. OBJECTIVES OF THE PLAN

1.1 Objectives and Approach

This application by Liberty CalPeco responds to SB 901 and the Commission's related OIR. Specifically, the following aims to fulfill the requirements detailed in Public Utilities Code (PUC) Section 8386, which has been modified by SB 901. The 2018 OIR to *Implement Electric Utility Wildfire Mitigation Plans Pursuant to Senate Bill 901* outlines these requirements. At a high-level, the OIR includes an outline that directs IOUs to frame the Plan to incorporate: prioritization of territory-wide wildfire risks; an overview of (existing and new) strategies, protocols, plans, and programs; a description of situational awareness practices; metrics to monitor the Plan's performance; protocols for communicating with customers regarding emergency events; and cost estimates for each proposed investment. Liberty CalPeco assessed the items laid out in the approved framework and applied potential projects, solutions, and enhancements to current operational practices and standards.

Liberty CalPeco's intentions of the Plan not only align with fulfilling the Commission's requirements, but also aim to demonstrate its commitment to delivering electricity reliably and safely throughout its unique mountainous service territory with consideration of the utility's fire risk. Liberty CalPeco therefore understands how local known conditions require additional measures to ensure catastrophic events (such as the devastating wildfires experienced in the fall months of 2017 and 2018) are mitigated and prevented by the items proposed in this Plan. As information is collected, procedures are implemented, and metrics are assessed, annual changes will be made to the Plan for enhancements or for any items deemed necessary by the Commission. Liberty CalPeco will track the effectiveness of the objectives through internal monitoring and auditing. Pending approval from the Commission, the timeframe for implementing the Plan's objectives will begin before the next filing for the Plan. Some aspects of the Plan's objectives could take place before the upcoming wildfire season, as several existing measures are ongoing. Others will be accomplished by the determined schedules presented in this filing. Liberty CalPeco will adjust timeframes for executing Plan elements throughout the evolution of the Plan and subsequent filings.

Additionally, Liberty CalPeco understands that approval of this Plan does not guarantee any form of cost recovery, and that specific items may be challenged by the Commission. The Commission will weigh the potential cost implications of measures proposed in the Plan during the approval process.

To address the objectives detailed above, the report includes the following sections:

- **Section 2** provides an overview of Liberty CalPeco's fire prevention strategies.
- **Section 3** outlines determined system risks and risk drivers.
- **Section 4** details Liberty CalPeco's operational practices, system hardening, vegetation management, situational awareness, and public safety power shut-off plans to mitigate risks identified in Section 3.
- **Section 5** summarizes emergency preparedness plans as they relate to wildfires.
- **Section 6** identifies metrics to monitor Liberty CalPeco's fire mitigation tactics and Plan performance over time.
- **Section 7** summarizes the cost implications that the utility may incur when implementing specific items of the Plan.

2. DESCRIPTION OF PREVENTATIVE STRATEGIES

This section provides an overview of the preventative strategies and programs currently existing as well as proposed in the Wildfire Mitigation Plan. The categories listed below help delineate how measures are framed and risks are addressed through the development of the Plan. The information provided includes the overarching plan components, supporting examples of programs implemented or proposed, and a discussion surrounding the timing of proposed implementations.

The development process of the Plan included substantial deliberation along with the identification of successful elements of existing programs, plans, and procedures. This process informed senior leadership on any gaps or actions that may be an additional necessity in the timeframe after adopting the utility's Fire Prevention Plan and responding to the requirements of SB 901. The performance and effectiveness of the Fire Prevention Plan was therefore evaluated under these new requirements. Liberty CalPeco incorporated existing plans, programs, and procedures from the prior Fire Prevention Plan into the currently proposed Wildfire Mitigation Plan with consideration that the Fire Prevention Plan would not capture complete requirements outlined in current SB 901 and subsequent OIR form.

2.1 Strategy & Program Overview

Existing and proposed wildfire preventative strategies can be categorized into five main mechanisms that align with utility best practices. Together, the five components create a comprehensive wildfire preparedness and response plan with a principal focus on stringent construction standards, fire prevention through system design, proactive operations and maintenance programs, and well-socialized operating procedures and staff training.

- **Design & Construction:** These strategies consist of system, equipment, and structure design and technical upgrades. The practices in this category aim to improve system hardening to prevent contact between infrastructure and fuel sources, such as vegetation. For example, Liberty CalPeco plans to upgrade priority lines with covered wire, mitigating the risk of bare line contact with vegetation or other fuel sources.
- **Inspection & Maintenance:** These strategies consist of assessment and diagnostic activities as well as associated corrective actions. The practices in this category aim to ensure all infrastructure is in working condition and vegetation adheres to defined minimum distance specifications.
- **Operational Practices:** These strategies consist of proactive, day-to-day actions taken to mitigate wildfire risks. The practices in this category aim to ensure preparedness in high-risk situations, such as dry and windy climatological conditions. For example, "fire mode" is initiated during the summer months, typically in early June through early November. Fire mode enables high speed tripping of all transmission lines with no reclosing (one trip to lockout). As a second example, should the weather forecast predict the National Fire Danger Rating System (NFDRS) Red Flag Warning conditions, the responsible parties will begin to prepare the system for a potential de-energization event, if deemed necessary.
- **Situational & Conditional Awareness:** These strategies consist of methods to improve system visualization and awareness of environmental conditions. The practices in this category aim to provide tools to improve the other components of the plan. For example, Liberty CalPeco's

weather station installation project will improve coordination with local agencies and enhance weather incident monitoring.

- **Response & Recovery:** These strategies consist of procedures to react to de-energization, wildfire, or other related emergencies. Practices referenced aim to formalize protocols for these situations for adequate response and recovery.

In addition to these efforts, Liberty CalPeco has issued an Emergency Preparedness Plan, as included in Appendix C, customer support and communications protocols, as well as performance metrics to monitor its plan over time.

2.1.1 Implementation Timeline Overview

Each of the components outlined above have several strategies and programs, many of which have already been implemented, but could take several years or longer to complete. Other strategies and programs are in the evaluation, pre-approval, or proposal stages and will be implemented in the near future or upon the Commission's approval of the plan. The strategies and programs fall into four "implementation" timeframes: (A) already implemented; (B) implemented before the upcoming fire season, as defined by California Department of Forestry and Fire Protection (CAL FIRE) and the California Department of Forestry; (C) implemented before the next plan filing with the CPUC; and (D) implemented within the next five years. Table 2-1 below outlines the strategy and program and their implementation (start) timelines. The schedules of execution are described in greater detail within Section 4 of this Plan.

Table 2-1. Implementation Timeline

Mitigation Area	Preventive Strategies / Program	Timeframe to Implement
Operational Practices	Infrastructure Protection Teams	A
	Emergency Preparedness and Response Protocols	B
	Automation, Reclosers and Fast Curve Settings	A
	(Supervisory Control and Data Acquisition) SCADA	A
Inspection Plans	Proactive Patrols and Equipment Inspections	A
	Geographic Information System (GIS) Mapping	A
	Tree Attachment Inventory Inspection	C
System Hardening Upgrades	Fusing	C
	Covered Conductor Program	C
	Pole Loading & Replacement	A
	Undergrounding Distribution Lines	B
	Substation Facility Replacement/Enhancement	D

Vegetation Management	Vegetation Management Program	A
	Regular and Off-Cycle Inspections	A
Situational Awareness Protocols	Weather Stations	B
	Weather Monitoring	B
Public Safety Power Shut-Off Protocols	Public Safety Power Protocols	B

3. RISK ANALYSIS AND RISK DRIVERS

3.1 Risk Methodology

As mentioned above, Liberty CalPeco recognizes that it operates within a high-risk wildfire environment while providing operational reliability and safety in electricity delivery. Minimizing risk occurs through capital investment planning, enhanced operational practices, as well as related programs and procedures. Resulting from Decision (D.) 14-12-025[2], the Commission revised the general rate case plan to support the adoption of a risk-based approach in ratemaking practice. This helps provide guidance, transparency, and methods in assessing vulnerabilities in utility operations to aid prioritization of revenue requirement allocators and capital investment projects when setting retail rates.[3]

Liberty CalPeco, is continuing to develop a framework for risk-based decision-making and recently introduced the initial construct in its 2019 General Rate Case (GRC) application.[4] Proposed mitigation items within this Plan were determined based on some aspects, of the risk-based decision-making tool that is still being refined. This also incorporated utility leadership deliberation and external guidance resulting in refinement of proposed measures and strategies. Additionally, the process to identify risks and drivers produced underlying assumptions that shaped prioritization of measure execution. Liberty CalPeco plans to include a final version of its risk assessment tool in its next GRC application filing, benefiting future Plan iterations during reassessment periods.

Risk-Based Decision-Making Framework
At a high level, the risk-based decision-making framework will use a qualitative approach to address potential risk drivers and will quantify the risk through multiplier calculations and heat map plotting. These determinations help inform utility leadership in preparing for capital and expense planning among mitigating fire, safety, and reliability concerns.

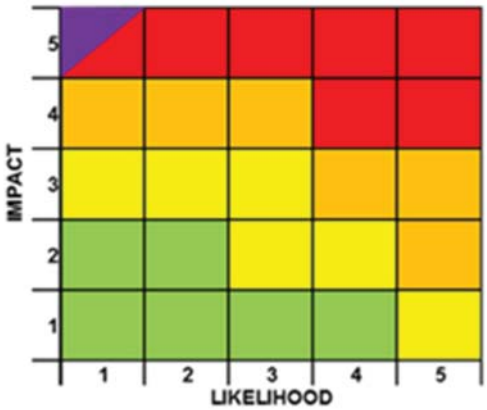
The framework is based on an Enterprise Risk Management structure in that Liberty CalPeco's parent company, Algonquin Power and Utilities Corporation (APUC), addresses highest level risk issues and is responsible for decision-making corporate-wide in the event of a shared risk area. This risk determination methodology is consistent with all utilities under APUC and share common material concerns expressed by California utilities within High Fire-Threat District (HFTD) regions. The methodology is presented as a scale to determine risk severity. These are ranked from one to five, after assessment, and then plotted on a heat map to illustrate low and high-risk grades. Figure 3-1 depicts an example of this.

[2] CPUC. Filled December 4, 2014. "Decision 14-12-025 in Rulemaking 13-11-006." http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M143/K549/143549328.PDF.

[3] CPUC. 2015. "2016 Liberty CalPeco General Rate Case Application." http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M170/K774/170774569.pdf.

[4] Liberty CalPeco. "General Rate Case Application 2019 – 2021 A.17-05-004" submitted on May 1, 2017, which is pending decision.

Figure 3-1. Example of Liberty CalPeco Risk-Based Heat Map



Source: Liberty CalPeco GRC 2019 Application

To combat and control classified risk, APUC has identified "Risk Advisors" from each regional area, who then oversee and evaluate potential risks within the utility. This process is carried out with both a top-down and bottom-up approach to classify areas of greatest operational concern through repetitive assessment cycles to identify, evaluate, communicate, and mitigate risks. When risks fall out of reasonable management through routine protocols, guidance plans are developed to control and monitor the growing risk.

The risk management process is comprised of multiple steps including: risk identification; analysis; evaluation and scoring; decision-making; and monitoring.

When evaluating risk impacts, five categories have been defined by Liberty CalPeco.

1. Safety
2. Legal Compliance
3. Strategic
4. Reputational
5. Financial

This methodology is consistent with the approaches to identify risk from other electric utilities and corporations. Fundamentally, these methodologies share a common construct: identifying system and operational threats, characterize risk, assign roles for appropriate measures, prescribe remedies based on anticipated risk reduction and resource availability, and monitor the effectiveness of the strategy. This similar process is echoed by small utilities such as BVES as well as large IOUs such as SCE.[5]

Risk Assessment Mitigation Phase

Another result of D. 14-12-025 in R. 13-11-006[6] is the order of large electric utilities to report a framework of how the electric utility plans to assess and determine risk to support efforts for minimization and

[5] SCE, "Southern California Edison Company's Risk Assessment and Mitigation Phase Report." November 15, 2018. http://www3.sce.com/sscc/law/dis/dbattach5e.nsf/0/B2ADFEF6506791E9882583460074389A/$FILE/I.18-11-006%20SCE%202018%20RAMP%20Report.pdf.

[6] *See "*Safety Model Assessment Proceeding (A.15-05-002, et. al.)" http://cpuc.ca.gov/General.aspx?id=9099.

mitigation. The Risk Assessment Mitigation Phase (RAMP) along with the Safety-Model Assessment Proceeding (S-MAP) are required to be integrated into the large utility's GRC applications. Liberty CalPeco is considered a small utility by the Commission and therefore is not mandated to direct resources to develop the RAMP or S-MAP. Liberty CalPeco, instead, introduced its initial risk-based decision-making framework, as ordered by the Commission.

The following describes the service territory and how certain conditions are considered when determining risk factors and drivers.

3.2 Service Territory Description

Due to Liberty CalPeco's geographic location within California, the electric utility operates within unique climatological and topographical conditions. This section provides an overview of the Liberty CalPeco service territory, key system aspects, and potential considerations as they relate to wildfires.

Liberty CalPeco serves approximately 49,000 electric customers in California, in and around the Lake Tahoe Basin. Liberty CalPeco's California service territory differs greatly from the three large IOUs in California. Customers are located in portions of Placer, El Dorado, Nevada, Sierra, Plumas, Mono, and Alpine Counties. Almost 80 percent of customers reside or operate within the Lake Tahoe Basin. The biggest population center is the City of South Lake Tahoe.

The Liberty CalPeco service territory extends from Portola in the north to Markleeville and Topaz Lake in the south. The terrain mountainous and heavily forested, with elevations ranging from 9,050 feet in Squaw Valley to just under 5,000 feet at Portola. Most of Liberty CalPeco's customer base is located at elevations greater than 6,000 feet.

Electric load reflects the economic activities in the area. The region has little manufacturing or heavy industry. The economy of the Tahoe Basin is dominated by tourism with the major businesses being hotels, motels, and ski resorts. Approximately half of the electricity Liberty CalPeco delivers is to residential customers and approximately 60 percent of residential accounts are second-family homes or rentals. Electric demand peaks for Liberty CalPeco in the winter period, particularly during Christmas week when tourism is highest.

Liberty CalPeco has two regions that operate independently. The North Lake Tahoe Region is supplied from the North Truckee substation, and includes the communities of Squaw Valley, Northstar, Portola and Loyalton. The South Lake Tahoe Region is supplied from the Buckeye, Muller and Topaz substations in Nevada, and includes the City of South Lake Tahoe along with the communities of Markleeville, Coleville and Walker. Interconnection between the two regions is minimal.
Figure 3.2 on the following page illustrates the service territory.

Figure 3-2. Map of Liberty CalPeco Service Territory

Source: California Energy Commission, 2015

Given its parcels of an alpine climate, Liberty CalPeco must also consider the following when making decisions on risk and implementing plans related to wildfire mitigation: (1) electrical system design and assets, (2) geographic territory and climate conditions, (3) local load profile.

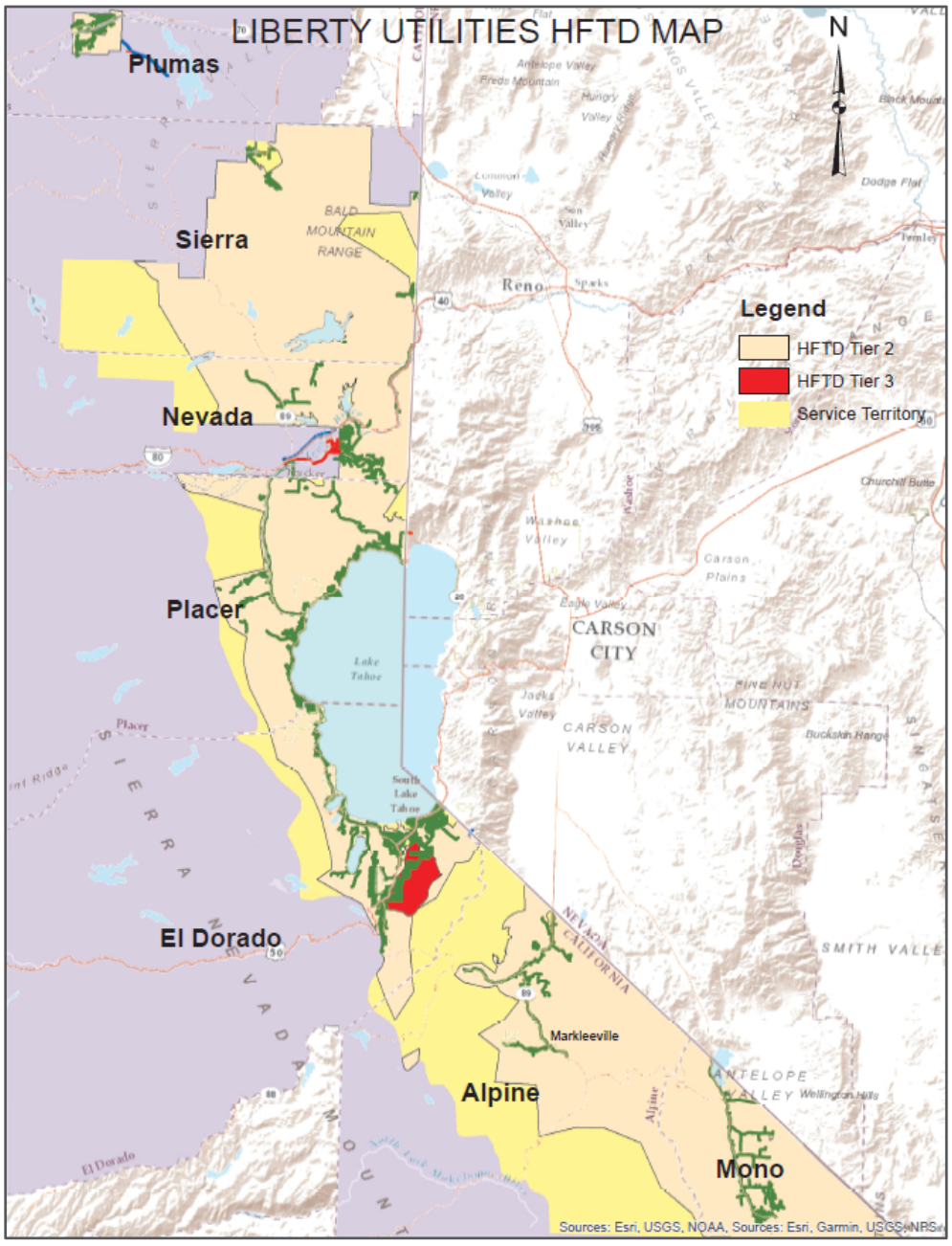
- **Electrical System Design & Assets:** Liberty CalPeco owns and operates 78 miles of overhead 60 kilovolt (kV) transmission lines, 20 miles of 120 kV overhead transmission lines, less than one mile of underground 60 kV and 120 kV transmission, 1,400 miles of overhead distribution circuit miles, 480 miles of underground distribution circuit miles, 14 sub-stations and one diesel-fueled 12-megawatt emergency/peaking generating facility. The risk of these assets to ignite a wildfire were considered when creating the Plan.

- **Geographic Territory and Climate Conditions:** The service area is located in Tier 2 and Tier 3 HFTD as defined by the adopted state-wide fire-threat map, resulting from R. 15-05-006. The area is heavily forested in a mountainous climate zone with limited access to many regions of the service area. Customer residencies reach up to 9,050 feet in elevation and weather conditions consist of dense snowpack during the winter months with dry conditions, wind, and warm temperatures in late summer to early fall. Liberty CalPeco also recognizes that there are local known conditions such as heavy snowfall, which require unique system upgrades and infrastructure enhancements.
- **Local Load Profile:** Liberty CalPeco experiences seasonal load swings between the winter and summer months with peaks in the winter and high-load hours from 5 p.m. to 10 p.m. This is primarily due to increased demand from seasonal population influx, vacation home visits, and an increase in resort loads. Liberty CalPeco's load profile matches that of the surrounding mountainous service territories and differs greatly from the larger IOUs in California, having average air conditioning load until the later parts of summer, and flattening out in other seasonal conditions. Of the 49,000 customers, 57 percent are residential while 43 percent are commercial.

3.3 Service Territory Wildfire Risk Areas

There are several wildfire risk assessment designations from various organizations, including the Commission, CAL FIRE, the Sierra Front Interagency Dispatch Center (SFIDC), and the US Department of Agriculture (USDA). Each designation provides a different perspective of potential fire danger. For example, the USDA's NFDRS assesses fire threats at the county-level based on weather, while CAL FIRE includes four fire-hazard severity zones based on various factors. Figure 3-3 on the following page illustrates the designation for fire threat within Liberty CalPeco's territory.

Figure 3-3. Liberty CalPeco High Fire Threat Districts



Source: Liberty CalPeco, Fire Prevention Plan, 2018

Based on the map, there are several regions with high and very high fire threat ratings throughout the service area bordering Nevada. In order to maintain awareness of fire-prone risks as those conditions arise, Liberty CalPeco monitors several fire maps and assessment systems regularly and has created procedures and protocols, accordingly. Table 3-1 below outlines the various rating systems and Liberty CalPeco's service territory rating within that system.

Table 3-1. Wildfire Risk Assessments in Liberty CalPeco Service Territory

Agency and / or Rating Name	Scope of Fire Risk Rating	Risk Rating
CPUC, Fire-Threat Map Adopted January 19, 2018[7]	Areas or zones where enhanced fire safety regulations in D. 17-12-024 will apply[8]	HFTD; Mostly Tier 2 (elevated risk) with some Tier 3 (extreme risk) areas.
USDA Forest Service, NFDRS[9]	County-Level assessment of fire danger for that day or the next day based on fuels, weather, topography, and risks	Identifies the number of days of High to Very High Fire Danger Levels
CAL FIRE, California Fire Hazard Severity Zone Map Update Project[10]	City and County-level assessments of fire "hazard" zones	Moderate, High, and Very High Fire Hazard Severity Zones
SFIDC[11], Sierra Front Wildfire Cooperators	Interagency monitors and mobilizes local resources against identified fire threat within the Sierra Front area	Risk boundary covers eastern region service area, which lies in Tier 2 and Tier 3 HFTD[12]

There are also specific areas with high risks and would be more adversely affected in a wildfire or emergency. These areas consist of Tier 3 designation, dense vegetation coverage and accessibility due to remote locations. The cities/regions identified include: Squaw Valley, Tahoe City, Brockway, Truckee, and Meyers.

These areas are mountainous and heavily forested. Liberty CalPeco has infrastructure operating within these regions, creating challenges in upgrading the infrastructure and maintaining visibility on the lines. Specifically, infrastructure changes and some maintenance operations require the use of helicopters to access overhead lines both within and outside of the Tahoe basin due to inaccessibility. Specially-trained line staff are required to foster operational efficiently in such a challenging environment.

As described above, the service territory's high elevation means the area consists of a heavily treed, mountainous environment, which is highly vulnerable to wildfires under the right conditions. Liberty CalPeco understands this risk and has prepared its fire mitigation plans accordingly. Furthermore, it has complied with all fire-safety regulations adopted to date, including those set out in GO 95, 165, and 166.

[7] CPUC, Commission Fire Safety Rulemaking Background 2018, http://www.cpuc.ca.gov/firethreatmaps/.

[8] CPUC, "Commission Adopts New Fire-Safety Regulations," December 14, 2017, http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF.

[9] USDA Forest Service, "National Fire Danger Rating System," https://www.fs.usda.gov/detail/inyo/home/?cid=stelprdb5173311.

[10] CAL FIRE, Wildland Hazard & Building Codes Cities for which CAL FIRE has made recommendations on Very High Fire Hazard Severity Zones (VHFHSZ), http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones_maps_citylist.

[11] The SFIDC compiles local information such as lighting strike maps, local weather updates as well as national updates such as the National Interagency Fire Center, National Incident Management Situation Report, and preceding resources indicated in Table 3-1.

[12] SFIDC, Webmap of Territory Ownership, 2012, http://sierra-front.net/sites/default/files/SFIDC_Webmap_ownership.JPG

3.4 Wildfire Risks and Drivers

Liberty CalPeco pursued an assessment methodology to identify and prioritize wildfire risks. This effort determined which facilities and electrical assets would meet criteria for inclusion in the utility's Fire Prevention Plan, pursuant to R. 08-11-005.[13] The plan influenced the prioritization of risk drivers in the development of the WMP. The process and key considerations are detailed at a high-level in this section.

3.4.1 Prioritized Risks and Risk Drivers

To identify risks and understand each risk's potential for starting wildfires, Liberty CalPeco first analyzed wildfire drivers and how these may change over time. To perform this task, information from evaluating wind loading design standards, substation construction design standards, and equipment operations was compared to owned electrical assets through internal review. Additionally, this required an overall territory assessment to include unique conditions that may exacerbate weather events that lead to wildfire. This drew from information gathered from meteorological monitoring platforms and determinations to help identify potential hazards. The utility then applied this knowledge, which culminated in an approach to mitigate wildfire risks. This is later discussed in Section 4.1.

According to the US Forest Service (USFS), there are three essential elements in the "fire triangle": heat, fuel, and oxygen.[14] The first, heat, provides the initial ignition of fire and helps it spread. The second, fuel is any form of combustible material; combustibility is mainly defined by moisture content. Finally, the third, oxygen, is a chemical that supports the burning; most fires require roughly 16 percent oxygen content and the air contains roughly 21 percent. The conditions necessary for these elements to come together have created an increasing number of wildfires in recent years.[15] For example, increasing complexity of implementing fire suppression and fuel treatment programs have resulted in accumulations of debris, such as leaves, branches, excessive overgrowth, and dead vegetation. Additionally, drought patterns, due to climate change, have increased and continue to be exacerbated by these conditions.

Liberty CalPeco has faced challenges with winter storms and wind gusts resulting in regional and/or equipment damage. For example, in July 2017, the service territory experienced a wildfire that burned several poles within the city of Floriston, prompting generators to assist in restoring service during the subsequent 38-hour outage.[16] Other incident events have been recorded and categorized by principle cause as discussed within this Plan.

Given the elements of the fire triangle with this recent wildfire, Liberty CalPeco understands there are contributing factors to documented outage events in which ignition could be caused by utility infrastructure assets and proximity to combustion materials, such as trees and dry vegetation. Once these materials come into contact, by way of weather conditions, inadvertent contact, or by other means, the risk for wildfire becomes extremely high. For this reason, Liberty CalPeco analyzed its reliability data and determined general causes for outage incidents. The analysis focused on recent data and examined outage-related events caused by vegetation contacting bare wire and wire down occurrences. Table 3-2 shows the results of the analysis.

[13] Rulemaking 15-05-006 is the successor to R. 08-11-005 regarding new fire-safety regulations.

[14] US Forest Service Smokey Bear, "Elements of Fire", 2018, https://smokeybear.com/en/about-wildland-fire/fire-science/elements-of-fire.

[15] US Forest Service Smokey Bear, "Fire Science", 2018, https://smokeybear.com/en/about-wildland-fire/fire-science.

[16] Liberty CalPeco, "2017 System Reliability Report" Response to Commission D. 16-01-008

Table 3-2. Liberty CalPeco Analysis of Wildfire Risk Events (2011-2018)

Risk Event [Outages]	Count	Percent of Total
Total Vegetation-Bare Line Contact	**128**	**57%**
Caused by Vegetation Proximity	76	34%
Caused by Weather or Third Party	52	23%
Total Wire Down Event	**96**	**43%**
Caused by Weather	74	33%
Caused by Vegetation	9	4%
Caused by Third Party	2	1%
Caused by Equipment Failure	11	5%

Source: Liberty CalPeco, 2018

As illustrated by the table above, bare line contact and wire down events pose the greatest risk for wildfires in the Liberty CalPeco system. These events are mainly driven by vegetation coming into contact with energized wires under a variety of conditions. This makes sense given the dense tree coverage found in the mountainous terrain. Weather also contributes to bare line contact in both the summer and winter months, with a majority recorded during winter due to snowpack from intense winter storms, and wind being the primary driver during the dry, summer conditions. From these outage reports, Liberty CalPeco understands the overall system has vulnerabilities. While in compliance with design standards, the system may require countermeasures to ensure hazardous conditions of peak elevation and wind gusts are mitigated by a hardened electrical utility network.

3.5 Fire-Threat Territory Evaluation

R. 18-10-007 requires that, if applicable, the Plan shall include an evaluation of fire-threat territory expansion if an assessment by the utility has been performed. Unlike large utilities that have electrical equipment not in presently identified high risk fire territory, all of Liberty CalPeco service area is in Tier 2 and Tier 3 HFTD. In as much a related study to assess whether HFTD areas should be expanded or modified is not necessary or appropriate. The designations for Tier 2 and Tier 3 HFTD by the Commission align with the utility's current understanding of elevated risk areas within and around the service territory. If deemed necessary by the utility or the Commission at a later date, Liberty CalPeco will conduct these evaluations to determine enhancements to these districts and include them in future Plan filings.

4. WILDFIRE PREVENTION STRATEGY & PROGRAMS

Liberty CalPeco has developed a comprehensive Fire Prevention Plan as well as mentioned in Section 2, which significantly influenced the development of this Plan. Specifically, the Fire Prevention Plan was activated in response to Commission General Order (GO) 166, Standards for Operation, Reliability, and Safety During Emergencies and Disasters. The Plan builds off those strategies and also draws from existing efforts to meet the Commission's GO 95[17], Overhead Electric Line Construction, which specifies rules around the design, implementation, maintenance, and replacement of all overhead electric utility facilities. The SB 901 filing will provide updates on existing and planned programs while offering insight into potential mitigation investments.

Strategies and programs proposed in this Wildfire Mitigation Plan will be reviewed annually, prior to each iteration filing of the Plan, to evaluate progress and determine if items should be added or modified. Cost recovery for these mitigation items is not guaranteed. To account for this, electric utilities are authorized to implement two wildfire mitigation plan memorandum accounts (MA) in compliance with PUC Section 8386 (c)(2)(4)(j). Liberty CalPeco filed its first Advice Letter (AL) (No. 110-E) on December 21, 2018, establishing a Fire Risk Mitigation MA (FRMMA) to capture costs incurred by activities in developing the Plan otherwise not defined in the revenue requirement. Upon acceptance of this Plan, Liberty CalPeco will file a second AL to establish a second MA to track costs incurred when implementing the Plan. Liberty CalPeco will cease tracking costs in the FRMMA upon activation of the second MA, and instead, record costs associated with risk mitigation items not covered through rates.[18] The FRMMA will remain active to track additional costs associated with activities not included in the Wildfire Mitigation Plan approved by the Commission. Maintaining this accounting process will prevent issues with double-tracking.

The details of the overall strategy of the proposed Wildfire Mitigation Plan is presented in Section 4.1.

4.1 Risk Mitigation Strategy

Using a basic approach of the developing risk-based decision-making approach outlined in Section 3, Liberty CalPeco enhanced its existing wildfire mitigation practices to address the health and level of risk drivers such as aging infrastructure and equipment or contact with vegetation. The strategy includes several components addressing concerns spanning across the entire system along with enhanced operational practices. This section provides existing and planned mitigation techniques for each.

Expanding on Liberty CalPeco's existing Fire Prevention Plan, the following captures areas of utility-posed risk along with mitigation tools to reduce the chances of wildfire within the service territory. The mitigation area, tools, and rationales are identified in Table 4-1 below.

[17] Latest revision issued in May of 2018, CPUC Decision No. 18-05-042

[18] Liberty CalPeco will propose to track identified ongoing strategic items to the currently authorized FRMMA until the second WMP-related MA is established and initiated. Liberty CalPeco will reclassify appropriate costs, as necessary, to the second MA upon approval.

Table 4-1. Risk Mitigation Items

Mitigation Area	Mitigation Tool / Program	Rationale
Operational Practices	Infrastructure Protection Teams	Ensure staff is prepared to mobilize in high-risk and emergency situations
	Emergency Preparedness and Response Protocols	Ensure protocols are up-to-date with the latest mandates and best practices
	Fire Mode, Automation, Reclosers & Fast Curve Settings	Mitigate downed wires and reduce energy at potential fault locations
	SCADA	Promotes faster response to outage notifications
Inspection Plans	Proactive Patrols	Reduce risk by conducting regular system inspections to identify at risk areas
	Equipment Inspections	Regular patrols that identify aging infrastructure or equipment that pose a fire risk
	Geographic Information System (GIS)	Leverage tool to account for equipment inventory and provide available data to the Commission and CAL FIRE when necessary
	Tree Attachment Inventory Inspection	Mitigate contact of ignition (heat) fuel sources by increasing distance between sources
System Hardening Upgrades	Fusing	Mitigate downed wires and reduce energy at potential fault locations
	Covered Conductor Program	Mitigate contact of ignition source (heat) by covering the wire.
	Pole Loading	Determine if structural integrity of the pole is within calculated threshold
	Undergrounding Distribution Lines	Significantly reduces fire risk while maintaining aesthetic quality of the surrounding environment
	Substation Facility Replacement/Enhancement	Modernize aging capital infrastructure to mitigate fire risk
Vegetation Management	Vegetation Management Program	Mitigate wildfire risk conditions by removing fuel source and patrolling lines
	Regular and Off-Cycle Inspections	Readily deploy staff/contractors when notified of leaning or fallen vegetation or when encountered on routine patrols.
Situational Awareness Protocols	Weather Stations	Improves forecasting and de-energization and restoration plans
	Weather Monitoring	Forecasts potential hazards; promotes quick response time
Public Safety Power Shut-Off Protocols (PSPS)	Public Safety Power Protocols	Mitigates wildfire risk conditions by shutting off the power and removing potential ignition (heat) source

Based on the items identified, Liberty CalPeco evaluated the impact for risk mitigation, feasibility, and cost-effectiveness of each item. The items that passed the initial screening are included in Liberty CalPeco wildfire mitigation portfolio and described in the next section. Liberty CalPeco will continue to

monitor all items not currently planned for inclusion and continue to explore new technologies as they arise.

4.2 Operational Practices

Operational practices encompass standard company procedures that relate to wildfires, including vegetation management, turning on/off high-speed line clearing, inspection and maintenance, and Public Safety Power Shut-off Protocols (PSPS). These practices help the utility manage risk on a day-to-day basis through its operations.

4.2.1 High-Speed Clearing (Automatic Reclosers & Fast-Curve Sensitive Relay Settings)

High speed clearing refers to the ability to clear faults using automatic breakers, reclosers with fast-curve sensitive relay settings. Traditionally electrical circuits were designed to automatically open and close to detect and isolate faults. In many cases the relays would make three attempts to isolate a fault condition, each potential attempt could cause an electrical spark, which could be a source of ignition. Presently all transmission line, originating from a Liberty CalPeco substation, have a Fire Mode setting, which enables high-speed clearing with no circuit reclosing (one trip to lockout). Today, many utilities are implementing modern controls on the distribution lines that allow them to designate two settings: a normal setting and a wildfire setting (fire mode). The latter setting allows utilities to reduce the number of corrective attempts to prevent sparks. This will be coupled with SCADA technology for remote control of the equipment Liberty CalPeco categorizes this mitigation strategy under *(3) Operational Practices.* The list below details Liberty CalPeco plans with regard to these technologies.

- **SCADA Installations**: Liberty CalPeco has installed SCADA system-wide, which will allow for remote control of its system. Currently, Liberty CalPeco has SCADA installed on certain parts of its system but will expand its rollout. SCADA will control the automatic reclosers and fast-curve settings. Additionally, remote monitoring of system assets will promote faster outage response.

- **Automatic Recloser Upgrades**: Liberty CalPeco plans to upgrade existing reclosers with modern reclosers using electronic supervisory controls. This technology provides the settings necessary to reduce electrical sparks, while also helping to mitigate power outages. The rollout of this technology will begin in 2019. See Table 4-2 for a schedule of rollout.

Cost Estimates
Costs associated with replacing reclosers are approved capital expenditures within the 2019 GRC. Considering materials, labor, vouchers, and engineering needs, total recloser replacements are estimated to be roughly $735,000 with $440,000 anticipated for the first six and approximately $293,000 for the second year's efforts.

The planned recloser replacements for distribution lines are listed in Table 4-2 below.

Table 4-2. Planned Recloser Replacements

Year	Quantity	Notes
2019	6	SCADA Controls
2020	4	SCADA Controls

4.2.2 Elevated Weather Events and Red Flag Warning Operations

Liberty CalPeco has relationships with several weather monitoring and forecast agencies to assist in planning against hazardous storm and wind conditions. The details of these efforts are presented in Section 4.6.1. Upon developing the Fire Prevention Plan resulting from D.12-01-032 pursuant to R. 08-11-005, Liberty CalPeco approached criteria for inclusion through an assessment of data from 1) Red Flag Warnings, 2) infrastructure and equipment design standards, 3) wind data, and 4) GIS mapping.

Specifically referencing Red Flag Warnings and wind data, the utility determined the Fire Weather Zone Boundaries spanned areas within the service territory (Zone 271, 272, and 273). Historical data as far as ten years back was collected for each occurrence to initiate evaluation of wind data for each identified Red Flag Warning. To track wind data, the National Weather Service (NWS) Remote Automatic Weather Stations were mapped through GIS that covered 25 miles of the service territory.

During Red Flag Warnings, wind gust data from the NWS as well as peak elevation zone reports (from Bliss State Park)[19] are monitored and discerned for when gusts last three-seconds or more. Depending on conditions, the Manager in Charge or the On-call Supervisor will direct responsive action to appropriate utility staff.[20] This operational procedure remains an ongoing practice in abating weather-related risks. Liberty CalPeco categorizes this mitigation strategy under *(3) Operational Practices*.

Cost Estimates
Activities operating under Red Flag Warnings take place during normal operations and are covered through the GRC. Therefore, no additional funding is required for implementation.

4.2.3 Wildfire Infrastructure Protection Teams

During the process of developing this Plan, Liberty CalPeco has roles for a team that addresses risk items related to wildfires and remediation actions that overlap with responsibilities of administrative, engineering and operations, energy resources, field team, and emergency response staff. Liberty CalPeco has assigned roles and responsibilities, of which align with department heads or their designees, to manage approved strategies identified to mitigate wildfire risk from utility infrastructure. Liberty CalPeco categorizes this mitigation strategy under *(3) Operational Practices*.

The procedures associated with this Wildfire Infrastructure Protection Team (WIPT) are with the leadership of the Vice President (VP) of Operations, or his designee, for day-to-day management of system-hardening and operational practices to mitigate wildfires. Regarding emergency events, decisions requiring responsive action must be prompt to ensure systems are operating safely and reliably. Liberty CalPeco has a comprehensive plan in place with detailed protocols that address this. Section 5 details these roles and responsibilities identified in Liberty CalPeco's Emergency Management Plan.

Cost Estimates
Activities related to the WIPT will take place during normal operations and are covered through the GRC. Therefore, no additional funding is required for implementation.

[19] Western Regional Climate Center. 2018. "DL Bliss State Park California." https://wrcc.dri.edu/cgi-bin/rawMAIN.pl?caCDLB.

[20] Liberty CalPeco. Pursuant to Commission D. 12-01-032. "Fire Prevention Plan for Overhead Electric Facilities."

4.3 Inspection and Maintenance

Inspection plays an important role in wildfire prevention. Liberty CalPeco currently patrols its system regularly and plans to increase the frequency of inspections. As described in Section 4.1, inspection procedures play a significant role within the Vegetation Management Plan. Liberty CalPeco categorizes this mitigation strategy under *(2) Inspection and Maintenance.* The list below outlines current and future considerations that increase the efficacy of inspection protocols:

- **On-Ground Inspection:** Manual inspections include both system and vegetation patrols. Currently, Liberty CalPeco has a detailed system patrol process complying with GO 165 requirements, which includes annual patrols for most system infrastructure. Tier 3 area circuits, given their high-fire risk status, are patrolled more frequently, on a bi-annual basis. As for vegetation inspections, Liberty CalPeco monitors vegetation during its system patrols and also directs a contractor to conduct additional inspections and vegetation management.

- **Equipment Inspection:** Recognizing the hazards of equipment that operate high voltage lines, Liberty maintains a formal inspection and maintenance program for distribution, transmission and substation equipment. Transmission and distribution equipment are patrolled every one to two years with a detailed inspection performed every three years. Substations are inspected quarterly with substation relays being maintained every 3 to 6 years, depending on the type of relays as well as staffing availability.

- **Vegetation Inspection and Maintenance:** When conducting routine maintenance that involves preventative inspection, Liberty CalPeco responds to high-risk fuel sources with efforts to remove identified vegetation, as needed. This maintenance work occurs once every three years per circuit. Pursuant to GO 95, Rule 35 and Public Resources Code (PRC) 4293 Clearance Exempt trees, Liberty CalPeco will maintain a record of exempt trees with recommendations or corrective actions. Liberty CalPeco also performs inspections of vegetation concerns when either service calls are made or utility employees or vegetation management contractors identify at-risk vegetation while performing day-to-day operations.

- **GIS Data Requests:** Liberty CalPeco currently tracks and maps specific items of its electrical infrastructure as needed. Current practices do not include the sharing of GIS information outside of vendor relationships or regulatory requests. In understanding the importance of collaborating with key agencies, such as the Commission and CAL FIRE, and Liberty CalPeco plans to provide its data in accordance with Commission proceeding I. 17-06-027, Pole OII Phase I, which relates to sharing pole databases. The efforts to track poles are described in detail in Section 4.4.2. Additionally, the utility will provide information to stakeholder agencies on a case-by-case basis with responsibility of the GIS Manager or their designee. Costs for this effort are associated with normal operations and administrative hours.

Future considerations are being evaluated to enhance inspection procedures. Liberty CalPeco will engage vendors and request quotes related to the following technologies over the next year:

- **LIDAR Ground Inspections:** Currently, Liberty CalPeco is evaluating the effectiveness of LIDAR inspections. These inspections involve using vehicles that perform imagery and mapping technology to view vegetation growth proximity to the electrical equipment. Liberty CalPeco is currently assessing the effectiveness of this type of inspection. Pending feasibility and approval, Liberty CalPeco will create a deployment plan for year 2020.

- **Infrared Inspections:** Liberty CalPeco plans to evaluate the effectiveness of an Infrared Inspection Program. At the present time, Liberty CalPeco has requested price quotes to perform an evaluation. An infrared inspection uses a device that determines the relative temperature of

equipment on the electrical system. The infrared inspection can detect, using temperature reading, equipment that may fail in service.

Cost Estimates
Activities related inspection activities will be covered will take place during normal operations and are covered through the GRC. Therefore, no additional funding is required for implementation.

4.4 System Hardening Plans

System hardening relate directly to system infrastructure or design enhancements or modifications. Traditionally, Liberty CalPeco designed its system to provide reliable and safe power to customers; its system design aligns closely with other California utilities. For example, most utilities in California have bare wires, given the focus on reliability. However, considering intensified wildfire conditions, the utility has considered enhancing its system designs and upgrades to include evaluating wildfire risk in system hardening efforts while remaining in compliance with construction mandates. The sections below detail the steps taken to improve hardening, based on the risk-mitigation evaluation.

4.4.1 Covered Conductor

Covered conductors are any conductors (wires) protected by layers of insulation, so the conductors are protected when energized. Vendors have designed these wires, so they can withstand contact with vegetation and/or other debris. Bare wires have traditionally been used throughout California because they provide a reliable and cost-effective solution to delivering energy to customers. However, Liberty CalPeco has recently reevaluated its system design in the context of wildfire risk and decided to, where appropriate (i.e. based on wildfire risk), replace bare conductors with covered conductors. This timeline is determined on a five-year scale, though may be adjusted with each iteration of the Plan.

Reconductoring Prioritization Plan
Reconductoring of bare electrical lines will be performed in various locations in Liberty CalPeco's Tier 2 and Tier 3 HFTD. Several factors drive the ability to begin reconductoring. These factors include: (1) Receipt of the construction permit by regulatory authorizes, (2) availability of material, (3) resources to perform the work, and (4) line clearance (maintaining reliability). Liberty CalPeco envisions to begin reconductoring in 2019 as the first two projects were prioritized based on the ability to receive the construction permit within the same year.

Tahoe City Line 7300
This project comprises reconductoring of Tahoe City Line 7300 to enhance electric service reliability and improve the safety and operational integrity of the electric grid. The project includes reconductoring segments of the 15,000 feet of overhead lines out of the Tahoe City Substation as described in the pending 2019 General Rate Case (GRC) application.[21] The prioritization for reconductoring the line was primarily driven by the need to replace failing equipment and proactively installing grid hardening assets.

Topaz Line 1261
This project is the reconductoring of Topaz Line 1261 to enhance electric service reliability and improve the safety and operational integrity of the electric grid. The project includes reconductoring segments

[21]Liberty CalPeco. "A1812001 2019 General Rate Case Application," December 3, 2018. http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M245/K570/245570209.PDF.

7,500 feet of overhead lines out of the Topaz Substation.[22] The project also involves pole replacement based on loading standards (GO 95) for "Heavy" and "Grade A" loading along the 7,500 feet of overhead conductors. New poles along with covered conductors will replace aging equipment over the span of the line. This circuit supports rural customers and is noted in consecutive reliability reports (2016, 2017) as the worst performing circuit within Liberty CalPeco's service territory.[23] This area frequently experiences hazardous weather conditions such as high winds and below freezing temperatures. This paired with the deterioration of the infrastructure has resulted in higher risk of improper wire sag along with conductors breaking under ice and snow strain.

These projects are presently in the "permitting stage" with construction expected to in late 2019. They were originally designed to use bare conductor replacements but based on the wildfire risk assessment, the projects will be re-designed to use covered conductors. Incorporating this element supports the Plan's goal of mitigating potential wildfire risk with the installation of covered conductors.

Cost Estimates

Liberty CalPeco approximates the typical overhead construction costs to be $438,000 per mile. After determining additional costs via covered wire, the estimate increases around 40 percent yielding $614,000 per mile not including pole replacements. Liberty CalPeco propose to reconductor 1-2 miles per year which will include pole replacement where necessary based on GO 95 for Heavy Loading and Class A construction. These projects are referenced in the GRC application pending Commission approval.[24] Liberty CalPeco will track additional costs of covered wire materials to the FRMMA (until the second MA is approved), as these efforts enhance fire protection strategy.

Future considerations are under constant review as inspections help direct the need to replace and enhance overhead conductors and electrical facilities. Liberty CalPeco has compiled an initial priority list of distribution circuits that would mitigate wildfires using covered conductors. Based on the risk, some circuits will have the entire circuit reconductored and other circuits will have portions of circuits reconductored. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction*.

The lists below provide the prioritization for planned enhancements and distribution lines to be evaluated.

1. Tahoe City 7300 – (approximate total circuit length: 58 miles).
2. Topaz 1261 – (approximate total circuit length: 54 miles).
3. Meyers 3400 – This circuit originates in Tier 3 HFTD; (approximate total circuit length 15 miles).
4. Stateline – Meyers 640 – (approximate total circuit length: 8 miles).
5. Meyers 3300 – This circuit originates in Tier 3 HFTD; (approximate total circuit length 53 miles).
6. Squaw Valley 7201 – (approximate total circuit length: 12 miles).
7. Brockway 5100 – (approximate total circuit length: 2 miles).
8. Tahoe City 7200 – (approximate total circuit length: 5 miles).
9. Truckee – Squaw Valley 609 Truckee 7202 (underbuilt) – (approximate total circuit length 10 miles).

[22] Liberty CalPeco. "A1812001 2019 General Rate Case Application," December 3, 2018. http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M245/K570/245570209.PDF.

[23] Ibid.

[24] Ibid.

Table 4-3 below shows the circuits, by year, which reconductoring will begin and the estimated amount of reconducting (covered conductors) that will be completed each year. Base on available resources, material, weather conditions and line clearances, the amount of covered conductor installed each year will vary.

Table 4-3. Planned Circuit Reconductoring Start Date

Year	Circuit Number(s)	Miles
2019	Tahoe City 7300	1-2
	Topaz 1261	1-2
2020	Meyers 3400	1-2
	Stateline to Meyers 640	1-2
2021	Meyers 3300	1-2
2022	Squaw Valley 7201	1-2
2023	Tahoe City 7300	1-2

4.4.2 Pole Loading and Replacement

Pole loading assessments are performed in compliance with the requirement of GO 95 rule 44. In that requirement, the utility must make available, if requested, all pole loading testing data to regulators in support of managing statewide electrical infrastructure standards. Liberty CalPeco understands that failing poles pose both a safety, reliability, and fire risk and seek to enhance current conditions through this assessment. To conduct these calculations, Liberty CalPeco utilizes industry-standard software. The assessment is performed after accounting for pole locations, physical inspections, equipment installed, and proposed additional equipment.

Pole Replacement Program

As part of the efforts outline in Section 4.4.1, Liberty CalPeco will be reconductoring segments of its circuits starting 2019. In adopting the plan to replace bare wires with covered conductors, Liberty CalPeco will perform a pole loading calculations as well as pole health evaluation to determine the strength and weight baring ability to support the covered wire. If the calculation results in any pole failing the assessment, a pole replacement will take place for those at risk. This practice will continue throughout the covered conductor replacement program. At the present time, Liberty CalPeco does not have an estimate of number of poles that will require replacement but expects the majority of poles will require replacement. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction*.

Cost Estimates

To conduct these pole loading calculations, Liberty CalPeco requires annual software licenses as well as operational costs for pole testing. Annually, approximately $16,765 is spent on software costs with each pole requiring generally two hours of evaluation, at an hourly figure of around $50. This is an operations and general revenue expense and is to be recovered through the GRC.

Additional expenses will be required if pole loading tests fail when preparing for the install of covered conductors. Liberty CalPeco anticipates each pole replacement to cost approximately $12,000 to $15,000.

4.4.3 Fusing

Fuses (Fusing) refer to protective devices that protect the distribution system from faulted or damaged lines and equipment. Historically, Liberty CalPeco, other utilities in California, and utilities across the country have used conventional fuses to protection “lines”. These conventional fuses, when operated, expel hot particles and gases, which can start fires. In contrast, current limiting fuses, that traditionally were used for protecting “equipment” expel no materials, limits the available fault current, and in many cases can reduce the duration of faults. The use of both conventional and current limiting fuses provides for a high level of reliability. In order to mitigate fires, Liberty CalPeco proposes to replace conventional fuses with current limiting fuses on much of its system. Single phase, two phase and three phase lateral lines that are protected with conventional fuses will be replaced with current limiting fuse. In additional, pole mounted transformers that have conventional fuses will be replaced with current limiting fuses. There are specific locations and types of equipment, that based on operating requirements, where conventional fuses must still be used. Liberty CalPeco plans the fuse replacement rollout over-time principally focused on higher risk wildfire prone circuits. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction*.

Liberty CalPeco will implement this plan as an ongoing effort, set to complete all investment upgrades within the span of 10 years. All costs will be tracked in the proposed FRMMA.

Table 4-4 shows the number of fuses that will be replaced:

Table 4-4. Planned Fuse Replacements

Fuse Replacements	Quantity
Total Number of Fuse	13,466
Number of Fuse Locations	6,741
Location Replaced Per Month	60
Years to Replace	9
Annual Cost of Fuse Changeouts ($)	721,550

4.4.4 Substation Design Hardening

Liberty CalPeco has made recent applications to modernize or rebuild system components after assessing their assets on the basis of reliability, safety, and age of the system equipment.[25] Liberty CalPeco has identified two substations that pose a potential wildfire risk and will be addressed with the

[25] CPUC. 2018. “Liberty CalPeco General Rate Case Application.” & CPUC. 2015. “Liberty CalPeco General Rate Case Application.”

approval of the Plan. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction*.

Brockway Substation

The existing Brockway Substation is a 60-year old facility constructed using wooden poles and wooden cross-arms (Wood Box Construction). (See Figure 4-1). The 60kv and 14.4kv high voltage lines are attached using insulators to the extremely dried out wooden poles and wooden cross-arm. The substation has obsolete Oil Circuit Breakers (OCB), which operate (close/open) to de-energize circuits when a fault occurs (e.g. equipment failure, contact with vegetation, etc.). An industry recognized "failure mode" of OCB is the ignition of the large quantity of oil located in the circuit breaker that can result in an uncontrolled fire. The flaming oil can very quickly result in quick fire spread, posing a potential wildfire situation. Modern substation circuit breakers use "vacuum" or "gas" instead of "oil" to interrupt the power flow or fault current. The OCB, being 60-years old, can operate much slower then modern vacuum or gas circuit breakers. During an event (wire down, failed equipment, etc.), the faster power is shut down, reducing the risk of vegetation ignition.

Figure 4-1. Brockway Substation

The substation is surrounded by large very heavy tree growth on three of the four sides of the substation perimeter as illustrated in Figure 4-2. The proximity of the substation equipment to vegetation causes an additional concern that the substation could cause a wildfire.

The substation was recently examined by Todd Conradson, Division Chief Fire Marshal for the North Tahoe Fire Department. The substation examination was requested by Liberty CalPeco due to the heighten fire risk the substation could create.

After inspecting the facility, the Division Chief Fire Marshal stated in his letter; “The facility has a history of fire and we fear that if left unaddressed, additional fires will occur.” In order to mitigate the fire risk, the Division Chief Fire Marshal, based on his expert knowledge, recommended changes to the substation. These recommended changes include:

- Replacement of the wooded structure supporting the high voltage equipment;
- Relocation of the substation out of the residential neighborhood.

Appendix B is a copy of the letter received from the Lake Tahoe Fire Department. The suggestions and recommendation made by the Lake Tahoe Fire Department will be accomplished with Liberty CalPeco proposed substation investments.

Figure 4-2. Brockway Substation Surrounding Area

As part of the Plan, Liberty CalPeco proposes to replace the obsolete substation equipment with modern equipment and relocate the substation to a location that increases the distance of electrical equipment to vegetation. In place of the wooden structure, a steel structure will be used as it has no fire risk. The obsolete OCBs will be replaced with high-speed vacuum breakers. The vacuum breakers have no oil that can catch fire. To mitigate wildfires, prudency would dictate relocating the substation further away from

heavy tree conditions. Liberty CalPeco has an alternate site for the substation away from heavy tree conditions. The utility proposes the use of an existing owned land parcel at Kings Beach.

Although these substations meet design standards referenced under GO 174, Rules for Electric Utility Substations, modernizing the substation and relocating to a reduced fire-risk parcel will significantly reduce the risk of fire in this relatively densely populated area while improving the safety, reliability, and efficiency of electrical service.

Stateline Substation

Similar to the Brockway substation, a portion of the existing Stateline Substation has a 60-year old Wooden Box Construction design along with obsolete OCBs, as well (See Figure 4-3). The wooden poles, wooden cross-arms and OCBs in the substation have the same concerns as identified above in the Brockway description.

Figure 4-3. Stateline Substation

As part of the Plan, Liberty CalPeco also proposes to replace the replace the obsolete old wood box construction with a modern design. In place of the wooden structure, a steel structure will be used as it poses no fire risk. The obsolete OCB will be replaced with high-speed vacuum breakers. The existing transformer will be replaced with a new unit.

This modern design will significantly reduce the risk of fire in this relatively densely populated area while improving the safety, reliability, and efficiency of electrical service.

Cost Estimates and Expense Actions:
Liberty CalPeco recently requested permission to replace the Brockway Substation under Advice Letter (AL) 64-E-A.[26] The request was primarily based on the increase load growth in the area. Resolution E-4929 denied the request indication the increase in load did not justify the substation cost.[27] Liberty CalPeco has not previously requested permission to replace the identified portion of the Stateline Substation.

The cost of the substation upgrades for wildfire mitigation planning is not addressed in Liberty CalPeco's 2019 GRC application, which is pending decision. Liberty CalPeco estimates the cost of replacing the Brockway Substation to be $13 million and to upgrade the Stateline Substation to be $3.5 million. Therefore, Liberty CalPeco requests by approval of this Wildfire Mitigation Plan, and that the Commission authorize Liberty CalPeco to establish a second MA to track and recover the expenses related to the substation replacement and upgrade project not included in approved capital investment projects.

4.4.5 Undergrounding

Liberty CalPeco has existing and planned underground wire infrastructure driven by Tariff Rule 20 (Rule 20)[28] . Three levels of project classification exist under Rule 20[29]. Of which, Rule 20A projects are based upon the criteria of public interest and scenic value. Projects funded by Rule 20A are recovered through electric retail rates.

Liberty CalPeco is currently working on two underground projects within the Lake Tahoe Basin that are associated with the Rule 20A Underground Overhead Lines Tariff. The first, In El Dorado County, undergrounds approximately 3,000 feet of overhead conductor at an estimated cost of $1,426,480. The second project is within Placer County and undergrounds approximately 1,760 feet of overhead conductor at an estimated cost of $5,963,740. Although these two underground projects are funded by Rule 20A Tariff, the work will mitigate wildfire events, thus helping meet the objectives of this Plan. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction*.

4.4.6 Tree Attachment Removal

Tree attachments are pieces of electrical infrastructure fastened to trees for infrastructural support. Since there is no approved standard for the attachments, the tree attachments introduce risk. Liberty CalPeco makes a consistent ongoing effort to eliminate these attachments to the trees. These pole attachment risks exist throughout the utility's distribution system.

Several challenges exist to expedite the elimination of tree attachments. The tree attachments took place over the many years with limited documentation on where these tree attachments have taken place.

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[26] Liberty CalPeco. February 23, 2018. "Advice Letter 64-E-A (U 933-E)." https://california.libertyutilities.com/uploads/LU%20AL%2064-E-A.pdf.

[27] Commission. August 23, 2018. "Resolution E-4929." http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M223/K876/223876696.PDF.

[28] Rule 20 was established on September 19, 1967 under D. 73078 where electric utilities were directed to report annually on amounts for undergrounding allocation.

[29] CPUC. "Undergrounding," http://www.cpuc.ca.gov/General.aspx?id=4403.

Many of these tree attachments are on private property which requires the coordination with the residence.

To determine the location of the tree attachment, Liberty leverages vegetation inspections, pole assessment inspection programs, and other capital improvement programs to locate these tree attachments. Once the tree attachment is located, Liberty CalPeco accurately maps each tree attachment location. Once the location is documented, Liberty CalPeco actively works with getting the necessary authorization from the residence or if necessary from local agencies to eliminate the tree attachment. In many cases the elimination of tree attachments requires the authorization to install one or more addition poles. While tree attachment removals are not specifically mandated, the elimination will further reduce wildfire risk in Liberty CalPeco's unique service territory. Liberty CalPeco categorizes this mitigation strategy under *(1) Design and Construction.*

Plan Execution
Liberty CalPeco commits to removing approximately 60 service tree attachments per year between North and South Lake Tahoe. Table 4-5 below outlines an approximate account of existing tree attachments in relation to the substations in this selected region.

Table 4-5. Service Tree Attachments Approximation

Substation	Number of Tree Attachments
Brockway	1041
Squaw Valley	289
Tahoe City	1950
Stateline	1071
Meyers	1914

Cost Estimates
Current estimates reflect approximately $7,000 per pole/tree for attachment removal to be captured and tracked through the FRMMA until the second WMP-related MA is established and authorized.

4.5 Vegetation Management Plan

Liberty CalPeco has a vegetation management plan in place, which is implemented by utility staff in conjunction with third-party contractors. Recently, Liberty CalPeco increased planned expenditures for the vegetation management plan from $2.5 million to approximately $4 million annually.[30]. This particularly will aid in the frequency of inspection as well as add value to existing clearing practices as tree mortality continues to rise in the area due to climate change.

The utility created the Vegetation Management Plan with wildfire prevention, improving system reliability, and scenic value in mind as well as meeting the requirements set forth in GO 95. The plan will be reviewed and updated the sooner of three-years, or as-needed due to changes in regulation or conditions. The plan includes four main components: routine vegetation maintenance, off-cycle tree work, quality control, and resource protection. Liberty CalPeco categorizes this mitigation strategy under *(2) Inspection & Maintenance*.

[30] Liberty CalPeco, "2019 GRC Application."

4.5.1 Plan Components

- **Routine Vegetation Maintenance:** This scope of work involves preventative inspection, and typical operations to trim and remove excess foliage that may come in contact with electrical assets along with meeting requirements on clearances. Liberty CalPeco mobilizes utility foresters, contracted or employed arborists, and tree-trimming contractors to meet these objectives.
- **Off-Cycle Tree Work:** This scope of work encompasses maintenance efforts beyond routine inspection practices outlined in rules established by GO 165. In these instances, the Vegetation Management Department has been made aware by line staff or notifications from external sources (referred to as Tree Tags) such as neighboring or local agencies, triggering remediation of the identified tree or vegetation source.
- **Quality Control:** This scope of work ensures the implementation and metric reporting of the Vegetation Management Plan through performed control audits of the contractor's work. Under this scope, a minimum of 15 percent random audits will be carried out throughout the year.
- **Resource Protection:** This scope of work determines the management of natural resources with objectives to protect the environment, support principles of ecological sustainable development, eradicate non-native species, control hazardous materials, and clear brush and fuel sources to bolster surrounding ecosystems.

Liberty CalPeco requires its contractor or utility employee to document and submit for review all work completed. Additionally, the clearance specifications must comply with the Commission's GO 95 Rule 35 Vegetation Management and Appendix E Guidelines to Rule 35 (trimming guidelines). For Liberty CalPeco in particular these specifications permit that the minimal allowable radial clearance of bare line conduction from vegetation within a high fire-threat district is 48 inches. Any vegetation under these conditions within the 48-inch clearance must be trimmed to at least 12-feet all year long pursuant to D. 17-12-024, which resulted in a revision to GO 95.[31] However, the contractor or Liberty CalPeco may determine that additional clearance may be prudent based on growth factors or weather conditions, in which case the trimming may be greater than 12-feet. In terms of other specifications, Liberty CalPeco will consider the removal of any fast-growing trees, rotten or diseased trees, and healthy trees hanging over or leaning towards the power lines.

To ensure quality, Liberty CalPeco will conduct frequent checks of the contractor's work through detailed, routine inspections and patrols of its overhead circuits. Any discrepancies discovered will be categorized by priority level (e.g. emergency, urgent, or routine) and subsequently corrected by the contractor. Liberty CalPeco meets with contractors and staff regularly to provide the status of work completed and upcoming work, such as tree removals, special support requests, corrective and emergent vegetation order status, and other items pertinent to progress of the work.

Liberty CalPeco recently submitted in its 2019 GRC application program enhancements to the vegetation management program resulting in the increase of annual expenditure, mentioned above. Recommendations currently proposed include an optimized vegetation maintenance cycle with determined schedules based on fire risk, vegetation regrowth information, and reliability data. In

[31] General Order 95 includes (a) a High Fire-Threat District, (b) maps of the High Fire-Threat District, and (c) new fire-safety regulations.

consultation with Western Environmental Consultants, Inc., four key system attributes were considered in determining these enhancements:[32]

1. Historically low tree-caused outages
2. Potential tree density reduction within the ROW
3. Potential fire risk from regrowth or hazardous trees
4. Potential for significant bark beetle eradication increasing fire risk from fallen trees

Continuing enhancements to the Vegetation Management Plan will be crucial as fire seasons become prolonged and intensified due to changing climate conditions paired with excess fuel sources. Some of the enhancements Liberty CalPeco is evaluating surround wildfire mitigation. For example, in addition to replacing fuses, changing hardware on subject poles in high threat fire districts may exempt these fixtures from various requirements. The remaining pole clearing work would be emphasized in these HFTD areas. Increasing the frequency of vegetation inspections and tree work cycles is also being considered.

4.5.2 Identifying At-Risk Vegetation

Invasive species removal, hazardous tree removal, and other at-risk fuel sources are identified through operations outlined in Vegetation Management Plan components. To the extent Liberty CalPeco is able to identify through contracted arborists or field work personnel, efforts are ongoing that address and/or eradicate flora that pose heightened risk to vegetation management success. Liberty CalPeco identifies hazardous trees for removal using determinations made by GO 95 Rule 35[33] and PRC 4293.[34]

In 2018, Liberty CalPeco implemented procedures to address the increase of tree deaths due to bark beetle infestations as a result of increased drought conditions. In 2019, the utility will submit an application to activate their first Tree Mortality Catastrophic Event MA (CEMA) to recover tracked costs incurred over the last year and anticipates the tree removal program continuing for several years. Liberty CalPeco's service territory contains two of the ten highest priority counties identified by California's Tree Mortality Task Force (El Dorado and Placer Counties).

Since 2015, these concerns have grown with the exponential increase of tree mortality rates. Liberty CalPeco has determined that efforts to curb this issue is no longer manageable with current staffing levels. In response, costs have been identified that exceed current budgets by $1 million annually. Upon authorization, these additional costs will be tracked and recovered through the Tree Mortality CEMA.

Environmental Risk Mitigation

[32] Liberty CalPeco, "2019 General Rate Case: Chapter 4: Vegetation Management Program." November 30, 2018, pg. 3.

[33] General Order 95 Rule 35 states:" When a supply or communication company has actual knowledge, obtained either through normal operating practices or notification to the company, that 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, said trees or portions thereof should be removed."

[34] Public Resources Code 4293 states: "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 trimmed so as to remove such hazard."

Liberty CalPeco ensures efforts to mitigate wildfire risk are not impacting its surrounding environment based upon best practices in tree, brush, and undergrowth removal. Along with meeting state regulations as well as the guidelines determined by the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), Liberty CalPeco does not engage in activities where significant lots of trees are removed, leading to issues such as erosion. The utility understands it's prudent to protect endangered or sensitive species, wherever necessary, and collaborates with local agencies to identify environmental risks that may pose a threat to the surrounding ecosystems. Principally, Liberty CalPeco considers forest health as the greatest concern when implementing its vegetation management plan.

Vegetation management activities also comply with the United States Migratory Bird Treaty Act of 1918 and the Endangered Species Act. Employees and vegetation management contractors are required to report conditions observed in the field prior to executing vegetation maintenance practices. In addition, reports of this nature will include the following:

- Evidence of nests greater than 12 inches diameter occurring on power company equipment (poles, cross arms, transformers)
- Evidence of nests occurring on or in trees requiring removal for compliance with PRC 4293 or GO 95, Rule 35
- Evidence of any and all dead or injured birds and their location if found in the vicinity of the facilities

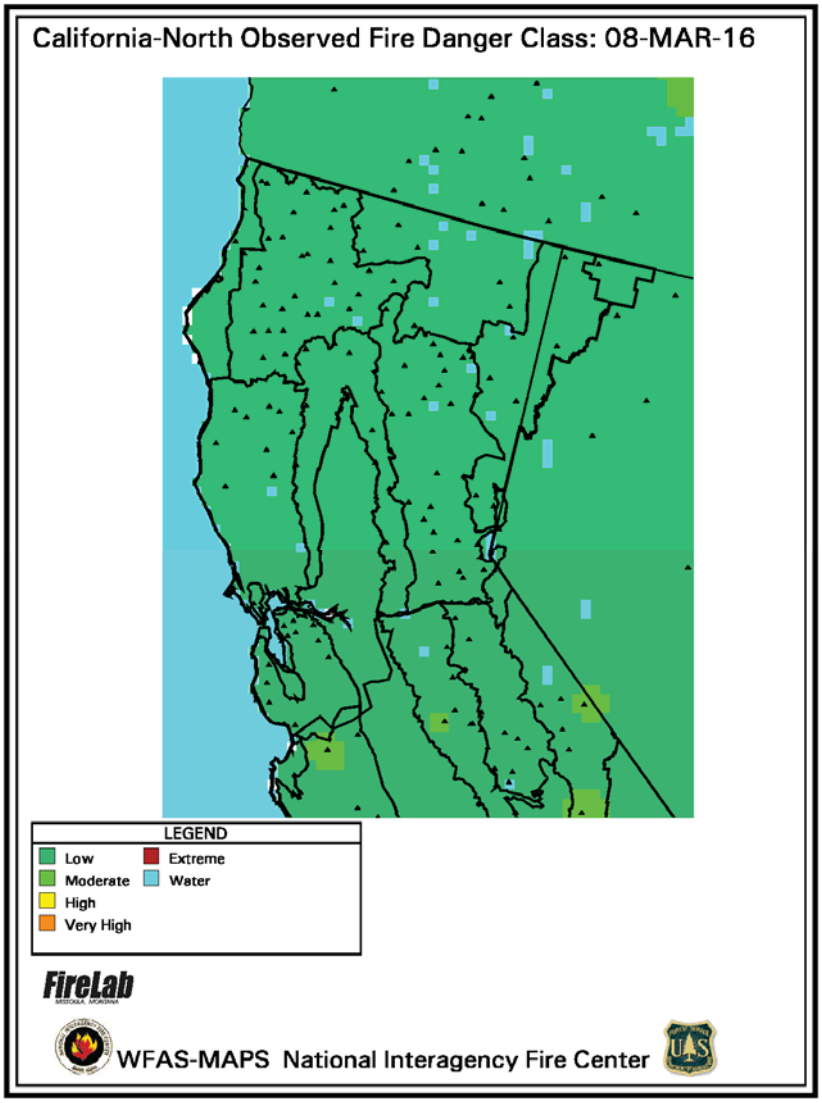
4.6 Protocols on Situational Awareness and Determination of Local Conditions

Liberty CalPeco monitors the USDA NFDRS regularly in conjunction with weather conditions along with other sets of information, such as wind speed in and around the service territory or dry lightning, which often is an ignition source for wildfires. This section of the Plan describes the meteorological services utilized to maintain situational awareness within the service territory.

4.6.1 Weather Monitoring

Figure 4-4 provides an example of real-time NFDRS rating system information monitored. This section details how Liberty CalPeco monitors conditions and how it will enhance this monitoring. Liberty CalPeco categorizes this mitigation strategy under *(4) Situational/Conditional Awareness*.

Figure 4-4. NFDRS California North Observed Fire Danger Class Example



Source: USFS Adjective Class Rating, 2016

The USFS maintains an “adjective class rating” of fire danger along with a color code system. For any condition other than “Low” the preparedness team will assemble. The vegetation management department monitors forecasts related to the likelihood that customers and utility assets could be impacted by wildfires. As conditions achieve the higher tiered levels, additional notifications, staging, and operating procedures are effectuated with each step.

Likewise, Liberty CalPeco maintains close contact with local weather station personnel and broadcast media. As conditions raise to Extreme, all personnel are on the highest level of alert. Operating personnel are mustered to serve communication notices under high-threat conditions. With experts collaborating and closely monitoring the operations of the electrical grid, Liberty CalPeco increases situational awareness allowing for coordinated planning, response, and communications. Vigilance and timely responses assure public safety and reduce risk events that could impact electrical facilities, customers, utility staff, and the environment.The adjective class rating provided by the USFS Wildland Fire Assessment System is located in Table 4-6 below.

Table 4-6. USFS Adjective Class Rating

Fire Danger Rating / Color Code	Description
Low (L) (Dark Green)	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M) (Light Green or Blue)	Fires can start from most accidental causes, but with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short-distance spotting may occur but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) (Yellow)	All fine dead fuels ignite readily, and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short-distance spotting is common. High-intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long-distance spotting and fire whirlwinds when they burn into heavier fuels.
Extreme (E) (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or in conifer stands may be unmanageable while the extreme burning condition lasts. Under these conditions the only effective and safe control action is on the flanks until the weather changes or the fuel supply lessens.

Liberty CalPeco monitors weather, vegetation, and other conditions and takes additional monitoring and communication activies when conditions are conducive to causing wildfires. The adjective class rating tabled above is one of multiple sources of information. During the higher levels of potential wildfire threat, Liberty CalPeco prioritizes efforts to staff additional personnel and take enhanced monitoring actions to increase situational awareness and be prepared to take additional preventative and mitigating actions.

4.6.2 Weather Station Install Project

Since weather stations have been identified as a risk-mitigation strategy, Liberty CalPeco plans to install 13 weather stations starting 2019, with 10 already purchased. The locations were determined while working with the NWS, in which areas were prioritized based existing weather station locations and associated data currently available. The locations identified considered several factors. First, Liberty CalPeco looked at existing weather stations that are publicly available through the Mesowest Network.

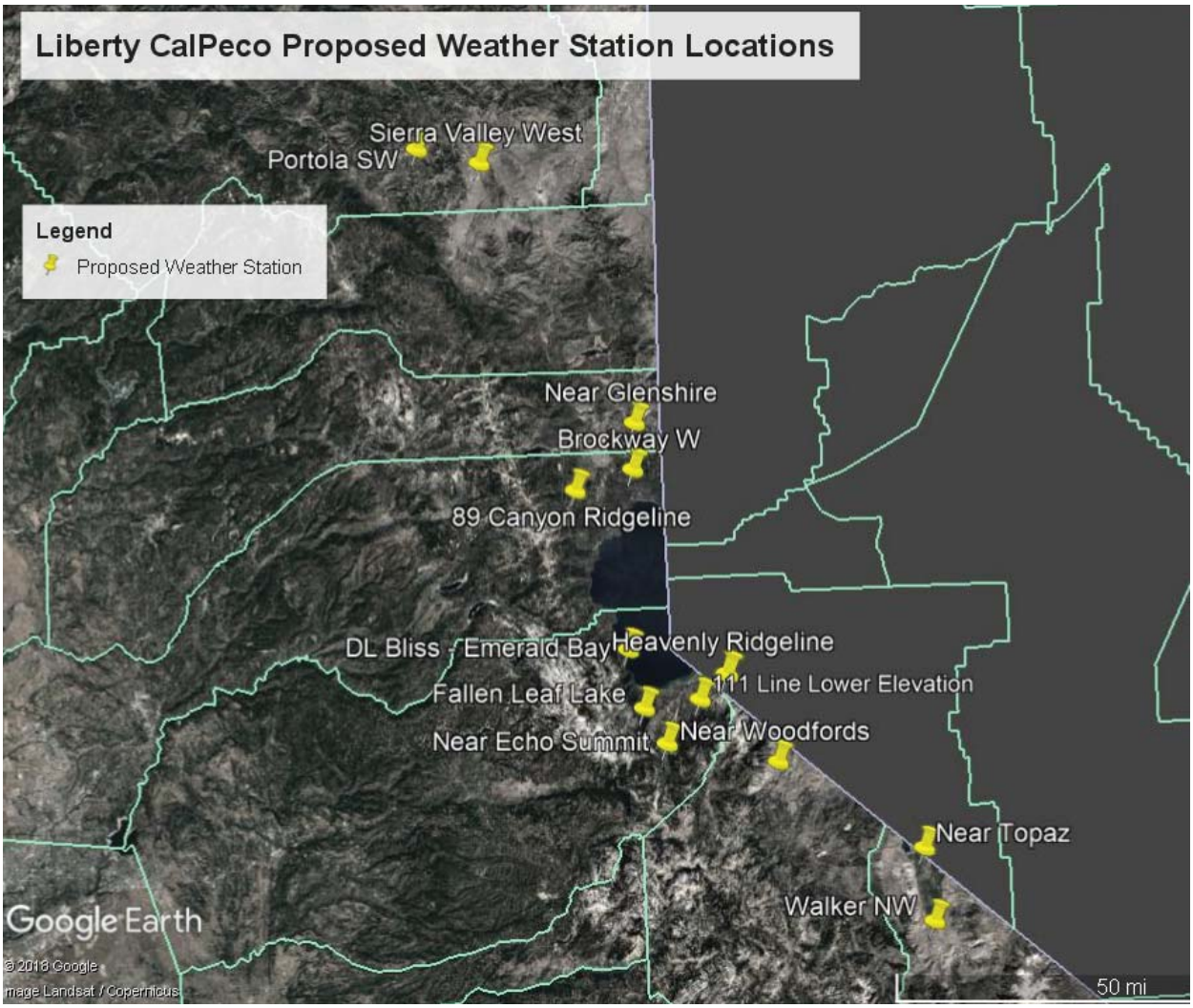
Next, gaps were identified within the service territory where a weather station would be beneficial. Finally, potential wildfire impact and prevailing weather trends finalized the determinations.

The vendor consulted was Western Weather, similarly used by the larger IOUs. This will assist Liberty CalPeco in addressing weather monitoring gaps within its service territory. Sensors embedded in the station's operational control will communicate with Liberty CalPeco through wireless information delivery to assist in data gathering to monitor conditions that may lead to an emergency response. Liberty CalPeco categorizes this mitigation strategy under *(4) Situational/Conditional Awareness*.

Cost Estimates

Install of the 13 weather stations is planned for the next two years. The costs for all 13 approximate $148,720 with 10 already been approved. The costs will be tracked through the FRMMA until authorization of the second MA. Figure 4-5 illustrates the proposed site options. Liberty CalPeco will evaluate the effectiveness and benefits of the weather stations and will determine for the next planned filing with the Commission if additional weather stations should be installed.

Figure 4-5. Proposed Weather Station Locations



4.7 Public Safety Power Shut-off Protocols

PSPS refers to the proactive de-energization of the grid in high-fire danger conditions. This is a preventative measure to help keep customers, employees, and the public safe. As explained in Section 3, a combination of ignition sources, high wind, low humidity, and available dry fuel from nearby materials, such as vegetation, can raise the likelihood of a wildfire. Liberty CalPeco proposed that through the PSPS that electrical infrastructure does not become a source of ignition when conditions are conducive to wildfires. While Liberty CalPeco will attempt to control the management of fuel sources through its vegetation management program, it will lower the likelihood that its electric system could become a source of ignition by implementing PSPS in certain high-risk fire danger conditions, as described in this section.

Liberty CalPeco faces substantial wildfire risk due to its climatic, weather, and topographical conditions, as described in Section 3, and therefore, monitors information such as the USFS NFDRS and wind speeds regularly. These two components help to indicate when the service territory is under extreme fire danger conditions. If the NFDRS is "red" or "orange," signaling high fire danger, Liberty CalPeco will begin taking precautionary actions, including intensive monitoring of forecasted wind speeds, local and surrounding weather monitoring, and local forecasts. Liberty CalPeco will act accordingly, based on information gained from these and other sources. Liberty CalPeco's wildfire mitigation procedures include two aspects: field operations and communications. The first includes the planned actions of service crews and other Liberty CalPeco staff. The second course of action is related to communication including stakeholders, media, and government agencies. Liberty CalPeco maintains detailed handbooks related to these activities and monitors practices of other California utilities. Liberty CalPeco categorizes this mitigation strategy under *(5) Response and Recovery*. Table 4-7 below outlines these procedures.

Table 4-7. PSPS Procedures

Fire Conditions	Planned Actions	Planned Notifications
Forecasted Extreme Fire Weather Conditions	• Monitor existing wind speed in "at risk" locations • Determine if conditions warrant specific actions • Communicate with Customer Service to ensure accurate communications with stakeholders	• Notify local government and agencies35 • Post notification of potential power outages on website and social media as well as live outage map36 • Issue press release to local media
Imminent Extreme Fire Weather Conditions (Wind Speeds measured at 50 mph for > 3 seconds)	• Dispatch crews to monitor field conditions for dangerous conditions throughout service area and "at risk" locations • When conditions are appropriate, De-energize power lines that may pose a hazard	• Continue to coordinate with local government and agencies • Update notifications on website and social media to warn of potential for power shutoff • Issue updated press release to local media

[35] For example, http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M151/K569/151569654.PDF communication requirements for large IOUs.

[36] Liberty CalPeco, "Outage Map," https://california.libertyutilities.com/portola/residential/emergencies/electrical/outages-map.html.

Validated Extreme Fire Weather Conditions (Wind Speeds measured at 55 mph or greater for > 3 seconds)	• Monitor local wind gusts and de-energize circuits when conditions are appropriate • Patrol service area and "at risk" areas to monitor actual conditions • De-energize additional power lines as needed	• Continue to coordinate with local government and agencies • Update notifications on website and social media • Send notification via Interactive Voice Response (IVR) • Issue updated press release to local media • Notify Commission and Warning Center at the Office of Emergency Services
Weather Subsides to Safe Levels	• Validate that extreme fire weather conditions have subsided to safe levels37 • During fire season, conduct field inspections and patrols of de-energized facilities • Restore power once equipment assessment is completed	• Continue to coordinate with local government and agencies • Update notifications on website, social media and IVR • Issue updated press release to local media

The decision to de-energize electric facilities for public safety is complex and dependent on many factors including and not limited to fuel moisture; aerial and ground firefighting capabilities; active fires that indicate fire conditions; situational awareness provided by fire agencies, the NWS and the USFS; and local meteorological conditions of humidity and winds.[38]

Under extreme fire danger, when de-energization is deemed necessary, Liberty CalPeco crews will shut off at-risk circuits, lines, and other infrastructure either manually or using remote controlled SCADA devices. Liberty CalPeco will continue to work closely with local stakeholders that own or operate critical facilities, including hospitals and water system operations, and coordinate with first responders, such as police and fire departments, to ensure critical facilities remain operational and/or have back-up plans when PSPS is in effect. Additionally, Liberty CalPeco will update these plans in accordance with changes to the Commission proceeding 18-12-005, OIR to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions.

4.7.1 Re-Energization Strategy

Once Liberty CalPeco has confirmed that extreme conditions have subsided to the point that an energized grid does not pose a threat, the utility will begin re-energizing its de-energized power lines. Liberty CalPeco categorizes this mitigation strategy under *(5) Response and Recovery*.

Once a decision to re-energize has been made Liberty CalPeco will:

[37]Safe levels are defined as wind speeds in the affected area calming below 50 mph for a minimum period of 20 minutes. Crews may extend the calm period beyond 20 minutes, if they assess that further wind gusts greater than 50 mph are likely.

[38] Commission Safety and Enforcement Division, Resolution ESRB-8, July 12, 2018.

- Patrol lines prior to re-energization.
- Inform all media and partners of the successful conclusion of the de-energization and provide an update when power has been restored.
- Inform all customers who were impacted by the De-Energization event that power has been restored via Everbridge (email, voice, and/or text).
- Post the time of power restoration(s) on website and social media at the conclusion of the de-energization event.
- Follow up with media and partners to ensure successful communication and to determine if additional steps or efforts would be beneficial in the future.
- Provide a report to the Director of the Safety and Enforcement Division provided no later than 10 business days after the conclusion of the shut-off event that includes (i) an explanation of the decision to shut off power; (ii) all factors considered in the decision to shut off power, including wind speed, temperature, humidity, and moisture in the vicinity of the de-energized circuits; (iii) the time, place, and duration of the shut-off event; (iv) the number of affected customers, broken down by residential, medical baseline, commercial/industrial, and other; (v) any wind-related damage to overhead power-line facilities in the areas where power is shut off; (vi) a description of the notice to customers and any other mitigation provided; and (vii) any other matters the utility believes are relevant to the Commission's assessment of the reasonableness of Liberty CalPeco's decision to shut off power.

The process used to re-energize lines will be updated to conform with changes mandated in the Commission proceeding 18-12-005, OIR to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions.

4.8 Emerging Technologies and Alternative Strategies

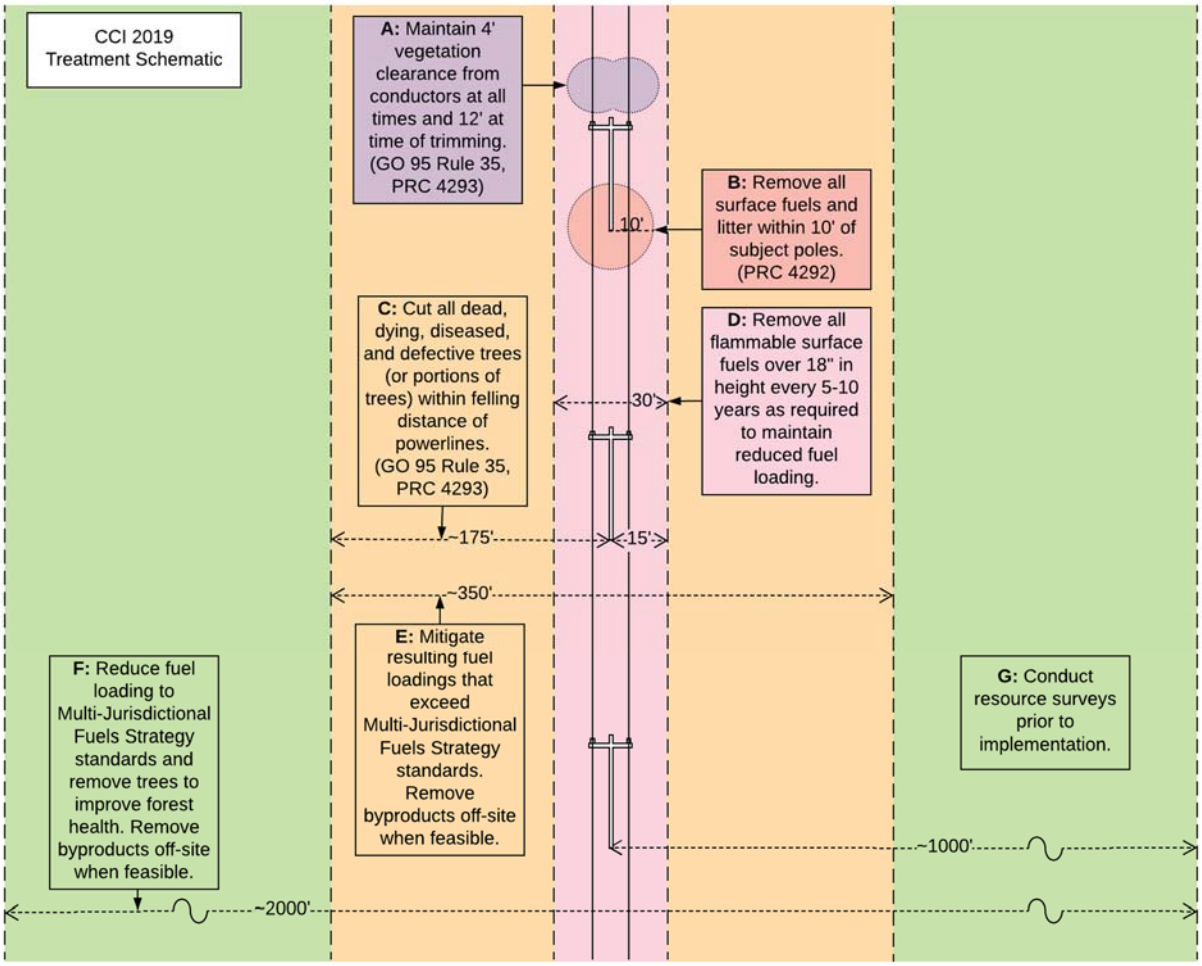
Liberty CalPeco is continuing the evaluation of new technologies and approaches to determine if they can could reduce the probability of an ignition event and/or reduce public exposure to a hazardous condition by providing better situational awareness, faster isolation, or other means to reduce wildfires. As described in Section 4.3, Liberty CalPeco is evaluating LIDAR and Infrared Tools to possibly improve the Inspection process.

4.8.1 Forest Resiliency Corridor Development

Liberty CalPeco's partner at the California Tahoe Conservancy is preparing to apply for a grant for the Forest Resiliency Corridor (FRC), which addresses approximately 2,300 acres of land managed by participating agencies within 2019. This grant represents a collaborative effort between federal, state and local agencies to conduct comprehensive multi-jurisdictional forest resiliency and fuels reduction treatments that aim to 1) create resilience corridors, 2) aid in resource surveys in support of future efforts, and 3) assist in conducting forest management research along with investigating innovative technology opportunities. The draft version of the Grant Scope of Work entails the creation of resilient corridors within the right-of-way (ROW) around powerlines. The work will leverage all ignition prevention practices already required by regulations but with significant additional fuel reduction (vegetation clearances), pest management, and biomass utilization activities. Liberty CalPeco categorizes this mitigation strategy under *(3) Operational Practices*.

It the Grant is approved and the CPUC approves this investment, Liberty CalPeco plans to complete the work depicted in Figure 4-6 by March 30, 2022.

Figure 4-6. FRC Project Draft Schematic



Items A, B, and C are designed with the primary intention to reduce ignition risk originating from powerlines pursuant to current regulation. Item A maintains four feet of vegetation clearance from powerlines at all times with consideration of appropriate vegetation growth between removal treatments. Item B illustrates efforts to remove all combustible material within ten feet of subject poles, which are more likely to ignite fires due to either the location or associated equipment and infrastructure. Item C aligns with regulations that require cutting, trimming, or removal of trees that may fail and ultimately make contact with lines. Item D illustrates removal of flammable surface that exist over 18 inches in height within 15 feet of either side of the pole's center line. Plans to complete item D align with execution goals of items A, B, and C. However, item D is not required by current regulation, but will aid in enhancing the efforts of the Wildfire Mitigation Plan and are essential to the success of the Forest Resiliency Corridor.

Fuels and timber generated from the execution of Items A, B, and C are left on site for decomposition. To address accumulation of fuels that pose risk within 175 feet of powerlines, Item E was planned with the intention to reduce additional forest fuels and utilize biomass to mitigate fuel loading resulting from implementation of the previous plan items. Item F captures additional fuels reduction, pest management, prescribed fires, and continued biomass utilization activities that are within approximately 1,000 feet of

powerlines. Lastly, Item G highlights the requirement to conduct resource surveys throughout the corridors prior to forest management projects, which could impact the timeline of efforts when certifying NEPA and CEQA documents. All items listed will provide additional benefits in reducing fuels and improving forest resiliency. Support for this work is echoed by the USFS and Tahoe Fire and Fuels Team.

Funding and Cost Estimate
Pending grant approval and allocation determination, Liberty CalPeco plans to invest an additional $661,030, beyond GRC approved activities, to support of the overall $10 million Grant benefit to the forest surrounding powerlines. Thousands of acres still remain within the resilience corridor areas, and Liberty CalPeco anticipates that agencies will likely seek funding in the future as successes projects are recorded.

These items (A, B, C, and D) listed in Figure 4-6 are at the sole financial responsibility of Liberty CalPeco and will be included as a match within this grant. Estimates for Items A, B, and C approximate $1,636,000 with costs tracked through the Vegetation Management Balancing Account (VMBA), authorized through the 2016 GRC application. Item D costs are also at the sole responsibility of Liberty CalPeco with costs estimated at $400,000. These costs will be tracked through the proposed FRMMA. Costs associated with Item E will be shared by Liberty CalPeco and funding from the grant, estimated at $261,030 (also matching funds) and tracked through the FRMMA. Matching funds approximate $2,297,030. Item F will be funded solely by the grant, if awarded, and Item G will be recovered through rates.

FRC Compliance
Current regulations addressed through this effort include Governor Gavin Newson's Executive Order N-05-19, which emphasized the need for agencies within the state to take immediate action to protect communities and forests from wildfire threat.[39] Commission's GO 95 Rule 35, and California Public Resources Code Sections 4292 and 4293, which require vegetation clearance around powerlines and certain poles to reduce the risk of wildfire ignitions. Participation in the Forest Resiliency efforts will include coordination in federal and non-federal project implementation, surveys of at-risk vegetation, ignition hazard reduction and ROW fuels reduction.

4.9 Post Incident Recovery, Restoration, and Remediation

Liberty CalPeco has an Emergency Management Plan (See Appendix C) in place to recovery from major emergencies including Wildfires. The Company's Emergency Response Plan (ERP) uses a tiered level approach to implement an Incident Command System (ICS). The ICS is an organized approach to effectively control and manage emergency operations depending on the level of the emergency.

Primary Objectives of ERP

During emergency situations and disasters:
1. Protect the life, safety and health of employees and the public.
2. Protect the property and assets of the Company and Public.
3. Protect the environment.
4. Provide for the expeditious restoration of service and return to normal operations.
5. Provide prepared and trained employees as well as pre-developed plans and information to manage events.

[39] Executive Department State of California. "Executive Order N-05-19." January 8, 2019. https://www.gov.ca.gov/wp-content/uploads/2019/01/1.8.19-EO-N-05-19.pdf.

Regional Command Centers at Lake Tahoe

The initial, or lower level emergencies will use the individual department or to initially address emergency situations using the incident command system. These centers are responsible for command and control of all phases of the emergency in their region. If additional support is required, it will be supplemented with support from the Emergency Management Team. The ICS may be activated to assist in resource and information coordination during an emergency or may be activated for large scale or complex emergencies. In a major emergency, the overall management will be under the responsibility of the Incident Commander. The ICS function will be to coordinate and direct all response and mitigation efforts.

Emergency Management Team

This team is activated with the onset of a major emergency event, in response to an event. This team initially provides support to the regional activities and may consist of any or all of the following positions: the Policy Director, Public Information Officer, Safety & Security Officer, Emergency Response Liaison, and one or more of the affected operating or administrative managers. This is the team that will in part staff the Incident Commander Center if a major event occurs. The additional members of the ICS/Emergency Management Team who also may be activated for any event to either support the regional activities or staff the ICS if activated include: Operations Leader, Logistics Leader, Planning Leader, Financial/Regulatory Leader and Services Leader. An organization chart showing the make-up of the fully staffed Emergency Management Team.

Incident Command System Organization

This center can be activated to provide additional resources support, in a major emergency and coordination, centralized information coordination and policy direction as necessary to support the activation of a single, or multiple Regional Command Centers. EOCs will also be activated by the ICS/Emergency Management Team to coordinate emergency information and support utility operations, emergencies, or any other company emergency situations. Either of Liberty CalPeco offices may be designated as the Incident Command Post during emergencies depending upon accessibility, where the ICS can be most effective and the specific type of emergency. The ICS is activated to provide resource support and information to the regional offices while each regional operation maintains the responsibility for field operations related to assessment, recovery, and restoration.

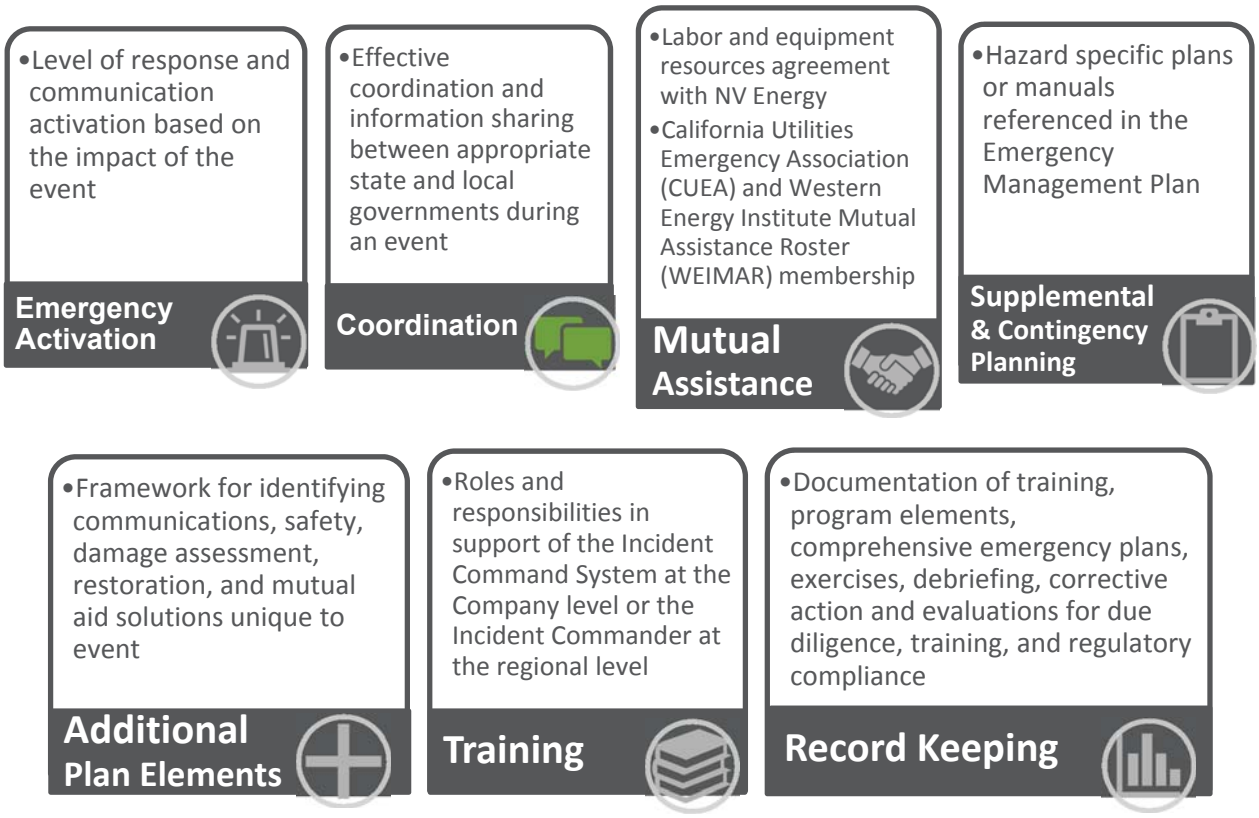
5. EMERGENCY PREPAREDNESS AND RESPONSE

As referenced in Section 4.9, Liberty CalPeco has created a Corporate Emergency Management Plan to manage the consequences resulting from unexpected loss of infrastructure and equipment. The plan provides an emergency response framework for active response and recovery preparedness, resource planning, and practice training. Liberty CalPeco categorizes this mitigation strategy under *(5) Response and Recovery*. This section details these plans, including compliance, and roles and responsibilities for executing the plan.

5.1 Plan Overview

Liberty CalPeco understands the importance of proactive planning and coordinating closely with local governments, agencies, and customers. The Corporate Emergency Management Plan reflects those philosophies. Specifically, the plan addresses the following: emergency activation, coordination, mutual assistance, supplemental and contingency planning, additional plan elements, training, and record keeping. Figure 5-1 below describes these components with further detail on the more comprehensive components below.

Figure 5-1. Emergency Preparedness and Response Components



Due to Liberty CalPeco's unique service territory, there are several key stakeholders that will be involved in emergency preparedness and response. These stakeholders include local governments and agencies as well as location-specific organizations, including critical facilities, resorts, and business groups. With

this understanding, Liberty CalPeco has outlined all key stakeholders. Table 5-1 provides the stakeholder list. Liberty CalPeco will review the list annually and update it, as needed.

Table 5-1. Liberty CalPeco Emergency Preparedness and Response Stakeholder List

Stakeholder Group	Description
Customers	• Any person, organization, or critical facility receiving electricity from Liberty CalPeco
Local Government / Critical Agencies	• Primary Care Hospitals • Public Utility Districts (Truckee Donner, South Tahoe) • Counties (Alpine, El Dorado, Mono, Nevada, Placer, Plumas, Sierra) • Cities/Towns (Portola, South Lake Tahoe, Truckee) • Telecommunications • Water/Water Treatment • Public Safety Dispatch Centers • Law enforcement/holding facilities • Local tribal governmental agencies • Fire operations facilities • Transportation equipment and facilities • Local Emergency Planning Committees • CAL FIRE • California Department of Transportation • USFS • Sierra Front Wildfire Cooperators • CPUC SED
Mutual Assistance Agreements	• NV Energy • Western Energy Institute Mutual Assistance Roster • California Utilities Emergency Association
Commission	• Utility Safety Branch • Energy Branch • Energy Division • Office of Emergency Services Warning Center • Others, as requested

Source: Liberty CalPeco Emergency Management Plan

Emergency Activation

Emergency and disaster response are both characterized into one of five levels of activation based on the risk of impacts as a result of the event. This determination will then direct immediate engagements and activate prescribed protocols associated with that incident impact level. Table 5-2 below describes the action and communication plans associated with each activation level starting with Level 5, small impact events:

Table 5-2. Liberty CalPeco Activation Levels for Emergency/Disaster Response

Level		Description	Action
5	Small Impact Event (Localized Response Condition)	Minor disruption of operating systems, business systems, or electric service that can be managed with existing resources at the local or department level.	Normal activity, daily internal crew assignments
4	Moderate Impact Event (Heightened Alert)	An event that maximizes the resources and management capability of the local region and may require additional resources and support.	Possible crew transfer between areas; utility Contractor crews (overhead line and tree) limited to normal daily complement.
3	Serious Impact Event (Enhanced Support)	A disaster or major emergency that may affect several areas of our electric system and may require the services of all operations personnel.	Regional or System ICS may be initiated and Regional EOC's may be opened. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.
2	Major Impact Event (Comprehensive Support)	A disaster or major emergency that affects several areas of our electric system and requires the services of all operations personnel.	Regional or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.
1	Catastrophic Impact Event (Emergency Support)	A disaster or major emergency requiring a corporate response to minimize corporate risk. This level requires policy guidance, strategic planning, and coordination of internal and external resources, internal communication and coordination, dissemination of public information.	Regional and/or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.

Source: Liberty CalPeco Emergency Management Plan

Supplemental & Contingency Planning

Liberty CalPeco acknowledges in their Emergency Management Plan that no single plan can foresee all the needs or contain all the information necessary to respond to each event. As a result, the utility references a number of supplemental plans and manuals that address specific hazards in the Emergency Management Plan. Their supplemental plans include Fire Prevention Plans, Outage Communication Plans, Mutual Assistance Agreements, Operations Procedures Manuals, and Spill Response Plans.

Additional Plan Elements

The Emergency Plan provides a framework for identifying unique solutions for events in the areas described in Table 5-3.

Table 5-3. Liberty CalPeco Additional Emergency Plan Elements

Area	Actions
Communications	• Prior to an emergency, media contact information is updated annually. Information will be disseminated to the public through the media advising customer what to do to prepare for extended outages and what emergency supplies may be necessary to keep on hand. • During an emergency, the media is contacted with detailed outage information. Local governmental agencies, municipalities and media outlets within the service territory are also contacted. • Liberty CalPeco will initiate its outbound call program, Everbridge, to deliver critical information. The primary point of customer contact is through telephone information via live customer contact or the Interactive Voice Response and messaging system as well as email or Short Message Service (SMS).
Governmental & Regulatory Communications	• During an emergency, the utility will provide communications to the highest level of city or county Emergency Operations Center activated • The Commission requires reporting for Safety and for substantial outages
Safety	• Prior to an emergency, the utility provides on-going public electric safety courses and information so that the Public will be prepared when an emergency event occurs. Electric Trade Personnel, including Ground person, helpers, apprentices, journeyman lineman, trouble men, inspectors etc., are provided the highest level of safety and skills training to perform in both daily and emergency situations. • During an emergency, the utility will respond to Immediate Life Safety Issues as the top priority.
Damage Assessment	• During an emergency, company crews, linemen, troublemen, electric inspectors, utility designers and/or engineers will be first called for damage assessment. • All damage will be recorded by the teams on circuit maps using standardized symbols. • To the extent practicable, downed or damaged facilities shall be isolated, secured and warnings applied utilizing cones, warning tape or other barriers or warnings.
Restoration	• This element identifies general prioritization guidelines for restorations as restoration depends upon a number of factors including safety, accessibility, availability of repair parts, and availability of personnel.
Mutual Aid	• The type, size and duration of an emergency event will determine, in varying degrees, the amount of resources required to respond to the event. • Resource requests may include trade and non-trade personnel to assist in safety stand-by, damage assessment, planning or liaison activities, or materials and equipment necessary to facilitate restoration of utilities.

Source: Liberty CalPeco Emergency Management Plan

Training

Liberty CalPeco employees participate in Emergency Management Plan training annually. They are trained on the roles and responsibilities of each functional area in support of the ICS at the Company level or the Incident Commander at the regional level. In addition, emergency response exercises are designed so employees can gain practice in the use of the plan and as a test of the plan's effectiveness. The utility participates in regional exercises to train employees and exercise the Emergency Management Plan.

Record Keeping
All electronic communication pertaining to training, program elements, comprehensive emergency plans, exercises, debriefing, corrective action and evaluations will be submitted to the local internal emergency mailbox and Corporate Headquarters. These records will be examined during debriefing and corrective action exercises.

5.1.1 Plan Compliance

The emergency preparedness and response plans described in this section comply with Public Utilities Code Section 768.6 and 8386[40,41]. Specifically, the plan complies with the following mandates:

- Sharing of plan with relevant cities and counties to provide input and feedback.
- Plans to update and improve the plan at least every two years.
- Accounting of responsibilities of persons responsible for executing the plan.
- Appropriate and feasible procedures for notifying customers who may be impacted.
- Plans to prepare for and restore service, including workforce mobilization.
- Plans for community outreach and public awareness before, during, and after a wildfire.
- Emergency communications that includes plans to translate messages into the top three languages in CA based on census data.
- Protocols for compliance with Commission reporting guidelines.

As the Commission develops new mandates, Liberty CalPeco will update its plan accordingly.

5.2 Plan Organizational Structure and Functions

The plan will be implemented by key utility staff, working closely with the stakeholders listed in Section 5.1. The staff involved include the Incident Commander, Public Information Officer, Safety and Security Officer, Government Liaison, Emergency Response Liaison, Operations Leader, Logistics Leader, Planning Leader, Financial/Regulatory Leader, and Services Leader. All implementation staff are highly qualified and will ensure prompt communications and restoration of service. These members will be critical to maintaining customer and system safety. Table 5-4 below outlines each staff member's role in implementation of the plan and their relevant qualifications.

[40] FindLaw, California Code – PUC 768.6, https://codes.findlaw.com/ca/public-utilities-code/puc-sect-768-6.html.

[41] FindLaw, California Code – PUC 8386, https://codes.findlaw.com/ca/public-utilities-code/puc-sect-8386.html.

Table 5-4. Liberty CalPeco Plan Implementation Roles and Responsibilities

Staff Member	Role
Incident Commander	• Normally the President of the Company, they are the "individual in charge" establishing a clear chain of command, control of information and emergency coordination.
Public Information Officer	• Works with the Incident Commander or as support to the Regional Incident Commanders to develop communication strategies and content of all information to be disseminated pertaining to the emergency
Safety and Security Officer	• Provides review of emergency operation activities to ensure work is being performed safely, ensures public safety around facilities that may be energized and assists in prioritization of safety related matters. • Provides for the protection and security of company employees and assets, mitigates damage to facilities, and ensure effective coordination with law enforcement agencies.
Government Liaison	• Communicates with key local, state or federal government authorities and officials regarding emergency activities and information
Emergency Response Liaison	• Provides a link between the utility and external agencies to keep them informed regarding any impacts the event may have on the utility's ability to provide or restore service.
Operations Leader	• Responsible for the management of all tactical operations directly applicable to the emergency response. • Provides direction to the frontline field personnel in damage assessment and priorities and requests resources necessary to restore service.
Logistics Leader	• Responsible for providing the equipment, supplies and personnel that the operations needs to respond to the emergency. • May engage contract or mutual aid services in support of the emergency. • Schedules manpower or resources to cover additional emergency operations periods.
Planning Leader	• Provides analysis of emergency information and situations and develops plans to be used during the response and recovery operations to fully return electric service as quickly as possible for the least cost.
Financial/Regulatory Leader	• Responsible for ensuring that funds are available as need for the emergency. • Provides tracking of costs of the response and recovery and ensuring that records are maintained throughout the event and sufficient to apply for regulatory relief or outside funding from resources like FEMA
Services Leader	• Provides any support services need to manage the emergency which may include human resources or administrative support.

Source: Liberty CalPeco Emergency Management Plan

5.3 Customer Support in Emergencies

Response to a catastrophic event is critical to the customer. In addition to emergency personnel, Liberty CalPeco is aware that the utility has a crucial role in providing immediate support activities resulting from local and state-level emergencies. The protocols listed below reflect disaster customer protection measures during and after a wildfire incident. These considerations arise from the scope determined in Resolutions M-4833 and M-4835,[42] which guide utilities to implement procedures to protect customers in the event of pronounced states of emergency. Liberty CalPeco is weighing decisions surrounding these activities as decisions are finalized for R. 18-03-011. Further, the utility seeks to meet compliance and accommodate necessary response actions. Internal discussions will continue to investigate billing options as well as develop a vital customer support plan specific to these types of devastating events. Liberty CalPeco categorizes this mitigation strategy under *(5) Response and Recovery*.

The following protocols intend to provide assistance to customers affected by catastrophic events such as recent wildfires in 2017 and 2018. The Commission has established requirements that guide electric utilities to develop response efforts to wildfire-impacted communities. The items below detail these proposed procedures as part of the Plan drawing from existing emergency and communications plans as well as the proposed Wildfire Mitigation Plan Communications Protocol outlined in Section 4.9.1.

- **Outage Reporting:** Administrative staff members will work to create an internal code within the Outage Management System to identify outages related to wildfires.
- **Support for Low Income Customers:** Low income, or CARE, customers will be offered Special Payment Arrangements resulting from a fire-related outage, if necessary.
- **Billing Adjustments:** Billing will be suspended until the customer receives power again.
- **Deposit Waivers:** Liberty CalPeco will consider, on a case-by-case basis, waiving deposits for customers that have to rebuild due to a wildfire.
- **Extended Payment Plans**: In the event the customer has suffered a tremendous loss, (property or home), due to wildfires, special consideration would be granted on a case-by-case basis for payment extension.
- **Suspension of Disconnection and Nonpayment Fees:** Collection activities (after three months) because of nonpayment would be suspended for wildfire-impacted neighborhoods.
- **Repair Processing and Timing:** Timing for repair procedures will be determined based upon the severity of wildfire impact. During emergencies, Liberty CalPeco will expedite repair processing as incidents are recorded. Mutual aid programs will be engaged, if necessary, in conjunction with the Corporate Emergency Response plan. The utility will follow up with electrical contractors to ensure efforts for remediation are executed.
- **Access to Utility Representatives:** If the utility offices are not impacted by fire, operations will resume, and CSRs and Managers on-Duty would be available to assist customer concerns. However, if offices are affected by fire, nearby offices as well as Corporate support will be available to customers. Resulting from fire, Liberty CalPeco proposes to address concerns and common questions through an “open house” with the public.

[42] Quasi-legislative R. 18-03-011 OIR Regarding Emergency Disaster Relief Program to Support California Residents was issued April 2, 2018 which built upon Resolutions M-4833 and M-4835 adopted previously and remains ongoing while decisions for M-4833 and M-4835 have been initiated for interim protection.

6. PERFORMANCE METRICS AND MONITORING

In addition to a robust mitigation strategy, Liberty CalPeco developed performance metrics to monitor their efforts over time. The goal of these metrics is to provide a data-driven evaluation of performance to help Liberty CalPeco determine the effectiveness of the Plan and identify areas of improvement. The performance plan is comprised of two components: Roles and responsibilities and Metrics reporting. Liberty CalPeco categorizes this mitigation strategy under *(3) Operational Practices*.

6.1 Roles and Responsibilities

The overall roles and responsibilities for the performance metrics align closely to the departments that oversee the implementation process of each of the strategies outlined in the broader plan. The VP of Operations, or their designee, will oversee implementation, ensuring staff follow procedures and protocols. They are also responsible for managing the execution of the performance monitoring. This includes providing guidance to staff and leading the development of reports. The staff responsible for each metric area will aggregate relevant metrics at the direction of the VP of Operations or their designee. For example, Customer Service Representative teams may assume responsibility for tracking customer-related metrics.

6.2 Metrics Reporting

As described above, metrics will play a critical role in overall Plan continuity. Liberty CalPeco intends for the metrics to inform them about the progress of wildfire mitigation and determine potential gaps that may arise over time as conditions change. That said, the metrics proposed in this Plan reflect current plans mentioned previously. Upon Plan approval, Liberty CalPeco will create targets for each of the metrics based on industry standards and benchmarks. The utility will also plan to revisit the metrics annually and update them as needed. Table 6-1 details Liberty CalPeco's proposed metrics.

Table 6-1. Proposed Wildfire Prevention Plan Metrics

	Metric	Rationale	Risk Reduction Assumption
Fire Incidents	Number of utility-caused fires	Determination of Plan's overall effectiveness	Fire frequency will reduce by maintaining a hardened system and commitment to these operational practices
Infrastructure	Number of Wildfire Risk Events (e.g. number of bare line contact with vegetation)	Assess if plan has reduced risk events	Accounting for incidents will, overtime, show risk reduction in fire ignition.
	Number of Fuse Replaced Annually	Determine if plan is on schedule	An increase in the number of current limiting fuses will mitigation wildfires
	Length of Bare Wire Covered	Determine if plan is on schedule	An increase in the number of miles of covered conductors will mitigation wildfires

	Number of Recloser Replacements or Upgraded Annually	Determine if plan is on schedule	Reclosers with sensitive setting and high-speed clearing will mitigate wildfires
	Substation Replacement and Upgrade -Narrative on project progress	Assess reliability and safety improvements	Elimination of wooden box structures and oil circuit breakers will mitigate risk
	Weather Station Installation	Determine if deployment plan is on schedule	An increase in the number of weather stations will mitigation wildfires
Operations	Average Time for Clearance Permissions from Local Agencies	Assess mitigation plan constraints and timelines	A reduction in the amount of time to clear vegetation will reduce risk
	Vegetation Management Investment and inspections	Assess value after increasing budget in inspection procedures; clearances	Determine if an increase or decrease in vegetation follow-up results from increase budget.
Customer Service	Number of Customer Service Calls about identified and confirmed at-risk Vegetation	Assess if plan has reduced customer concerns and risk events	Track vegetation service calls on customer responsibility and Liberty vegetation.
PSPS Narrative	Number of PSPS Events	Monitor the number of PSPS events over time as an indicator of changing climatic and weather patterns	Determine the effective of procedures for PSPS events.

Liberty CalPeco staff will track metrics throughout the year or as material occurrences arise (e.g. outage report, off-cycle tree clearing notification, weather conditions) and produce internal monthly updates. Liberty CalPeco will prepare formal reports, aggregating the monthly metrics, for review by the leadership at Liberty CalPeco on a semi-annual schedule. The reports will evaluate whether the metrics are below, meeting, or exceeding their targets. The reports will also include brief updates and correction plans for metrics below target. Liberty CalPeco leadership will provide feedback and additional guidance as necessary.

Metric monitoring and reporting will ensure aspects of the Plan will be carried out and accounted for in implementation. These reports will guide decision-making in modifying or enhancing the Plan for future compliance of PUC Section 8386 and more importantly, strengthen Liberty CalPeco's efforts to mitigate potential wildfires in the face of California's new normal.

6.3 Application of Prior Metrics to Previous Plan Performance

This report is the first annual Wildfire Mitigation Plan submitted to the Commission for approval. Therefore, past plan metrics are not available at this time to evaluate past plan performance. However, in developing this Plan, consideration of wildfire risk events, their drivers, and feasible project implementation informed the metrics outlined above.

6.4 Wildfire Mitigation Plan Monitoring and Auditing

Liberty CalPeco will monitor efforts of the Plan quarterly and report on its effectiveness on an annual basis. Quarterly reports of the Plan's current progress and risk reduction impact will be developed and circulated to appropriate utility staff to engender collaborative discussion to make changes to approved strategies. The VP of Operations, or their designee, will update leadership with recommendations or proposed action in enhancing the Plan's objectives overtime.

Liberty CalPeco shall engage one of the Commission-approved intendent evaluators to assess compliance with its plan. It is expected that the evaluator will consult with and operate under the guidance and direction of the Safety and Enforcement Division, issue a report annually, and determine if the electric utility has failed to provide funding or investment into any activities approved within its Plan.

6.4.1 Correcting Plan Deficiencies

Achieving a robust, all-encompassing Plan to mitigate wildfire risk from the utility is the primary objective of this document. Staff responsible for assigned mitigation areas have the role of vetting current procedures and recommending changes or enhancements to build upon weak strategies in the Plan. Either due to unforeseen circumstances, regulatory changes, emerging technologies, or other rationales, deficiencies within the Plan will be sought out and reported to the Commission in the form of an updated Plan on an annual basis. The VP of Operations, or their designee, will be responsible for spearheading discussions on correcting deficiencies when updating the Wildfire Mitigation Plan for its annual filing.

6.4.2 Effectiveness of Equipment and Line Inspections

Liberty CalPeco's compliance with Commission regulations ensures that facilities are inspected and repaired in accordance with GO 165 program standards, referenced in Section 4.3. Any issues found impacting safety and reliability are addressed as outlined in that program. In addition to this maintenance program, Liberty CalPeco is constantly evaluating its facilities while performing other activities such as outage patrols, new business planning, engineering studies, pole replacements, and related field work. Monitoring the effectiveness of inspection practices will occur through ongoing tracking and annually review of findings resulting from internal process.

The VP of Operations, or their designee, will review concerns found during routine field work and equipment and line inspections. Liberty CalPeco will use this information as a method to assess the effectiveness of inspection procedures. The review process will take place annually where inspection records will be reviewed, deficiencies will be identified, and corrective action will be determined. An internal report will be provided to the utility's leadership in deliberation of future strategies. Related strategies that mitigate wildfire risk will then be identified and proposed within the next iteration of the Plan.

Aggregating this data will guide future decision-making on the direction of wildfire mitigation strategy with the intention that incidents will become less frequent or hazardous system-wide.

7. POTENTIAL COST IMPLICATIONS

The approval of the Wildfire Mitigation Plan does not guarantee cost recovery through electric utility ratemaking practices; however, the Commission asks to include cost estimates and actuals associated with mitigation strategies within this Plan that might have a potential cost impact going forward. Liberty CalPeco will track incurred costs and expenses related to the execution of objectives through an activated second MA following this application's decision. Until then, costs will be tracked through the current FRMMA. The Commission will then weigh considerations of cost implications as a result of each proposed and pre-approved mitigation strategy, program, or protocol. Those items will cost implications from the implementation of this Plan are identified and detailed in Appendix A.

This section presents an aggregation of cost estimates determined by utility staff over the period of the Plan development. These figures represent conservative, industry-standard vendor pricing with consideration of additional expenditures of updated and modern investments as well as availability of material for procurement. The compiled cost estimates are high-level figures. (See Table 7-1 below.)

Table 7-1. Estimated Plan Cost Implications

Mitigation item	Cost Estimated	Notes	Cost Recovery
Automatic Reclosers	$7,350,000	Total	GRC
Covered Conductors	$614,000	Per Mile	GRC / FRMMA[43]
Pole Loading and Replacement	$12,000 - $15,000	Per Pole	GRC / FRMMA
Fuse Replacement	$721,550	Annual	FRMMA
Substation Design Hardening	$16,500,000	Total	GRC / FRMMA
Undergrounding	$7,290,220	Total	GRC
Tree Attachment Removal	$420,000	Annual	FRMMA
Vegetation Management Plan	$4,000,000	Annual	GRC
Forest Resiliency Corridor	$661,000	Contribution above share	FRMMA
Weather Station Installations	$148,720	Total	FRMMA

[4343] The FRMMA will track ongoing costs as well as approved Plan strategies until a second MA is established and approved.

APPENDIX A. WILDFIRE MITIGATION STRATEGIES & PROGRAMS

§8386 (c) (3)(4)(8)(9): Wildfire Mitigation Strategies and Programs										
Program/Strategy (§ 8386(c)(3))	Asset Addressed (Ex: line, poles, etc. (§ 8386(c)(3))	Annual Cost (Capital v. Expense) (Scoping Memo at 4: "In evaluating the proposed plans the Commission may weigh 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 (§ 8386(j))	Compliance Requirement? (Provide Code/GO Reference) If for Only Part of Budget, Identify the $ for that Part and Explain Part that is Not Compliance	Identify any Aspects of Plan/Strategy and Associated Funding That is or Will Be Addressed in Another Case (Identify the Case (§ 8386(j))	Identify Memorandum Accounts Where Costs of Program/Strategy Are Being Tracked and Explain How Double Tracking is Prevented (§ 8386(j))	Previously Included in RAMP? (Provide Reference) (§ 8386 (c)(11))	Evaluation Metric(s) (§ 8386 (c)(4))	Assumptions Underlying Metric (§ 8386 (c)(4))	Categories: (1) Design and Construction, (2) Inspection and Maintenance, (3) Operational Practices, (4) Situational/Conditional Awareness, and/or (5) Response and Recovery
OPERATIONAL PRACTICES										
Automatic Reclosers & Fast-Curve Settings	Automatic Circuit Reclosers and Controls including SCADA	$735,000 (total project) // Capital	Yes	NA	2019 GRC application pending approval	NA	NA	deployment schedule is on track for completion	• Remote monitoring of system assets promotes faster outage response • Supervisory controls will provide the settings necessary to reduce electrical ignition, while also helping to mitigate power outages	(3) Operational Practice
Elevated Weather Events Operations (e.g. during Red Flag Warnings)	All Circuit Recloser Settings; Trip Savers; At-Risk Circuits	Standard Business Operations // Expense	Yes	D.12-01-032 pursuant to R. 08-11-005; PU Code Sections 451 and 399.2(a)	NA	NA	NA	Number of Red Flag Warnings during fire season	Fire frequency will reduce by maintaining a hardened system and commitment to these operational practices	(3) Operational Practice
Wildfire Infrastructure Protection Teams	All System Assets	Standard Business Operations // Expense	Yes	PU Code Sections 451 and 399.2(a); GO 166	Pending 2019 GRC application	NA	NA	Coordination during risk events captured and tracked	Rationale: Ensure staff is prepared to mobilize in high-risk and emergency situations	(3) Operational Practice
PLANS FOR INSPECTION										
On-Ground Routine Inspections	All Equipment and Infrastrucutre Assets	Standard Business Operations // Expense	Yes	GO 165	Pending 2019 GRC application	NA	NA	NA	NA	(2) Inspection and Maintenance
Equipment Asset Inspections	Equipment Assets	Standard Business Operations // Expense	Yes	GO 165	Pending 2019 GRC application	NA	NA	Planned inspections are carried out	Rationale: Regular patrols that identify aging infrastructure or equipment that pose a fire risk	(2) Inspection and Maintenance
Vegetation Risk Inspections	All Assets near Vegetation	Approx. $4 million annually (as part of the Vegetation Maintenance Expense)	Yes	GO 95, Rule 35 and Public Resources Code (PRC) 4293; D.17-12-024	Pending 2019 GRC application	Vegetation Management Balancing Account	NA	NA	NA	(2) Inspection and Maintenance

§8386 (c) (3)(4)(8)(9): Wildfire Mitigation Strategies and Programs										
Program/Strategy (§ 8386(c)(3))	Asset Addressed (Ex: line, poles, etc. (§ 8386(c)(3))	Annual Cost (Capital v. Expense) (Scoping Memo at 4: "In evaluating the proposed plans the Commission may weigh 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 (§ 8386(j))	Compliance Requirement? (Provide Code/GO Reference) If for Only Part of Budget, Identify the $ for that Part and Explain Part that is Not Compliance	Identify any Aspects of Plan/Strategy and Associated Funding That is or Will Be Addressed in Another Case (Identify the Case (§ 8386(j))	Identify Memorandum Accounts Where Costs of Program/Strategy Are Being Tracked and Explain How Double Tracking is Prevented (§ 8386(j))	Previously Included in RAMP? (Provide Reference) (§ 8386 (c)(11))	Evaluation Metric(s) (§ 8386 (c)(4))	Assumptions Underlying Metric (§ 8386 (c)(4))	Categories: (1) Design and Construction, (2) Inspection and Maintenance, (3) Operational Practices, (4) Situational/Conditional Awareness, and/or (5) Response and Recovery
SYSTEM HARDENING										
Pole Loading & Replacement	All Distribution Poles	$16,765 is spent on software license costs; 2 hours per pole evaluation at $50 per hour; $12,000 - $15,000 per pole // Capital	Yes	GO 95 Rule 44	NA	Proposed Wildfire Mitigation Memorandum Account	NA	Number of pole replacements	Rationale: Determine if structural integrity of the pole is within calculated threshold	(1) Design and Construction
Covered Conductors	Prioritized Lines; Tahoe City Line 7300; Topaz Line 1261	Between $614,000 and $1,228,000 per year: -Overhead construction costs + additional costs via (1-2 miles) covered wire are $614,000 per mile // Capital	Yes	NA	NA	Proposed Wildfire Mitigation Memorandum Account	NA	Determine if plan is on schedule	Rationale: Mitigate contact of ignition source (heat) by covering the wire.	(1) Design and Construction
Fusing	Replace Conventional Fuses	$721, 550 // Capital	No	NA	NA	Proposed Wildfire Mitigation Memorandum Account	NA	Determine if plan is on schedule	Rationale: Mitigate downed wires and reduce energy at potential fault locations	(1) Design and Construction
Substation Design Hardening	Brockway Substation; Stateline Substation	$16,500,000 for total proposed costs // Capital	No	GO 174	Brockway presented in 2019 GRC application	Proposed Wildfire Mitigation Memorandum Account	NA	Assess reliability and safety improvements	Rationale: Modernize aging capital infrastructure to mitigate fire risk	(1) Design and Construction
Tree Attachment Removal	All Tree Attachments	$7,000 per pole/tree for attachment removal; yielding $420,000 annually // Expense	No	NA	NA	Proposed Wildfire Mitigation Memorandum Account	NA	Number of service tree attachments removed per year	• Pole attachment risks exist throughout the utility's distribution system	(1) Design and Construction

§8386 (c) (3)(4)(8)(9): Wildfire Mitigation Strategies and Programs										
Program/Strategy (§ 8386(c)(3))	**Asset Addressed (Ex: line, poles, etc. (§ 8386(c)(3))**	**Annual Cost (Capital v. Expense) (Scoping Memo at 4: "In evaluating the proposed plans the Commission may weigh 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 (§ 8386(j))**	**Compliance Requirement? (Provide Code/GO Reference) If for Only Part of Budget, Identify the $ for that Part and Explain Part that is Not Compliance**	**Identify any Aspects of Plan/Strategy and Associated Funding That is or Will Be Addressed in Another Case (Identify the Case (§ 8386(j))**	**Identify Memorandum Accounts Where Costs of Program/Strategy Are Being Tracked and Explain How Double Tracking is Prevented (§ 8386(j))**	**Previously Included in RAMP? (Provide Reference) (§ 8386 (c)(11))**	**Evaluation Metric(s) (§ 8386 (c)(4))**	**Assumptions Underlying Metric (§ 8386 (c)(4))**	**Categories: (1) Design and Construction, (2) Inspection and Maintenance, (3) Operational Practices, (4) Situational/Conditional Awareness, and/or (5) Response and Recovery**
VEGETATION MANAGEMENT										
Routine Vegetation Maintenance	All Assets near Vegetation	Approx. $4 million annually // Expense	Yes	GO 95 Rule 35; Public Resources Code Sections 4292 & 4293	Pending 2019 GRC application	Vegetation Management Balancing Account	NA	Assess value after increasing budget in inspection procedures; clearances	Determine if an increase or decrease in vegetation follow-up results from increase budget.	(2) Inspection and Maintenance
Tree Mortality Removal Project	All Assets near Affected Vegetation	>$1 million annually // Expense	No	GO 95 Rule 35; Public Resources Code Section 4293	E-3238	Proposed Tree Mortality CEMA	NA	NA	NA	(2) Inspection and Maintenance
Forest Resiliency Corridor Development	All Assets within the ROW Corridor	Proposed Liberty CalPeco required contribution for grant: $661,030 // Expense	No	GO 95 Rule 35; Public Resources Code Sections 4292 & 4293; Executive Order N-05-19	Pending 2019 GRC application	Proposed Wildfire Mitigation Memorandum Account	NA	NA	NA	(2) Inspection and Maintenance
SITUATIONAL AWARENESS										
Weather Stations	13 Weather Station being installed	$75,000 averaged annually; total approx. cost for all 13 stations: $148,720 // Capital	No	NA	NA	Proposed Wildfire Mitigation Memorandum Account	NA	Number of weather stations installed	Rationale: Improves forecasting and de-energization and restoration plans	(4) Situational / Conditional Awareness
Weather Monitoring	All Assets	Standard Business Operations // Expense	Yes	D.12-01-032 pursuant to R. 08-11-005; ESRB-8	NA	Proposed Wildfire Mitigation Memorandum Account	NA	NA	NA	(4) Situational / Conditional Awareness
RESPONSE & RECOVERY										
PSPS Events	All Assets	Standard Business Operations // Expense	Yes	NA	R. 18-12-005	NA	NA	Monitor the number of PSPS events over time as an indicator of changing climatic and weather patterns	Determine the effective of procedures for PSPS events.	(5) Response and Recovery
Post Incident Recovery, Resotration & Remediation	All Assets	Standard Business Operations // Expense	Yes	Resolutions M-4833 & M-4835	R. 18-03-011 & R. 18-12-005	NA	NA	NA	NA	(5) Response and Recovery

APPENDIX B. LAKE TAHOE FIRE LETTER OF SUPPORT

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Liberty Utilities (California)
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Mr. Johnson,

The purpose of this letter is to express concerns over the condition of Liberty Utilities' Brockway substation located at the corner of Deer and Cutthroat in Kings Beach. After looking at the substation on 1-22-2019, the Fire District has great concern over the potential for fire from that facility and the threat to the local community.

The various wood beams supporting the high voltage electrical equipment are split, twisted and warped. It is questionable if that structure is still safe and it appears its condition is no longer functioning as it was engineered at the time it was built. If this structure was to fail it is likely to cause a fire, and being located in the middle of a residential neighborhood, it will threaten the homes and lives of the residents in that area.

That facility has a history of fire and we fear that if left unaddressed, additional fires will occur. I am sure you are aware of the recent catastrophic fires in California caused by the failure of electrical equipment. We are now aware of the hazard your substation is posing to the residential area of Kings Beach and are concerned it has the potential to create a devastating fire given the weather conditions at the time of a failure.

It is the desire and recommendation of the North Tahoe Fire Protection District to relocate the Brockway substation out of the residential area. It is our understanding that Liberty Utilities has alternate locations available that are better suited for that use and not in close proximity to residential homes. Given the location and degrading condition of the current facility, the availability of other sites, and the threat it poses to the surrounding area, the Fire District believes it is a timely solution to an identified problem.

Thank you for your consideration,

Division Chief Todd Conradson, Fire Marshal
North Tahoe Fire Protection District

APPENDIX C. EMERGENCY MANAGEMENT PLAN

This Emergency Management Plan's formatting has been modified for inclusion within Appendix C.

Liberty Utilities®		933 Eloise Avenue South Lake Tahoe, California 96150 530-541-1949		
GENERAL PROCEDURE		Proc. #:	**8800-100-300-007**	
Description:	Emergency Management Plan	Revision #:	4	Pages: 18

1.0 Purpose

The purpose of Liberty Utilities Emergency Management Plan (Plan) is to enhance the Company's capability to respond to and recover from emergencies of all levels including natural disasters. The plan provides the framework and organizational structure to manage the consequences resulting from unexpected loss of infrastructure and equipment through active response and recovery preparedness, resource planning and practice training exercises. The plan is updated as necessary during the continuous cycle of planning, response, recovery and mitigation.

2.0 Objectives

During emergency situations and disasters to:

1. Protect the life, safety and health of employees and the public.
2. Protect the property and assets of the Company and Public.
3. Protect the environment.
4. Provide for the expeditious restoration of service and return to normal operations.
5. Provide prepared and trained employees as well as pre-developed plans and information to manage events.

3.0 Emergency Response Organizational Structure & Functions

Emergency Preparedness efforts are aimed at providing the organizational structure, resources, and disaster response training necessary for consolidated and effective Company-wide response. The utility industry is designed to deal with normal to moderate emergencies as part of normal operations. On the occasions that the size and scope of an emergency reaches beyond the resource and response capabilities of a specific department or area, additional emergency response efforts can be activated under this plan to any level necessary to provide the appropriate resource, information, communication and coordination.

The model for the Company's Emergency Response Organization uses a tiered level approach to implement an Incident Command System (ICS). The ICS is an organized approach to effectively control and manage emergency operations should emergency levels reach level 3, 2 or 1, as described under section 4.2. The initial tiers, level 5 or level 4, use the individual department or **Regional Command Centers** to initially address emergency situations using the incident command system.

These centers are responsible for command and control of all phases of the emergency in their region and can be supplemented with support from the **Emergency Management Team** members without the official activation of the **Incident Command System (ICS)/Incident Command Post.** Support may include any or all of the following: Executive policy support, Security, Safety, Communications, Operations, Finance, Logistics, Services and/or Liaisons. Additionally, with or without multiple emergency command centers activated, an **ICS** may be activated at either the North or South location to assist in resource and information coordination during an emergency or may be activated for large scale or complex emergencies. The Incident Command Post operates under the ICS for emergency management and when the ICS is activated, the overall management will be under the responsibility of the **Incident Commander**. The ICS function will be to coordinate and direct all response and mitigation efforts inside the perimeter.

1. **Description/Responsibilities of Regions** -The two regions operate independent control areas. The North Lake Region is predominantly sourced from the 120kV system out of Truckee and includes the Squaw Valley, Northstar, Portola and Loyalton areas. The South Lake Region is sourced mainly from the 120kV system out of the Carson Valley and includes the Markleeville, Coleville and Walker areas. Interconnection between the two regions is minimal; due to the independent configuration of the regions, they operate individually during most emergencies. NV-Energy supplies all energy to the Company and all transmission level control is administered through NV Energy Electric System Control Center. Each Regional Manager is responsible for establishing a working relationship with local police, fire, City and County Emergency Planners and for participating with Local Emergency Planning Committees.

2. **Regional Incident Command Centers (ICC)** - These centers represent the first level, Level 5 or Level 4, of command and control of an emergency from the individual region. Most all emergencies are managed at these levels. All field operations and activities are controlled from these centers and field command and control is not transferred to the company ICS if it is activated in support of an emergency event. The South Lake Tahoe Office and the North Lake Tahoe office each function independently for the management of emergencies contained within their areas and is equipped with information and communications equipment for such purpose. Regional Centers coordinate resource support between one another when feasible. Essential Functions Include:
    a. Primary emergency response with assigned emergency personnel.
    b. Designation of a **Regional Incident Commander - the person**
    c. Distribution System Control, switching and operations directives
    d. Damage Assessment, life safety issues assessment, and establishment of response priorities.

e. Management of emergency response resources (materials, equipment, manpower). f. Prioritization of Restorations
g. Resource Mobilization, Allocation and Acquisition
h. Communication & Coordination with Public Safety, Local Governments, Media & Customers
i. Regulatory Reporting as may be necessary

3. **Emergency Management Team-** This team is activated with the onset of an emergency event (Level 3, 2 or 1), in anticipation of an emergency event, or in response to an event with corporate risk, with or without operational damages or deficiencies. This team initially provides support to the regional activities and may consist of any or all of the following positions: the Policy Director, Public Information Officer, Safety & Security Officer, Emergency Response Liaison, and one or more of the affected operating or administrative managers. This is the team that will in part staff the Incident Commander Center if the Level 3, 2 or 1 has been attained. The additional members of the ICS/Emergency Management Team who also may be activated for any event to either support the regional activities or staff the ICS if activated include: Operations Leader, Logistics Leader, Planning Leader, Financial/Regulatory Leader and Services Leader. An organization chart showing the make-up of the fully staffed Emergency Management Team and full-function ICS is attached to the Plan and EOC Organization Attachment.

a. *Incident Commander* - This is normally the President of the Company; however, this responsibility may be delegated to a manager depending upon the emergency at hand. There will be a single Incident Commander appointed for each working shift who will serve as the overall Incident Commander when the ICS is activated. The Incident Commander will be the "individual in charge" establishing a clear chain of command, control of information and emergency coordination. When the Incident Commander is called upon to assist the Regional Incident Commander, but the ICS has not yet been activated, this individual will serve as a policy resource to the Regional Incident Commander.

i. Provides policy guidance and approval for strategies, actions and activities.
ii. Communicates directly with the Corporate Headquarters
iii. Responsible authority for strategy and content of Public Information and Company Communications

b. *Public Information Officer (PIO)* - Works in conjunction with the Incident Commander or as support to the Regional Incident Commanders to develop communication strategies and content of all information to be disseminated pertaining to the emergency event(s).

i. Strategy and content of press conferences, news releases, and other media activities.
ii. PIO to act as liaison with national and local media and governmental operations centers.
iii. Employee/Company communications: status, instructions, and updates as necessary.

c. *Safety & Security Officer* - Provides review of emergency operation activities to ensure work is being performed safely, ensures public safety around facilities that may be energized and assists in prioritization of safety related matters. Provides for the protection and security of company employees and assets, mitigates damage to facilities, and ensure effective coordination with law enforcement agencies.

i. Provides security and control of unauthorized, unplanned activities or security violations.
ii. Provides command and control for evacuation of facilities. iii. Provides direct coordination with federal, state or local law enforcement agencies. iv. Provides for employee and public safety

d. *Government Liaison* - Communicates with key local, state or federal government authorities and officials regarding emergency activities and information.

i. Provide information to officials regarding the status of the company's ability to provide/restore service.
ii. Provide periodic updates based on information gathered at the Regional Control Center and /or Emergency Operations Center.
iii. Relay messages regarding governmental representatives' concerns, offers of assistance etc.

e. *Emergency Response Liaison* - Provides a link between the utility and external agencies to keep them informed regarding any impacts the event may have on the utility's ability to provide/restore service.

i. Communicate with local, state, and federal emergency managers and emergency operation centers to keep them appraised of the status of the event(s) and assist in coordination of emergency response efforts as necessary.
ii. Assist in coordination and communication with other utilities, local or regional government entities, and emergency response agencies as necessary.
iii. Provide guidance and strategy in company emergency response plans, centers and procedures.

f. *Operations Leader* - Responsible for the management of all tactical operations directly applicable to the emergency response. Provides direction to the frontline field personnel in damage assessment and priorities and requests resources necessary to restore service. Areas of responsibility include distribution, transmission, emergency generation and customer service.

g. *Logistics Leader* - Responsible for providing the equipment, supplies and personnel that the operations needs to respond to the emergency. May engage contract or mutual aid services in support of the emergency. Schedules manpower or resources to cover additional emergency operations periods.

h. *Planning Leader* - Provides analysis of emergency information and situations and develops plans to be used during the response and recovery operations to fully return electric service as quickly as possible for the least cost. Facilitates implementation of action plans.

i. *Financial/Regulatory Leader* - Responsible for ensuring that funds are available as need for the emergency. Provides tracking of costs of the response and recovery and ensuring that records are maintained throughout the event and sufficient to apply for regulatory relief or outside funding from resources like FEMA. This leader is also responsible for risk management and claims.

j. *Services Leader* - This area provides any support services need to manage the emergency situation which may include human resources or administrative support.

4. **Incident Command System(ICS) Organization -** This center can be activated to provide additional resources support, levels 3, 2 or 1, and coordination, centralized information coordination and policy direction as necessary to support the activation of a single, or multiple Regional Command Centers ; the activation is typical when the emergency or combination of events becomes significant in nature, poses significant Company risk or requires response, support or coordination for or from multiple areas. EOCs can also be activated by the ICS/Emergency Management Team to coordinate emergency information and support utility operations, emergencies, or any other company emergency situations. Either office may be designated as the Incident Command Post during emergencies depending upon accessibility, where the ICS can be most effective and the specific type of emergency. The ICS is activated to provide resource support and information to the regional offices while each regional operation maintains the responsibility for field operations related to assessment, recovery and restoration. The Emergency Management Team/ICS is supported by the EOCs and is activated to the level of support required for the specific emergency; this team may provide the following functions:

   a. Policy guidance, strategic planning and decision making.
   b. Operations/ Resource Support and coordination from activated Regional Command Centers.
   c. Logistics and resource procurement, support, scheduling and allocation.
   d. Planning, engineering, and technical support as needed for situation assessment and recovery.
   e. Finance/Procurement of materials, resources and supplies
   f. Media & Employee Communications/ Public Information dissemination, both internally and externally
   g. Liaison to Governmental EOC and information exchange and coordination with state and local emergency agencies and governments.
   h. Safety & Security for employees, work sites, and the general public.
   i. Administrative Support and documentation of events, decision making, resource allocation etc.
   j. Regulatory & Legal assessments in support of strategic decisions.

4.0 Emergency Activation:

1. **Activation Levels -** There are five levels of activation for emergency / disaster response. See Table 2 for additional details on the Operating Conditions and Typical Storm Levels related to each Activation Level.

   a. **Activation Level 5 – Small Impact Event (Localized Response Condition)**:The minor disruption of operating systems, business systems, or electric service that can be managed with existing resources at the local or department level. Often an On Call Supervisor or a regional manager serves as the Regional Incident Commander throughout the emergency; other assistance is activated as the Regional Incident Commander deems necessary. Outage is typically restored within 1 – 12 hours.
   Action: Normal activity, daily internal crew assignments.
   Communication Characteristics:
      - Crisis attracts little of no attention
      - Public and/or media are virtually unaware
      - Email notification to 911@algonquinpower.com

   b. **Activation Level 4 – Moderate Impact Event (Heightened Alert)**: The occurrence of an event that maximizes the resources and management capability of the local region and may require additional resources and support. Often an On Call Supervisor or a regional manager serves as the Regional Incident Commander throughout the emergency; other assistance is activated as the Regional Incident Commander deems necessary. Outage is typically restored within 12 – 24 hours.
   Action: Normal activity, daily internal crew assignments. Possible crew transfer between areas. Utility Contractor crews (overhead line and tree) limited to normal daily complement, as needed.
   Communication Characteristics:
      - Crisis situation may/may not have occurred; the situation is attracting slow but steady media coverage
      - The public at large is aware of the situation/event but is attracting very little attention
      - Email notification to 911@algonquinpower.com

   c. **Activation Level 3 – Serious Impact Event (Enhanced Support)**: The occurrence of a disaster or major emergency that may affect several areas of our electric system and may require the services of all operations personnel. The On Call Supervisor may serve as the initial Regional Incident Commander but will relinquish that position to the ICS Incident Commander. Outage is typically longer than 24 hours.
   Action: Regional or System ICS may be initiated and Regional EOC's may be opened. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.
   Communication Characteristics:
      - Crisis causes growing attention from local and regional media
      - Affected and potentially affected parties threaten to talk to the media
      - Email notification to 911@algonquinpower.com, with return 10 min confirmation

d. **Activation Level 2 – Major Impact Event (Comprehensive Support)**: The occurrence of a disaster or major emergency that affects several areas of our electric system and requires the services of all operations personnel. The On Call Supervisor may serve as the initial Regional Incident Leader but will relinquish that position to the regional EOC Incident Commander and then the ICS Incident Commander. Liberty Utilities may provide resources to other agency EOC's as needed for more efficient and effective communications on the event and/or electrical system issues. Outage is typically longer than 24 hours.

Action: Regional or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.

Communication Characteristics:

- Media are reaching out to employees and non-communication staff for information about the crisis
- Broadcast and print media are on-site for live coverage
- In addition to the media, stakeholders and community partners are present at site
- Email notification to 911@algonquinpower.com, with phone call per protocol to confirm receipt

e. **Activation Level 1 – Catastrophic Impact Event (Emergency Support)**: The occurrence of a disaster or major emergency of requiring a corporate response to minimize corporate risk. This level requires policy guidance, strategic planning, and coordination of internal and external resources, internal communication and coordination, dissemination of public information. The field supervisor may serve as the Regional initial Incident Leader but will relinquish that position to the ICS Incident Commander. Liberty Utilities may provide resources to other agency EOC's as needed for more efficient and effective communications on the event and/or electrical system issues. Outage will typically affect more than 50% of our customer base and be longer than 72 hours.

Action: Regional and/or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.

Communication Characteristics:

- Public health & safety is concerned
- National or international media are covering as major news
- Major government attention is present
- There is real or potential environmental harm
- One or more groups are expressing anger or outrage
- Email notification to 911@algonquinpower.com, with phone call per protocol to confirm receipt

2. **Activation Authorities:**

a. Emergency Management Team: The authority to activate the entire Emergency Management Team rests with the President or the designated alternate. Authority may be delegated to responsible Managers of Operations and Administrative Services to activate an Emergency Management Team as initial response to emergency situations. The President will designate where the Emergency Management Team will locate on initial activation. Administrative Support will assist with notification of the Emergency Management Team.
b. Incident Command Center (ICC): The activation of the full Incident Command Center, the location of the ICC as well as the levels and functions to be utilized are within the authority of the President or designee. In the absence of the President, the Emergency Management team will be the decision making body related to activation of the ICS and the level of activation.
c. Regional Incident Command Center(s); any Team Leader, Manager, or their alternates can activate their own organization to the level of support required to respond to any event.

5.0 Coordination with State and Local Governments:

The Business Manager for each region is responsible for establishing and maintaining a relationship with local governmental agencies and for providing a liaison with the appropriate agency during an emergency event. Emergency Management Team members representing Safety & Security, Emergency Response Liaison, and Public Information Officer can be utilized to assist in effective coordination and information between State and Local Government agencies.

Liberty Utilities is an active participant and supporter of state and local emergency response efforts including Local Emergency Planning Committees (LEPC), California Utility Emergency Association (CUEA), Sierra Front Wildfire Cooperators and local county offices of emergency services.

6.0 Mutual Assistance Agreements:

The Company has negotiated a Mutual Assistance Agreement for labor and equipment resources with NV Energy. Liberty Utilities is also a member of the CUEA and Western Energy Institute Mutual Assistance Roster.

7.0 Supplemental & Contingency Planning Resources:

No single plan can foresee all the needs or contain all the information necessary to respond to every event. By design, Emergency Management Plans are concise, uncluttered and with sufficient direction to reference information or detail contingency plans that can be obtained in other hazard specific plans or manuals. Many subject areas (i.e. load curtailment, hazardous material response, etc.) contain significant detail and complexity and are too cumbersome to include in any emergency response or business recovery plan. The following is a partial list of contingency plans or manuals may be included, in part, or as reference, to the Emergency Management Plan.

1. **Supplemental (Contingency) plans:**

a. Fire Prevention Plans
b. Outage Communication Plans
c. Mutual Assistance Agreements
d. Operations Procedure Manuals
e. Spill Response Plans
f. Business Continuity Plans

8.0 Emergency Plan Additional Elements

This Emergency Plan does not attempt to provide solutions for specific emergency scenarios; instead it provides a general framework for identifying solutions unique to the emergency situation at hand.

1. **Communications:** The Incident Commander serves as the spokesperson unless that function is specifically delegated by the Incident Commander; delegation is typically to an individual trained in the function of the Public Information Officer. Other Company personnel shall refrain from disseminating information to anyone.

   The Public Information Officer (PIO) is responsible for ensuring that relevant information is distributed in a timely manner to the general public via the news media. The PIO serves as the primary point of contact at the company for news media inquiries. This individual also facilitates communications between news reporters and other company representatives. The PIO or alternate should be available throughout the outage to provide periodic updates to the news media. If practical, the PIO should be on site at the Incident Command Center. The PIO is responsible for maintaining up-to-date telephone and fax listings for news media outlets.

   a. Prior to an Emergency- The PIO will update annually all media contact information. Information will be disseminated to the public through the media advising customer what to do to prepare for extended outages and what emergency supplies may be necessary to keep on hand. Customers will be given information on safety around downed power lines and other safety precautions to observe during an event. Media outlets will be provided with emergency contact information for the utility including names and contact information for each regional office as well as the PIO. The PIO will ensure that operations contact lists are up to date with both primary and secondary contact information available. The PIO will create standard messaging for common events. Pre-developed information can be found in the Communications Attachment to this plan.
   b. During an Emergency - The Incident Commander or designee contacts the PIO and provides outage information for distribution to media; the PIO contacts the media with outage information including the following:
      i. When did the outage begin?
      ii. What caused the outage?
      iii. How many customers are affected?
      iv. Where are they located?
      v. What are we doing about the outage?

vi. When do we expect service to be restored?

vii. vii. A telephone number customer can call for information?

viii. A description of safety hazards such as downed power lines?

c. Notifications – A contact list of the local governmental agencies, municipalities and media outlets within our service territory has been developed. During a major outage or emergency which affects a significant number of our customers, an email is sent to the respective personnel and agencies and media to provide information, detail and status of the outage. As the outage or emergency continues, status update emails and / or phone calls will be made to keep the agencies and media informed. Once the outage has concluded and the system is back to normal, a final email will be sent to close out the communication of the incident.

d. Customer Information/Contact - The primary point of customer contact is telephone information via live customer contact or the Interactive Voice Response and messaging system.

i. High Call Volumes: Customer Service Representatives (CSR) will pick up as many incoming calls as possible in the individual offices. During periods of High Call Volume the customer service centers utilize an Interactive Voice Response (IVR) system that will allow customers to receive customized messages about outages that are being addressed in the Tahoe Region. It will also allow for emergency calls to be routed to a live customer service representative for life support or life threatening emergencies. This system will also allow the customer to receive a call back regarding their outage if they choose that option.

ii. Customer Service Representatives will be able to develop custom IVR messages that will be heard by the customers on the IVR system for any calls that are not answered by a live CSR. Standard emergency message consists of: Day, Month, Time, General Areas Affected, Cause (if known), and Estimated Restoration Time (if known). A follow-up message with more specific information can be recorded as more information is received. The IVR system is capable of automated callbacks if the customer selects this option from the outage script. iii. The Customer Services Manager or the designated alternate may approve a request for mutual assistance as a Requesting Utility. The Company has Mutual Assistance agreements established with NV Energy and other utilities in case call volume or phone access prevent the Company from handling calls directly.

iii. Following the emergency event, the PIO or designee provides the media outlets used during the event with a wrap-up of information regarding the resolution of the emergency and any final information for the public. Customers who requested a return call following the event will be messaged by phone. These steps finalize the emergency communications with the public.

2. **Governmental & Regulatory Communications** - In nearly all emergency events the utility is closely involved with local law enforcement, medical and fire agencies. In larger Emergencies City and County Emergency Management representatives provide coordinating responsibilities in responding to the event. In escalating emergency events, additional coordinating resources, such as an Emergency Response Liaison and/or a Government Liaison, can be activated by the Incident Commander.

a. During emergency events the Company will provide communications to, or a liaison to, the highest level of city or county Emergency Operations Center activated. This is accomplished through Emergency Response Liaison or Government Liaison who are both members of the Emergency Management Team.
b. If an emergency event is large enough to initiate the activation of a State level Emergency Operations Center or Regional Emergency Operations Center, the Emergency Response Liaison will communicate with the State activated EOC. The California State coordination will be through the California Utilities Emergency Association (CUEA) Emergency Operations Center. The CUEA operates as a Utility Branch of the State Standardized Emergency Management System (SEMS) and reports directly to the State Operations Center (SOC) in Sacramento.
c. The Company is a member of the California Utilities Emergency Association (CUEA) which provides emergency planning, training, resource assistance, and operates the Utility Emergency Operations Center as the Utility Branch for the Office of Emergency Services (OES) at the State EOC. The Company Emergency Response Liaison is a responder to the CUEA EOC, which is co-located with the State Operations Center.
d. The California Public Utility Commission (CPUC) requires reporting for Safety and for substantial outages. Guidelines for reporting to the CPUC utility commissions follow this section in Table 1. Reporting forms and checklists are also contained in the Regulatory Reporting Attachment to this plan.

TABLE I: Reporting Guidelines for Public Utility Commission

The following is a summary of reporting requirements. The Corporate Regulatory Manager should be consulted for any discrepancies or questions regarding reporting of incidents or events. The table is a guideline only.

California Public Utility Commission = CPUC, Office of Emergency Services (OES) at the State EOC

What:	Defined:	Report To:	When:	How:
Major Outage	**Customers simultaneous and non-momentary outage of 1/2 Customers (Approx. 23,000)**	**1) OES Warning Center** **2) CPUC Energy Division**	**1) OES Within 1 hour,** **2) CPUC within 1 hour,** **3) CPUC every 4 hours with updates**	**1) OES 800 number** **2) Energy Branch Phone Mail** **3) Phone mail or e-mail as per Energy Division request.**

Sustained Outage	**A. Outage lasting over 24 hours or expected to total over 60,000 customer hours (or an event likely to lead to such a situation)** **B. Outages expected to accrue over 300,000 cust. hours.**	**1) CPUC Energy Division**	**1) A. By 9:00 AM the next Business Day** **2) B. CPUC Energy Branch within 1 hour**	**1) Energy Branch Phone Mail**
Notable or Newsworthy	**Event involving facilities or personnel reported in two media markets or in national media.**	**1) CPUC Energy Division** **2) CPUC Utility Safety Branch**	**1) CPUC Energy Branch within 1 hour** **2) Safety Branch within 2 hours during working hours and 4 hours outside of working hours.**	**1) Energy Branch Phone Mail** **2)Safety Branch** **a) Report at http://www.cpuc.ca.gov/emrep/** **b) Follow up with email or fax within 24-hours** **Formal Report *20* days**

TABLE I: Reporting Guidelines for Public Utility Commission (Cont.)

What:	Defined:	Report To:	When:	How:
Load Shed / Rolling Blackout	Loss of power supply leading to extensive load shedding or rolling blackout. Imminent or Planned Load Curtailment or Rotating Outages of Firm Load.	1) CPUC Energy Division	1) CPUC within 1 hour and every time a new circuit is interrupted.	1) Energy Branch Phone Mail
Injury / Fatality	Fatality or personal injury rising to the level of in-patient hospitalization.	1) CPUC Utility Safety Branch 2) CPUC Energy Branch	1) Safety Branch within 2 hours during working hours and 4 hours outside of working hours. 2) Energy Branch within 1hour	1) Safety Branch a) Report at http://www.cpuc.ca.gov/emrep/ b) Follow up with email or fax within 24-hours c) Formal Report *20* days 2) Energy Branch Phone Mail
Damage to Property	Damage to property of the utility or others estimated to exceed $50,000 and are attributable or allegedly attributable to utility owned facilities.	1) CPUC Utility Safety Branch	1) Safety Branch within 2 hours during working hours and 4 hours outside of working hours.	1) Report at http://www.cpuc.ca.gov/emrep/ 2) Follow up with email or fax within 24-hours 3) Formal Report *20* days

(EHS will participate in all reporting and investigation of injury, fatality or damage incidents according to 8800-100-200-001- Incident Reporting and Investigation Procedure)

3. **Safety** - This Plan requires a "Safety First" response to all emergencies; the safety of employees, contractors, assisting crews, and the general public is to be ensured at all times.

a. Public Safety - The Company provides on-going public electric safety courses and information so that the Public will be prepared when an emergency event occurs. These programs are provided year round to all levels of schools, business, service clubs and also trade shows and expositions. Additionally the Company routinely provides electric safety training to local and regional law enforcement, fire, county and state transportation, and other emergency response agencies. Public Safety Training is the responsibility of all.

   i. During an emergency event, the Company may utilize Stand-By personnel, trained in general electrical safety, to "Observe and Report" electric hazard conditions, and assist in "Perimeter Safety" around identified hazards due to unsafe conditions until qualified electric personnel arrive. The Public shall heed all warnings and barriers placed by the Company to secure hazards.

b. Employee Safety - Personnel safety is identified as a key element within this Emergency Response Plan. Electric Trade Personnel, including Ground person, helpers, apprentices, journeyman lineman, trouble men, inspectors etc., are provided the highest level of safety and skills training to perform in both daily and emergency situations.

   i. Only "Qualified" and trained personnel may perform safety sensitive functions including switching, de-energizing, overhead and underground operations, repairing and assessing damage.

   ii. To ensure employee safety (and public safety as well), the design, installation and operation of equipment and automatic protection schemes for transmission and substation equipment must remain in place, protection schemes may not be by-passed by any employee .

   iii. Employees will follow procedures which are in accordance with OSHA 1910.269 regulations.

   iv. Non-Trade personnel that are utilized in assistance with emergency repair (metering, meter reading, construction, etc.) must be trained in general electric safety before assisting in emergency field response.

c. During An Emergency Event - The Company will respond to Immediate Life Safety Issues as the top priority. Once a hazardous situation is reported, immediate response will be provided by line crews, trouble man, inspectors or other trained personnel to assess and make the situation safe by de-energizing, supporting, removing, repairing, or barricading and providing for Safety Stand-By personnel as necessary.

   i. All field response employees shall have safety training which is aligned with their respective roles.

   ii. All electrical switching and reporting shall be handled through the appropriate Controlling Parties to ensure both employee and public safety.

   iii. The Company will provide regular public information, typically in the form of media messages or alerts, regarding unsafe or hazardous areas or conditions that the public should be kept informed about.

   iv. In the event of an area emergency that is life or property threatening, the Emergency Alert System (EAS) can be enabled through the local or county Emergency Management or Public Safety office. The Company will advise the Emergency Management agencies when such alert is essential.

v. Public Safety Agencies will be utilized as necessary for traffic control and perimeter safety until qualified personnel arrive to clear the hazard situation. Agencies will be used if necessary to control public disturbances and establish safety controls for the public.

vi. Employees are monitored for appropriate meal breaks, hours worked and safety compliance; when emergencies are expected to last more than 24Hours, shifts will be established to cover work and employees will be given appropriate rest periods.

vii. Weather and road conditions are monitored for worsening conditions such that workers do not become stranded at remote work locations.

viii. Work may be curtailed, even if customers remain out of service, until safe work conditions prevail.

4. **Damage Assessment** - The designated Incident Commander is responsible for determining how damage assessment will be best achieved for the specific emergency situation and other functions to be performed by specific individuals. The Incident Commander may delegate the responsibility, or a piece of the responsibility, to the Manager(s) or other qualified individual(s), or retain this responsibility.

a. The designated Damage Assessment Leader(s) will then become responsible for assembling, assigning and setting priorities for Damage Assessment Teams in accordance with Restoration Priority Guidelines or priorities established by the Incident Commander.

b. Company Crews, Linemen, Troublemen, Electric Inspectors, Utility Designers and/or engineers will be first called for damage assessment; Company personnel will be augmented as necessary and approved by the Incident Commander with Contractors and/or mutual aid parties.

c. Company Teams will be given priority patrol assignments along with difficult hazards and locations unfamiliar to visiting teams.

d. Documentation of Damage: All damage will be recorded by the teams on the circuit maps IN RED. The standard symbols shown below shall be used.

i. Standard Symbols :

F = Blown line Fuse
B = Tree Branch on Line
P = Primary Span Down - Provide # ____
S = Secondary Span Down - Provide # ____
PB = Poles Broken - Provide # ____
PL = Poles Leaning - Provide # ____ (Correction Required)
SV= Service(s) Down - Provide # ____
TR = Transformer(s) Down - Provide # ____
OIL = Oil spill, Clean up needed; Identify PCB or Non-PCB

e. Damage Assessment Teams shall take the following standard supplies to the field to perform assessments: Clip Board, Circuit Map Books, Red Pens, Pencils or pens, Patrol Report Forms, Area or Street Maps, Stores Request Forms, PCB Oil Test Kit, Digital Camera (with charged battery), Warning Tape, Cones and Barriers.

f. All maps and related information shall be returned to the Damage Assessment Leader as soon as practicable for restoration decision making.

g. To the extent practicable, downed or damaged facilities shall be isolated, secured and warnings applied utilizing cones, warning tape or other barriers or warnings.

5. **Restoration** - Service restoration is unique to each emergency and prioritizing restorations may depend upon a number of factors including safety, accessibility, availability of repair parts, availability of personnel as well as other factors. This element of the plan identifies general prioritization guidelines for restorations, but allows for the Incident Commander or designee to alter priorities according to the circumstances of the emergency and in coordination with essential load customers and government agencies involved.
    a. General Restoration Guidelines include:
        i. Restoring radial transmission and substations first;
        ii. Followed next by addressing distribution circuits with "Essential Customers" such as health care facilities, utilities, public safety, governmental facilities and lifeline customers.
        iii. Subsequently, circuits with the greatest number of customers are prioritized;
        iv. Next in line are primary taps followed by secondary lines.
        v. Finally individual services which are accessible and serviceable can be addressed. vi. Essential Customers: Below is the priority list of these types of Customers; specific contact information and locations of each "Essential Customers" may be found in the Customer Information Attachment to this Plan. Priority assumes circuits, equipment and services are accessible and repairable.

1. Health Care Facilities
    a) Primary Care Hospitals
2. Utility Services/Districts
    a) Public Utility Districts
    b) Telecommunications
    c) Water/Water Treatment
    d) Pipeline
3. Public safety agencies
    a) Public Safety Dispatch Centers
    b) Law enforcement facilities/holding facilities
    c) Fire operations facilities
    d) Transportation equipment and facilities
4. Government facilities
5. Green Cross/Life Line

6. **Mutual Aid** - The Incident Commander has responsibility for mobilizing resources, contracting for additional assistance and supplies, and calling for assistance from neighboring utilities through Mutual Aid Agreements.
    a. The type, size and duration of an emergency event will determine, in varying degrees, the amount of resources required to respond to the event. The Regional Operations do not have enough resources to respond to a large emergency event without supplementing manpower, equipment or materials from other sources.
    b. The Incident Commander will direct the requests for additional internal (company) and external resources; The Incident Commander must approve the use of Mutual Aid.
    c. Requests may be made for efficiency and not for exhausted resources. Resource requests may include trade and non-trade personnel to assist in safety stand-by, damage assessment, planning or liaison activities, or materials and equipment necessary to facilitate restoration of utilities.

9.0 Training

Liberty Utilities employees receive Emergency Management Plan training annually. All employees are trained and their commitment is critical to the successful Plan implementation during an emergency. Instruction includes specific training on the roles and responsibilities of each functional area in support of the ICS at the Company level or the Incident Commander at the regional level. With a finite workforce, employees may be called upon to support areas outside their normal job assignments with appropriate training. In addition, emergency response exercises are executed annually so employees gain practice in the use of the plan as well as test the plan for effectiveness. The Company participates in regional exercises to train employees and exercise the Emergency Management Plan.

10.0 Record Keeping

Recordkeeping is essential to all programs especially the EMP. All training, program elements, comprehensive emergency plans, exercises, debriefing, corrective action and evaluations must all be documented and accessible.
Records are retained for the following reasons:

- Due diligence
- Training (lessons learned)
- Regulatory requirements

All electronic communication such as emails, meeting minutes, resource plans, and incident progress reports will be submitted to the local internal emergency mailbox. Copies of these reports will also be submitted to Corporate Headquarters. Retention of these records is critical as they will be examined during debriefing and corrective action exercises.

berty Utilities

TABLE 2

		Operating Conditions and Storm Levels				Weather Indices					
Storm Event Level	Operating Condition	Expected % of Customers w/o Service & Duration (1)	Expected Number of Trouble Locations / Devices (2)	Expected Number & Types of Crews	Typical Event Frequency	Snow (wet / inches)	Ice Accretion (inches)	Tree Foliage: Leaves on	Tree Foliage: Leaves off	Wind Impact (mph)	Wind Only (mph)
5	Small Impact Event (Localalized Response Conditions)	> 2,500 & < 4,499 customers	0 - 4 Locations or Devices of Trouble	Normal activity, daily internal crew assignments.	5 - 75 times per year	≤ 2"	< 0.25			≤ 25	< 25 Gusts to 25
		AND				≤ 4"	< 0.50	✓		≤ 10	
		>1 & <12 hour ERT for full system service restoration									
4	Moderate Impact Event (Heightened Alert)	> 4,500 & < 9,999 customers	2 - 10 Locations or Devices of Trouble	Normal activity, daily internal crew assignments. Possible crew transfer between areas. Utility Contractor crews (overhead line and tree) limited to normal daily complement, as needed.	5 - 15 times per year	≤ 6"	< 0.25	✓		≥ 25	15 - 25 Gusts to 45
		AND				≤ 8"	0.25 - 0.50	✓		15 - 25	
		>12 & < 24 hour ERT for full system service restoration				≤ 10"	0.50 - 0.75	✓	✓	≤ 10	
3	Serious Impact Event (Enhanced Support)	> 10,000 & < 19,999 customers	3 - 15 Locations or Devices of Trouble	Regional or System ICS may be initiated and Regional EOC's may be opened. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.	0 - 5 times per year	≤ 6"	0.10 - 0.25	✓	✓	≥ 35	35 - 45 Gusts to 55
		AND				≤ 8"	0.25 - 0.50	✓	✓	25 - 35	
		> 24 hour ERT for full system service restoration				≤ 10"	0.50 - 0.75	✓	✓	15 - 25	
						≤ 12"	0.75 - 1.00	✓	✓	< 15	
2	Major Impact Event (Comprehensive Support)	> 20,000 to < 50% customers	> 5 Locations or Devices of Trouble	Regional or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.	Once every 1 to 10 Years	≤ 12"	0.25 - 0.50	✓	✓	≥ 35	45 - 55 Gusts to 75
		AND				≤ 14"	0.50 - 0.75	✓	✓	25 - 35	
		> 24 hour ERT for full system service restoration				≤ 16"	0.75 - 1.00	✓	✓	15 - 25	
						≤ 18"	1.00 - 1.50	✓	✓	< 15	
1	Catastrophic Impact Event (Emergency Support)	> 50% customer interruptions	> 10 Locations or Devices of Trouble	Regional and/or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.	Once every 10 to 25 Years	≤ 15"	0.50 - 0.75	✓	✓	≥ 35	≥ 55 Gusts to > 75
		OR					0.75 - 1.00	✓	✓	≥ 25	
		> 72 hour ERT for full system service restoration					1.00 - 1.50	✓	✓	≥ 15	
							> 1.50	✓	✓	Any	

LU CA Electric Emergency Incident Levels and Classification Guidelines

Classifications	Level 5: Small Impact Event	Level 4: Moderate Impact Event	Level 3: Serious Impact Event	Level 2: Major Impact Event	Level 1: Catastrophic Impact Event
Expected # of Customers w/o Service & Duration (1)	> 2,500 & < 4,499 customers AND > 1 hr & < 12 Hr ERT for full service restoration	> 4,500 & < 9,999 customers AND > 12 hr & < 24 Hr ERT for full service restoration	> 10,000 & < 19,999 customers AND >24 hour ERT for full system service restoration	> 20,000 to < 50% customers AND > 24 hour ERT for full service restoration	> 50% customer interruptions OR > 72 hour of ERT for full service restoration
Expected Number & Types of Crews	Normal activity, daily internal crew assignments.	Normal activity, daily internal crew assignments. Possible crew transfer between areas. Utility Contractor crews (overhead line and tree) limited to normal daily complement, as needed.	Regional or System ICS may be initiated and Regional EOC's may be opened. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.	Regional or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed.	Regional and/or System ICS will be initiated. All available Ops personnel are utilized. Utility Contractor, Mutual Aid Assistance, tree crews, and support functions such as logistics will be used as needed. CPUC notification required.
Email	DL ON Oakville 911 Level 5	DL ON Oakville 911 Level 4	DL ON Oakville 911 Level 3	DL ON Oakville 911 Level 2	DL ON Oakville 911 Level 1