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Decision 19-05-040 May 30, 2019

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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

DECISION ON 2019 WILDFIRE MITIGATION PLANS OF LIBERTY UTILITIES/CALPECO ELECTRIC; BEAR VALLEY ELECTRIC SERVICE, A DIVISION OF GOLDEN STATE WATER COMPANY; AND PACIFIC POWER, A DIVISION OF PACIFICORP PURSUANT TO SENATE BILL 901

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DECISION ON 2019 WILDFIRE MITIGATION PLANS OF LIBERTY UTILITIES/CALPECO ELECTRIC; BEAR VALLEY ELECTRIC SERVICE, A DIVISION OF GOLDEN STATE WATER COMPANY; AND PACIFIC POWER, A DIVISION OF PACIFICORP PURSUANT TO SENATE BILL 901

Summary

Catastrophic wildfires have devastated California in recent years. The Legislature enacted Senate Bill 901 in 2018 mandating action by this Commission on Wildfire Mitigation Plans (WMPs or Plans) submitted by the electrical corporations we regulate. This is one in a series of decisions we are issuing to act on the 2019 Plans of the three large California investor-owned utilities, the three small/multijurisdictional utilities, and two independent transmission owners. This decision acts on the WMPs of Liberty Utilities/CalPeco Electric (Liberty), Bear Valley Electric Service (BVES) (a Division of Golden State Water Company), and Pacific Power (PacifiCorp) (a Division of PacifiCorp).

Along with this decision, the Commission is issuing a guidance decision addressing issues that are common to all WMPs. Liberty Utilities, BVES, and PacifiCorp are bound by both the requirements of this decision and the general guidance decision.

1. Liberty Utilities/CalPeco Electric

1.1. Overview of Liberty's Wildfire Mitigation Plan

Liberty Utilities/CalPeco's (Liberty's) Plan contains each of the elements required in Senate Bill (SB) 901, Public Utilities Code Section 8386(c). We require Liberty to meet certain reporting requirements, capture data, and update its next Wildfire Mitigation Plan (WMP) in the areas of inspection and maintenance, vegetation management, system hardening, and situational awareness.

While some elements of Liberty's WMP could benefit from additional development and detail, the WMP contains the required elements set forth in

SB 901. To aid readers, attached as Appendix B to this decision is a table that cross references each item in SB 901's list of required WMP elements, against the WMP template required in the assigned Administrative Law Judge's (ALJ's) January 17, 2019 ruling.

The programs that will take the greatest amount of time and effort in Liberty's WMP involve vegetation management, system hardening, and inspections. The Commission's Public Advocates Office (Cal Advocates) and Office of the Safety Advocate (OSA) filed comments on Liberty's WMP focused on system hardening, de-energization, and metrics.

The Plan is often sparse on analysis to support the proposed mitigation measures. Liberty does not measure the risk reduction gained by implementing the proposed mitigation programs and strategies. Many of the proposed mitigation measures contained within Liberty's WMP target the same risk. Thus, Liberty stacks multiple measures on top of each other, making it difficult to discern what, if any, risk reduction is attributable to individual mitigation measures.

1.2. Inspection and Maintenance

SB 901 contains several provisions related to an electrical corporation's inspection and maintenance. Public Utilities Code Section 8386(c)(9) requires an electrical corporation's WMP to contain a description of its plans for inspection and maintenance of the electrical corporation's electric infrastructure. Inspection and maintenance includes conducting system patrols, using technological inspection tools, managing maintenance, and vegetation management. Liberty's inspection and maintenance plan is discussed below.

1.2.1. Liberty's Proposed Inspection and Maintenance Program

Liberty states it conducts: (1) on-ground inspection; (2) equipment inspection; and (3) vegetation inspection and maintenance. Liberty states that it carries out inspections as required by Commission General Order (GO) 165, patrols higher risk fire circuits in Tier 3 areas of the Commission's High Fire Threat Districts (HFTD), monitors vegetation during its system patrols, and also directs a contractor to conduct additional inspections and vegetation management. The utility has a formal inspection and maintenance program for distribution, transmission and substation equipment. It patrols its transmission and distribution equipment every one to two years, with a detailed inspection performed every three years; it inspects substations quarterly with substation relays maintained every one to six years, depending on the type of relays as well as staffing availability.

In addition, Liberty responds to high-risk fuel sources with efforts to remove identified vegetation as needed. The utility states that this maintenance work occurs once every three years per circuit. Liberty tracks and maps specific items of its electric infrastructure as needed with geographic information systems (GIS) technology. Liberty states that it plans in the future to use more advanced technology to enhance its inspection capabilities.

1.2.2. Discussion – Inspection and Maintenance

Liberty's Plan contains an inspection and maintenance program as required by Public Utilities Code Section 8386(c)(9). However, it should provide more detail in its next WMP, and capture data during this WMP cycle to learn the impact of its proposals.

In its next WMP, we direct Liberty to identify all types of data it collects as part of its inspection program and models, programs, or applications in which it

uses the data. We also direct Liberty to track the number of elevated fire danger days in its territory, using indicators from the National Fire Danger Rating System (NFDRS) or the National Weather Service's Red Flag Warnings (RFW), along with the number and types of potential ignition events. This information will provide insight the Commission, California Department of Forestry and Fire Protection (CAL FIRE), and other stakeholders need to better understand and properly analyze the risk of catastrophic wildfires caused by electrical lines and equipment.

Additionally, Liberty proposes a "Forestry Resiliency Corridor," but this program lacks sufficient detail to determine what wildfire prevention value or benefit it will bring to California. While this program may have merit, Liberty did not provide enough information about its use. Therefore, in its next WMP, Liberty shall provide more information about its "Forest Resiliency Corridor" and explain how Liberty will engage with entities like CAL FIRE to maximize the benefit of this program.

Finally, we direct Liberty to provide more information in its next WMP about the specific actions it will take during RFWs, and how it will coordinate such action and information with CAL FIRE. Liberty needs to include a robust discussion about its operational procedures in response to high-risk conditions, including how its day-to-day work will change as a result of high-risk conditions.

1.3. System Hardening

SB 901 contains several provisions related to an electrical corporation's system hardening. System hardening includes design and technical upgrades to substations, poles, wires, or other structures. Public Utilities Code Section 8386(c)(12) requires an electrical corporation's plan to contain a

description of the actions it will take to ensure its system will achieve the highest level of safety, reliability, resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design standards, equipment, and facilities such as undergrounding, insulation of distribution wires, and pole replacement. We discuss Liberty's system hardening plan below.

1.3.1. Liberty's Proposed System Hardening Program

To harden its system, Liberty proposes to: (1) install covered conductor; (2) conduct pole loading calculations and assessments; (3) replace conventional fuses with "current limiting" fuses that do not expel hot material when blown; (4) replace its Brockway Substation and upgrade its Stateline Substation; (5) underground certain electric lines; and (6) eliminate power lines that are strung on trees.

As part of its pole loading and replacement plan, Liberty states it will be reconductoring segments of its circuits starting in 2019. Because it will replace bare wires with covered conductors, Liberty will perform pole loading calculations and pole health evaluations to ensure the poles are strong enough to support the heavier covered wire. If any pole fails the assessment, Liberty will replace it with a stronger pole. Liberty states that this practice will continue throughout its covered conductor replacement program.

Liberty also proposes to replace conventional fuses with current limiting fusing on much of its system. Conventional fuses, when activated, expel hot particles and gases, which can start fires. According to Liberty, current limiting fuses expel no materials, limit the available fault current, and in many cases can reduce the duration of faults. Liberty intends to replace 13,466 conventional

fuses with current limiting fuses across 6,741 locations. Liberty estimates that this replacement will take nine years to complete and will cost $721,550.

Liberty has identified two substations that it believes pose a potential wildfire risk: the Brockway Substation and the Stateline Substation, Liberty proposes to replace the Brockway Substation equipment with modern equipment and relocate the substation to a location that increases the distance between electrical equipment and vegetation. Similarly, Liberty proposes to upgrade the Stateline Substation with a new substation with a new design and equipment. Liberty estimates that the cost for the Brockway Substation will be $13 million and the upgrade to the Stateline Substation will be $3.5 million.

Additionally, Liberty plans to underground approximately 4,760 feet of overhead power lines within the Lake Tahoe Basin at an estimated cost of $7,390,220.

Finally, Liberty proposes to remove approximately 60 tree attachments per year between North and South Lake Tahoe. Tree attachments are pieces of electrical infrastructure fastened to trees for support. The utility claims there are challenges with tree attachment removal because many attachments are on private property, which requires coordination with the property owner. Current estimates reflect approximately $7,000 per pole/tree for attachment removal.

1.3.2. Parties' Comments – System Hardening

Cal Advocates and OSA filed comments on Liberty's system hardening proposals. Cal Advocates' key concerns can be summarized as follows:

- Liberty should demonstrate the wildfire risk reduction benefits for relocating the Brockway Substation and replacing portions of the Stateline Substation; include a timeline for its covered conductor program; and update its 2019 WMP to accelerate the covered conductor program.

OSA focuses on faults caused by animals or birds and asks the Commission to require Liberty to gather data on such faults, investigate how to mitigate them, and take action to protect infrastructure, birds and animals against such faults in Tier 2 and 3 HFTD areas in its service territory.

In response, Liberty states:

- Liberty already has an Avian Protection Plan in place to protect birds and wildlife from related outages;
- A recent fire marshal inspection recommends modernizing and relocating the Brockway Substation to alleviate fire safety concerns;
- The proposed changes to the Stateline Substation would alleviate many fire risk issues. The substation is adjacent to the City of South Lake Tahoe and could prove dangerous if an ignition event were to cause a wildfire; and
- Liberty will determine if accelerating its covered conductor program is feasible and will update its Plan accordingly.

1.3.3. Discussion – System Hardening

While Liberty's WMP includes system hardening elements, the utility should provide more granular information in future WMPs. Such granular information should include Cal Advocates' recommendations: (1) demonstrate the wildfire risk reduction benefits of relocating the Brockway Substation and replacing portions of the Stateline Substation; (2) include a timeline for its covered conductor program; and (3) update its 2019 WMP to accelerate its covered conductor program. Liberty should also explain how it will continually strategize to improve its Plan features and programs and work with the Commission, CAL FIRE and other agencies to achieve optimum wildfire mitigation.

We direct Liberty to track and annually report its wire-down events and fault data. Liberty shall include the following data in this reporting: (1) date and

time of the wire-down event or fault; (2) location information with latitude and longitude coordinates, pole number, and location in the HFTD; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current. In all future ignition report filings, we direct Liberty to include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

1.4. Vegetation Management Plan

SB 901 contains several provisions related to an electrical corporation's vegetation management. Public Utilities Code Section 8386(c)(8) requires an electrical corporation's WMP to contain a description of its plans for vegetation management. We discuss Liberty's vegetation management plan below.

1.4.1. Liberty's Proposed Vegetation Management Program

Liberty's WMP states that Liberty has a vegetation management plan in place, which is implemented by utility staff in conjunction with third-party contractors. Liberty also states it increased planned expenditures for the vegetation management plan from $2.5 million to approximately $4 million annually.

Liberty's vegetation management plan has the following components: (1) routine vegetation maintenance; (2) off-cycle tree work; (3) quality control; and (4) resource protection.

First, Liberty's routine vegetation maintenance plan 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 states it mobilizes utility foresters, contracted or employed arborists, and tree-trimming contractors to meet these objectives.

Second, Liberty's off-cycle tree work encompasses maintenance efforts beyond routine inspection practices. The utility asserts that its Vegetation Management Department uses notifications from external sources such as neighboring or local agencies, triggering remediation of the identified tree or vegetation source.

Finally, Liberty requires its utility staff and contractors to document and adhere to clearance specifications, pursuant to GO 95 Rule 35, and to adhere to resource protection protocols. Liberty adds that it also permits its contractors to create additional clearance based on growth factors or weather conditions.

Liberty states that its vegetation management plan accounts for at-risk vegetation. For example, Liberty states that trees have died at an increased rate because of bark beetle infestations as a result of the drought. Liberty states it has determined that efforts to curb the risks presented by tree deaths is no longer manageable with current staffing levels. The utility states that it will add personnel to deal with dead trees and seek to record costs in its Catastrophic Event Memorandum Account.

1.4.2. Discussion – Vegetation Management

Liberty's WMP includes a vegetation management element that is intended to mitigate wildfire risks as required by Public Utilities Code Section 8386(c)(8). However, in its next Plan, Liberty shall provide more information on how it intends to implement its vegetation management strategies and work with such entities as CAL FIRE in implementation.

Liberty should better explain how it identifies hazardous trees and tree species to demonstrate which parts of its service territory require management.

Liberty shall also collect data on what triggers its off-cycle tree work beyond routine inspection practices and provide a schedule of tree treatments and treatment locations to the Commission, CAL FIRE and other agencies upon request.

Finally, we direct Liberty to provide the Commission and CAL FIRE with geospatial facility information on request. This should include, but not be limited to, the following: (1) above and below ground conductors; (2) voltage levels; (3) exempt/non-exempt hardware; (4) pole locations; and (5) underlying base maps that include parcel boundaries within the limits of planned vegetation management work.

1.5. De-Energization

1.5.1. Order Instituting Rulemaking (OIR) on De-Energization

SB 901 contains several provisions related to an electrical corporation's de-energization plans. Public Utilities Code Sections 8386(c)(6) and (7) require an electrical corporation's plan to contain a description of a de-energization/Public Safety Power Shut-Off (PSPS) program to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires.

The Commission is examining de-energization in depth in Rulemaking (R.) 18-12-005, given the significant interest in the topic by communities affected by wildfire, cities, counties, first responders, persons with disabilities and medical conditions and others. In the scoping memo in this proceeding, we explained that in reviewing electrical corporations' de-energization protocols in this decision, we would consider whether the protocols comply with Resolution ESRB-8 (or the Resolution). To the extent the Commission authorizes new requirements in R.18-12-005, those requirements

will automatically apply once adopted. Thus, de-energization is on the list of items that WMPs must cover, and accordingly will be addressed in this proceeding as one element of the plans, but the subject requires more in-depth consideration than it can receive in this proceeding.

Resolution ESRB-8 applies the de-energization, notification and mitigation requirements of Decision (D.) 12-04-024 (which was at the time applicable only to San Diego Gas & Electric Company (SDG&E)) to all electric investor-owned utilities (IOUs). The Resolution requires additional coordination, communication and public outreach measures to increase public awareness of potential de-energization events.

1.5.2. Liberty's Proposal for De-Energization

Liberty has identified "Red" or "Orange" signals from the NFDRS that warrant precautionary action in advance of a PSPS. Liberty states it will take precautionary actions, including monitoring of forecasted wind speeds, local and surrounding weather monitoring, and local forecasts. Liberty states that it will make its decision to de-energize by analyzing forecasted extreme fire weather conditions and imminent extreme fire weather conditions.

When de-energization is deemed necessary, Liberty states its crews will manually shut off at-risk circuits, lines, and other infrastructure. Liberty states it will continue to work closely with local stakeholders that own or operate critical facilities, including hospitals and police and fire departments, to ensure their facilities remain operational and/or they have back-up plans in PSPS situations. Additionally, Liberty states it will update its PSPS plan in accordance with R.18-12-005.

1.5.3. Party Comments – De-Energization

OSA addresses Liberty's PSPS proposal; its key concerns can be summarized as follows:

- Liberty's PSPS procedures do not include an evacuation plan and such a plan is needed;
- Liberty's PSPS procedures do not include a notification timeline for PSPS events;
- Liberty's PSPS procedures do not say anything about contacting critical service providers; and
- Liberty's PSPS procedures do not contain a description of how it will track and contact (medical baseline) customers or vulnerable customers during the execution of a PSPS.

In response, Liberty states:

- The Lake Tahoe area already has an established evacuation plan for both the North and South Lake Tahoe areas;
- With funding provided by CAL FIRE, the North Lake Tahoe Fire Prevention District and Meeks Bay Fire Prevention District developed the North Lake Tahoe plan;
- The South Lake Tahoe Emergency Management Community Council, in collaboration with Lake Tahoe-based safety agencies, developed the South Lake Tahoe Plan;
- Liberty is ready and willing to work with these agencies and when asked, will provide support and input to these plans;
- Liberty's PSPS procedures, as stated in its Plan, contain a stakeholder list of critical service providers as well as contact protocols;
- Liberty maintains a list of critical care customers who have notified the company of medical conditions that require electric service in its GIS system and the utility performs outreach to notify customers via its Everbridge automated calling system;

- Liberty continues to enhance its PSPS communication procedures; and
- In its 2020 Plan, Liberty will propose a five-phase customer and stakeholder notification PSPS procedure.

1.5.4. Discussion – De-Energization

Liberty's WMP incorporates de-energization procedures as required by Public Utilities Code Sections 8386(c)(6) and (7). OSA's comments raise issues that are within the scope of the issues in our de-energization proceeding, R.18-12-005, so we defer to the decision there to resolve the issues. The information Liberty provided in reply to OSA's comments all appears relevant.

1.6. Situational Awareness and Alternative Technologies

SB 901, as codified in Public Utilities Code Section 8386(c)(3), requires an electrical corporation's Plan to include a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks. We interpret this provision to require a description of a situational awareness program to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risk. We discuss Liberty's situational awareness plan below.

1.6.1. Liberty's Proposal – Situational Awareness

Liberty's proposed situational awareness plan includes weather monitoring and a weather station installation project. Liberty states it uses the NFDRS and maintains close contact with local weather station personnel as part of its situational awareness protocols. Additionally, Liberty intends to install 13 weather stations in 2019, with ten already purchased. Liberty states the cost of the 13 weather stations is approximately $148,720.

1.6.2. Discussion – Situational Awareness

While sparse, Liberty's WMP does contain situational awareness elements. However, Liberty should consider investing in additional resources that increase weather monitoring and situational awareness. The utility should look to its peers – Bear Valley Electric Service (BVES) and Pacific Power (PacifiCorp) – for additional situational awareness strategies that could enhance its program.

In its next plan, we direct Liberty to explore the use of Distribution Fault Anticipation (DFA) technology, which was discussed at the recent Wildfire Technology Innovation Summit, which the Commission and other agencies held March 20-21, 2019. This technology may provide the utility with a proactive regime to detect and identify potential ignition sources before they occur.

1.7. Emergency Preparedness, Outreach and Response

SB 901 contains several provisions related to an electrical corporation's emergency preparedness and response plans and communications before, during and after a wildfire.

Public Utilities Code Sections 8386(c)(13), (16), (17) and 768.6 require a WMP to contain emergency preparedness and response plans that comply with mandates involving communications with cities and counties, preparation for and restoration of service after a wildfire, and public outreach.

Specifically, the statute requires the WMP sponsor to share its emergency preparedness and response plans with relevant cities and counties to provide input and feedback, and update and improve the plans at least every two years. It also requires the WMP's emergency preparedness and response plan to list persons responsible for plan execution, establish procedures for notifying impacted customers, establish protocols for restoration of service, and create a workforce mobilization plan for its employees before and after a wildfire. The

statute mandates that a WMP include a plan for community outreach and public awareness before, during, and after a wildfire in an array of languages including English, Spanish, and the top three languages in California as determined by United States census data.

1.7.1. Liberty's Emergency Preparedness, Outreach and Response Plan

Liberty's WMP emergency preparedness, outreach and response plan consists of the following components: (1) emergency activation; (2) coordination; (3) mutual assistance; and (4) contingency planning, as well as additional plan elements such as training and record keeping.

In summary, Liberty states it will engage with key stakeholders in its emergency preparedness and response. This includes such groups as: (a) all classes of customers receiving electricity from Liberty; (b) local governments and critical agencies such as CAL FIRE, local law enforcement agencies, municipalities, hospitals, local emergency planning committees and an array of other entities; (c) the partner entities with which Liberty has Mutual Assistance Agreements, such as NV Energy, the Western Energy Institute Mutual Assistance Roster, and the California Utilities Emergency Association; and (d) the Commission.

Liberty categorizes its emergency preparedness and disaster response into specific levels that are each identified with the need for specific actions. For example, in a catastrophic event, Liberty will respond with maximum internal and external strategic planning, coordination, communication, and dissemination of public information across its region and with its stakeholders as partners. Additionally, Liberty's WMP requires its employees to participate in annual emergency management plan training, and outlines protocols for record keeping.

Liberty's WMP also delineates roles and responsibilities, identifying the key staff member with a description of what action that person is responsible for during an emergency.

1.7.2. Discussion – Emergency Preparedness, Outreach and Response

Generally, Liberty's WMP incorporates an Emergency Preparedness, Outreach and Response Plan as required by Public Utilities Code Section 8386(c)(16)(A) and (B). Liberty's Plan contains details about how the utility will conduct customer outreach and notifications to prepare customers before, during and after a wildfire. Liberty's Plan contains a robust list of stakeholders that it will actively engage to improve resilience while grappling with the severity of a wildfire disaster.

However, Liberty is required to communicate its WMP's emergency preparedness outreach and response in specific languages. Liberty's WMP does not comply with this requirement.

Specifically, Public Utilities Code Section 8386(c)(16)(B) mandates that Liberty's plan for community outreach and public awareness before, during, and after a wildfire be communicated in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the Commission based on the United States Census data. Taking official notice of United States Census data pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure, the Commission determines that the following languages are the three most common languages used in the state other than English or Spanish: Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese. In addition to those languages, Liberty shall provide outreach in Korean and Russian, where those languages are

prevalent in its service territory. Liberty shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in the above languages.

Finally, we direct Liberty in its future Plans to discuss the strengths and weaknesses of its emergency preparedness, outreach, and response program as it engages with stakeholders during this upcoming fire season. This will inform our review of improvements needed to ensure all resources are coordinating responsively and effectively in times of crises.

1.8. Support to Utility Customers During and After a Wildfire

Public Utilities Code Section 8386(c)(18) requires a WMP to comply with the requirements we adopted in D.18-08-004/R.18-03-011 requiring emergency customer support during and after a wildfire. The requirements are: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

D.18-08-004 also requires an electric utility to discontinue billing and prorate any monthly access charge or minimum charges to the customer after a wildfire. Additionally, when implementing support for low-income residential customers, D.18-08-004 also requires an IOU to contact all community outreach contractors and community-based organizations who assist in enrolling hard-to-reach low-income customers into the California Alternate Rates for Energy (CARE) bill discount program after a wildfire (or other listed emergency). The decision adopts a method for the utility to track its expenses related to the customer protections.

1.8.1. Liberty's Proposal - Support to Utility Customers During and After a Wildfire

Consistent with our determination in R.18-03-011, in the event the Governor of California declares a state of emergency because a disaster has either resulted in the loss or disruption of the delivery or receipt of utility service and/or resulted in the degradation of the quality of utility service, Liberty states it will implement the customer protections we established D.18-08-004, which are included in its Plan. Those protections include the following: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

Liberty states its Plan is in compliance with the above customer protections. Specifically, Liberty states it will support low-income customers by offering special payment arrangements resulting from a fire related outage. When issuing deposit waivers, Liberty will consider, on a case-by-case basis, waiving deposits for customers that have to rebuild due to a wildfire. Liberty states it will also consider on a case-by-case basis granting extended payment plans to those who suffered a tremendous loss as a result of a wildfire, and it will suspend billing adjustments until the customer receives power. Liberty also will suspend disconnection and nonpayment fees for wildfire impacted neighborhoods.

During emergencies, Liberty will expedite repair processing. Finally, if Liberty utility offices are not affected by fire, its operations will be available to assist with customer concerns. If its offices are affected by the fire, then it will address concerns and common questions through an open house.

1.8.2. Discussion - Support to Utility Customers During and After a Wildfire

We remind Liberty that the customer protections apply equally to both residential and small business customers. Under D.18-08-004, deposit waivers, extended payment plans, and suspension of disconnection and nonpayment fees are not granted on a case-by-case basis, but rather, they are entitlements to those who have been impacted by a disaster. In other words, Liberty does not have the discretion to provide these customer support programs, but rather must follow the mandates established in D.18-08-004.

Furthermore, when implementing support for low-income customers, Liberty is directed to comply with the directives contained in D.18-08-004. Specifically, under D.18-08-004, Liberty is required to contact all community outreach contractors and community-based organizations who assist in enrolling hard-to-reach low-income customers into CARE. Costs for implementation of the emergency customer protections shall be tracked in the Emergency Customer Protections Memorandum Account pursuant to D.18-08-004.

D.18-08-004 has adopted clear emergency customer protections that the utilities are mandated to comply with, but D.18-08-004 also stated that this Commission does not intend to discourage the utilities from doing more to assist customers in times of disaster. D.18-08-004 promulgated minimum customer protections to ensure continuity of support in times of crisis and to establish a baseline minimum response across the Commission's regulated entities. Indeed, we hope that when disaster strikes, the utilities contemplate additional support and actions to assist their customers.

1.9. Metrics, Monitoring and Reporting

SB 901 contains several provisions designed to ensure the Commission has tools to evaluate the effectiveness of an electrical corporation's WMP.

Public Utilities Code Sections 8386(c)(1), (4), (5) and (19) require an electrical corporation's plan to contain performance metrics and monitoring. This includes a description of the metrics to evaluate the performance of the plan and the assumptions that underlie the use of those metrics, how previously identified metrics have informed its current plan, and a discussion of the process and procedures to cure plan deficiencies.

1.9.1. Liberty's Proposal – Metrics, Monitoring and Reporting

Liberty states it has developed performance metrics to help it determine the effectiveness of its WMP and identify areas of improvement. Liberty's metrics, monitoring and reporting are comprised of two components: (1) roles and responsibilities; and (2) metrics reporting.

Liberty's WMP designates Liberty management and staff who will be responsible for implementing and assessing the strengths and weaknesses of the WMP. These designees are also responsible for managing the execution of the performance monitoring. Liberty states that this includes providing guidance to staff, leading the development of reports, and aggregating the data for each metric area.

Liberty proposes the following metrics to measure reduction of incidents: (1) number of utility-caused wildfires; (2) number of risk events; (3) number of replaced fuses; (4) length of bare wire covered annually; (5) number of recloser replacements added or upgrades made; (6) substation replacement; (7) weather station installation; (8) average time for clearance; (9) vegetation management; (10) number of customer service calls identified and confirmed with at-risk vegetation; and (11) number of PSPS events.

Liberty states it will monitor these elements of the WMP quarterly and report on the Plan's effectiveness on an annual basis. Liberty says that these quarterly reviews will engender discussion across staff and management, and provide updates to its leadership team. Liberty states it will engage with a Commission approved independent evaluator to assess its compliance with the Plan.

Liberty asserts that 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. Liberty notes that this is its first WMP and that past Plan metrics are not available to evaluate past performance.

1.9.2. Party Comments – Metrics, Monitoring and Reporting

Cal Advocates commented on this element of Liberty's WMP; its key concern can be summarized as follows:

- To ensure Liberty's operational resources are utilized to their full potential, before relying on additional contract personnel, Liberty should conduct a cost-benefit analysis to determine whether hiring additional staff is more cost-effective than contracting if these positions will be long-term in nature.

In response, Liberty states:

- Liberty will continue to assess its reliance on various resources, including contract resources, to perform activities throughout the year during implementation of Plan authorized projects and programs; and
- A cost-benefit analysis is not necessary, at this time.

1.9.3. Discussion – Metrics, Monitoring and Reporting

Liberty's WMP contains metrics, monitoring and reporting protocols as the statute requires. However, Liberty's next WMP should incorporate refinements by providing scope and targets for the proposed metrics. In its current form, Liberty's WMP does not provide such detail; while Liberty states that it will create targets for each metric based on industry standards and benchmarks, its discussion lacks adequate detail and meaning. Metrics should provide information about whether the implementation of Liberty's programs and strategies are effectively minimizing the risk of catastrophic wildfire posed by the utility's electrical lines and equipment. The metrics contained in Liberty's current Plan are not adequate for determining that wildfire risk has been effectively minimized. The guidance decision the Commission issues concurrently with this decision directs all IOUs, including Liberty, to gather data, submit reports and otherwise track its wildfire mitigation in a meaningful way.

In its next WMP, Liberty must include a timeline and scope of activities for monitoring the implementation of the programs and strategies contained within this plan. Liberty must also provide the Commission with a comparison of its Plan activities to its GO 166 Fire Prevention Plan. Finally, Liberty is to track and annually report ignition data in accordance with D.14-02-015.

1.10. Should Liberty's 2019 WMP be Approved?

We find that Liberty's WMP contains the required statutory elements in Public Utilities Code Section 8386(c). However, we impose reporting, data gathering and similar requirements this cycle, and direct Liberty to include additional information in its next WMP, as discussed in previous sections and provided in the guidance decision concurrently issued in this proceeding.

1.11. Future WMPs

The expedited nature of the WMP approval process caused many parties concern. We have learned a great deal about improvements that can be made in future plans. To that end, we order all respondent IOUs in this proceeding to file and serve reports and conduct other follow up. The reporting requirements and recommendations for 2020 involve devising better metrics to measure mitigation effectiveness; creating databases and data sets for future analysis; and working with experts in the field, including those who were involved in the Wildfire Technology Summit sponsored by the Commission and several other agencies on March 20-21, 2019. Specifically, Liberty's next WMP shall include the following additional discussion:

- *Inspection and Maintenance*: Liberty shall provide a robust discussion and analysis of its proposed Forest Resiliency Corridor.
- *Vegetation Management*: Liberty shall provide a robust discussion and analysis of its vegetation management implementation and compliance with CAL FIRE guidelines.
- *Situational Awareness*: Liberty shall provide an analysis of additional, situational awareness technologies that could enhance its wildfire mitigation strategy.
- *Emergency Preparedness and Response*: Liberty shall include a discussion of whether its emergency preparedness, outreach and response program needs any communication enhancements or improvement to achieve optimal, key stakeholder engagement.
- *Utility Customer Support*: Liberty shall document that it complied in administering all of the customer entitlements promulgated from R.18-03-011 in its next plan.
- *Metrics, Monitoring and Reporting*: Liberty shall provide scope and targets for implementing its WMP as well as a

timeline and scope of activities for monitoring the plan's implementation.

2. Bear Valley Electric Service

2.1. Overview of BVES' WMP

With the exception of its proposal to acquire sub-transmission lines from Southern California Edison (SCE), BVES' WMP Plan contains the required elements listed in the provision of SB 901 related to our review, Public Utilities Code Section 8386(c), and is approved in this decision.

The programs that will take the greatest amount of time and effort in BVES' WMP involve vegetation management, system hardening, and inspections. Cal Advocates, OSA, and Small Business Utility Advocates (SBUA) filed comments on BVES' WMP.

2.2. Inspection and Maintenance

SB 901 contains several provisions related to an electrical corporation's inspection and maintenance. Public Utilities Code Section 8386(c)(9) requires an electrical corporation's WMP to contain a description of its plans for inspection and maintenance of the electrical corporation's electric infrastructure. Inspection and maintenance includes conducting system patrols, using technological inspection tools, managing maintenance, and conducting vegetation inspections and management. These activities play an important role in wildfire mitigation. BVES' inspection and maintenance plan is discussed below.

2.2.1. BVES' Proposed Inspection and Maintenance Program

BVES' WMP proposes new inspection procedures that are consistent with standards currently required by the Commission in its GOs and related rules. The BVES system inspection and maintenance plan includes several components, including: (1) ground inspections; (2) predictive maintenance; (3) electrical

preventative maintenance; (4) Light Detection and Ranging (LiDAR) inspection; and (5) GIS data collection and sharing. Among other inspection and maintenance activities, BVES has established an overhead inspection facilities program and conducts visual patrol inspection to identify structural problems and hazards.

Furthermore, BVES has a maintenance program that identifies locations in the overhead system that are at-risk of failure using infrared sensors. It also has an electrical preventative maintenance program to asses equipment assets at substation locations. BVES proposes to conduct LiDAR inspections and analysis that uses a laser system and software to survey the overhead sub-transmission and distribution systems to determine adequate vegetation-conductor clearances.

2.2.2. Parties' Comments - Inspection and Maintenance

OSA filed comments on BVES' inspection and maintenance plan. OSA summarizes its key concerns as follows:

> Considering the effects of climate change and the extreme weather conditions that are part of the new normal in California, OSA recommends that Bear Valley Utilities investigate the unique topography within their service territory. Specifically, within the Tier 2 & Tier 3 high fire risk areas that includes mountain ridges, canyons and other topographical features that create extreme wind corridors. Then utilize this information to develop targeted, enhanced inspections and determine if structural improvements are necessary for their most vulnerable distribution and transmission assets. These inspections and considerations should be given to both overhead distribution facilities and transmission facilities.

In its reply, BVES states that it agrees with OSA's recommendation.

2.2.3. Discussion – Inspection and Maintenance

BVES' WMP incorporates an inspection and maintenance program, as required for its WMP. In its next WMP, we direct BVES to identify all data elements that are collected through each inspection program and discuss how that data is used in utility models, programs, or applications. We also direct BVES to track the number of elevated fire danger days, with indicators from NFDRS or RFW, along with the number and types of potential ignition events. This information is imperative to understand and properly analyze the risk of catastrophic wildfires caused by electrical lines and equipment.

2.3. System Hardening

SB 901 contains several provisions related to an electrical corporation's system hardening. System hardening encompasses practices that relate to system infrastructure or design. This includes design and technical upgrades to substations, poles, wires, or other structures. Public Utilities Code Section 8386(c)(12) requires an electrical corporation's WMP to contain a description of the actions it will take to ensure its system will achieve the highest level of safety, reliability, and resiliency. This section also requires each electrical corporation to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design standards, equipment, and facilities such as undergrounding, insulation of distribution wires, and pole replacement. BVES' system hardening plan is discussed below.

2.3.1. BVES' Proposed System Hardening Program

BVES's system hardening activities include several design and construction proposals. BVES proposes a pilot program to determine the

effectiveness of using covered conductors by replacing three circuit miles of bare overhead conductors in a high fire threat area. Additionally, BVES proposes to conduct a pilot program to determine whether the use of a wire wrap to cover existing wire in high fire threat areas mitigates the risk of catastrophic wildfires. These wraps will snap onto existing wires so BVES would not need to replace the entire wire. Based on the results of the pilot, BVES states it will consider implementing the wrap on the remainder of bare primary lines in the system. BVES plans to wrap approximately three miles of overhead distribution lines for this pilot project. Finally, BVES plans to replace bare wire with a high-performance covered conductor on its Radford 34.5 Kilovolt (kV) line. BVES states this line has the highest risk of wildfires out of all of BVES' overhead facilities because the line is located in a densely vegetated area that is difficult to patrol. BVES states that replacing the line completely will provide the greatest protection.

The utility intends to execute both the covered conductor pilot programs and the Radford covered conductor replacement project during the compliance period of this WMP. BVES also states that it will implement safety and technical upgrades of its Pineknot Substation by replacing all substation equipment with enclosed pad mount transformers, voltage regulators, re-closers, and bus work.

BVES proposes additional equipment design upgrades, including proposals to replace conventional fuses with current limiting fuses, conducting tree attachment removal, and remediating noncompliant distribution poles that pose a fire risk. For example, BVES has over 1,200 existing tree attachments on 16 distribution circuits. BVES states it has begun removing its tree attachments and plans to continue to remove 240 more attachments each year. The utility asserts that all tree attachments will be removed by 2022. In reference to pole

remediation, BVES states it plans to evaluate approximately 8,000 wood poles in its service area and replace or remediate those poles that fail inspection. Finally, BVES states it will explore the feasibility of implementing alternative technologies to help mitigate fire risks, such as use of wire-breaking sensing technology.

In addition, BVES proposes purchasing SCE's Ute Lines (34.5kV) for $3.2 million. This asset consists of approximately 1.5 miles of bare overhead sub-transmission lines that connect the BVES system at two points with the SCE Goldhill Switch Station. These lines provide roughly 72 percent of supply capacity and under normal conditions, 100 percent of BVES' supply loads. BVES states it would convert the assets from an overhead system located in a forested area to underground facilities alongside a county road.

BVES claims that these overhead lines present a wildfire risk because they hang over a forested area, and asserts that this transfer, removal, and undergrounding will result in enhanced system safety, wildfire risk mitigation, and reliability. BVES seeks approval for this project in this proceeding.

While cost is not at issue in this decision, it is worth noting that the labor and equipment intensive nature of the conductor covering proposals are one of the most expensive items in the WMP. BVES estimates it will cost $458,000 for its covered conductor replacement pilot program; $292,000 for its covered conductor wrap pilot program; and $2.5 million for its Radford Line Covered Conductor Replacement Project. Finally, BVES estimates the transfer and undergrounding of the SCE Ute Lines will cost $3.2 million. BVES requests that the Commission authorize it to establish a memorandum account to track and recover the expenses related to these proposed covered wire projects.

2.3.2. Parties' Comments – System Hardening

Cal Advocates filed comments on BVES' system hardening plan. Cal Advocates' key concerns can be summarized as follows:

- BVES does not provide sufficient information to justify undergrounding the Ute Lines to reduce wildfire risk;
- BVES does not explain why it did not identify undergrounding the Ute Lines in its General Rate Case (GRC) application, Application (A.) 17-05-004; and
- BVES does not include any data or testing information on how effectively its proposed fusing changes, electronic programmable fused trip savers, and new fuses will reduce wildfire risk.

In response, BVES states:

- The undergrounding and transfer of the Ute Lines had not been developed at the time of its most recent GRC application, A.17-05-004;
- The proposed Ute Project potentially provides a number of benefits;
- BVES' proposed fusing project had not been developed on the scale proposed in its Plan at the time of its GRC application;
- Conventional fuses pose a fire risk; and
- Excluding projects and programs that would mitigate wildfires just because they were not included in the GRC is not a sound technical basis for evaluating wildfire mitigation measures, and the Commission should not use this as the basis for evaluating the Plan's projects, programs, or other mitigations.

2.3.3. Discussion – System Hardening

System hardening encompasses practices that relate to system infrastructure or design. This includes design and technical upgrades to substations, poles, wires, or other structures. BVES' WMP contains system

hardening elements as required by SB 901. At this time, we do not approve the proposed transfer and acquisition of the Ute Lines from SCE; a WMP is not the appropriate venue in which to evaluate a transfer of control proposal, which must be reviewed through a separate formal application process. BVES is directed to file a separate application requesting Commission permission and authority to acquire the Ute Lines from SCE. We do not approve the Ute Line transfer and acquisition as part of its Plan approval.

We direct BVES to track and annually report its wire-down events and fault data. BVES shall include the following data in this report: (1) date and time; (2) location information with latitude and longitude coordinates, pole numbers, and locations in the HFTD; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current. In all future ignition report filings, we direct BVES to include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

2.4. Operational Practices Plan

BVES' WMP includes a discussion of its operational practices. We discuss those practices in this section.

2.4.1. BVES Operational Practices Plan

BVES states its operational practices encompass standard company procedures that relate to wildfires, special work procedures, and wildfire infrastructure protection definition.

BVES states it calibrates its operational considerations and special work considerations using a seasonal approach and information gathered from the

NFDRS. BVES describes that from November 1 through March 31, the company focuses on safety and reliability, operating with higher load settings to accommodate higher demand due to colder temperatures and with reclosers set to automatic. BVES further describes that during the non-winter months (April 1 through October 31), BVES adopts a more "defensive" operational scheme. Standard procedures during this period include: (1) all fuse TripSavers are set to not "reclose"; (2) auto-recloser field trip settings are adjusted for summer load; and (3) the Radford 34.5kV line is de-energized. According to BVES, the company may take additional operational actions based on specific NFDRS forecasts. For example, BVES states that if the NFDRS forecasts issues a brown, orange, or red warning, then its circuit recloser settings will be set to non-automatic, its patrol following a circuit outage will be performed, its TripSavers will be set to non-automatic, and proactive de-energization will occur during an orange or red warning with wind gusts greater than 55 miles per hour (mph).

In addition, BVES intends to install Supervisory Control and Data Acquisition (SCADA). BVES asserts that SCADA will allow for remote monitoring, operation, and control of its entire system. Once implemented, BVES asserts that SCADA will help control its automatic reclosers fast-curve settings, and "IntelliRupters" remotely. Notwithstanding its intent to install SCADA, BVES states it also plans to install IntelliRupters Pulse Control Fault Interrupter across its system. BVES argues that this technology will provide the settings necessary to reduce electrical ignition while also helping to mitigate power outages and equipment damage by using low energy pulses for fault tests.

Finally, BVES states it has a dedicated Wildfire Infrastructure Protection Team (WIPT). According to BVES, the WIPT will work with its Emergency Response Team to direct field activities and operations during a disaster. BVES

also will rely on emergency reports from third parties to inform it of additional fire risk.

2.4.2. Parties' Comments – Operational Practices

OSA's key concerns can be summarized as follows:

- BVES did not discuss wildlife caused faults nor did BVES discuss incident fault data due to animal or bird caused faults;[1]
- BVES should investigate mitigation solutions that address animal or bird caused faults for both their electrical distribution facilities and their transmission facilities; [2]
- BVES should develop a wildlife facilities protection plan for its distribution facilities and transmission facilities located in Tiers 2 and 3 of its High-Fire Threat Danger Map;
- BVES did not include an evacuation plan, and such a plan is needed.

In response, BVES states:

- Evacuation planning is primarily the responsibility of local government and emergency responders, and the utility stands ready to support any local government or emergency responder planning initiatives, including a traffic simulation and evacuation study; and
- BVES agrees with OSA that a wildlife protection program and wildlife caused faults are important issues but were not among the top risk drivers when preparing this WMP.

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[1] OSA on WMPs, filed March 13, 2019, at 23. Citations to party comments contain the filer's abbreviated name and the page reference. Intervenor comments were all filed on March 13, 2019, and electrical corporation reply comments filed on March 22, 2019. Citations to WMPs contain the title "[Utility]'s Plan" and the page reference.

[2] *Id*. at 24.

2.4.3. Discussion – Operational Practices

It is reasonable for BVES to investigate whether animal incidents could trigger a wildfire ignition in its next WMP, as OSA suggests. We direct BVES to conduct further analysis to determine whether any animal or avian mitigation program would be appropriate and necessary as part of a wildfire mitigation strategy. Finally, should the local government conduct a traffic simulation or evacuation plan, BVES is directed to collaborate as appropriate.

2.5. Vegetation Management Plan

SB 901, as codified in Public Utilities Code Section 8386(c)(8), requires an electrical corporation's WMP to contain a description of its plans for vegetation management. BVES' vegetation management plan is discussed below.

2.5.1. BVES' Proposed Vegetation Management Program

BVES states its vegetation inspection and management plan contains an array of components that were developed in collaboration with the City of Big Bear Lake, local Fire Departments, and the United States Forest Service (USFS). This collaboration resulted in the following vegetation management elements: (1) preventative vegetation management, which ensures that BVES overhead sub-transmission and distribution lines adhere to clearance specifications; (2) corrective vegetation clearance, which consists of completing correcting and emergent vegetation orders to fix clearance discrepancies; and (3) emergency vegetation clearance, which consists of mobilizing the utility or its third-party contractor workforce to clear vegetation immediately.

2.5.2. Discussion – Vegetation Management[3]

BVES' WMP contains a vegetation management plan, which we approve. In its next plan, BVES should provide granular detail about how its LiDAR technology will help the utility identify trees that could potentially come into contact with conductors during high winds.

BVES shall also provide permitting agencies geospatial facility information as part of its Plan. This should include, but not be limited to, the following: (1) above and below ground conductors; (2) voltage levels; (3) exempt/non-exempt hardware; (4) pole locations; and (5) underlying base maps that include parcel boundaries within the limits of planned vegetation management work.

2.6. De-Energization

2.6.1. OIR on De-Energization

SB 901 contains several provisions related to an electrical corporation's de-energization plans. Public Utilities Code Sections 8386(c)(6) and (7) require an electrical corporation's plan to contain a description of a de-energization/PSPS program to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires.

The Commission is examining de-energization in depth in R.18-12-005, given the significant interest in the topic by communities affected by wildfire, cities, counties, first responders, persons with disabilities and medical conditions and others. In the scoping memo in this proceeding, we explained that in reviewing electrical corporations' de-energization protocols in this decision, we would consider whether the protocols comply with Resolution ESRB-8. To the

[3] No party commented on BVES' Plan in this regard.

extent the Commission authorizes new requirements in R.18-12-005, those requirements will automatically apply once adopted. Thus, de-energization is on the list of items that WMPs must cover, and accordingly will be addressed in this proceeding as one element of the plans, but the subject requires more in-depth consideration than it can receive in this proceeding.

Resolution ESRB-8 applies the de-energization, notification and mitigation requirements of D.12-04-024 (which was at the time applicable only to SDG&E) to all electric IOUs. The Resolution requires additional coordination, communication and public outreach measures to increase public awareness of potential de-energization events.

2.6.2. BVES' Proposal – De-Energization

BVES states its PSPS program is consistent with the Resolution. BVES has identified seven sections of "at-risk" areas based on type of distribution facilities (overhead bare conductions, high voltage, etc.), tree and vegetation density, available dry fuel, and other factors that make certain locations vulnerable to wildfire risk. The at-risk areas are: (1) North Shore; (2) Erwin; (3) Boulder; (4) Lagonita; (5) Club View; (6) Goldmine; and (7) Radford. BVES lists an array of planned actions for these high-risk areas during a PSPS event. BVES states PSPS actions are triggered by: (a) forecasted extreme fire weather conditions; (b) imminent extreme fire weather conditions; (c) validated extreme fire weather conditions; and (d) re-energization when weather subsides to safe levels.

When PSPS is deemed necessary, BVES states its crews will manually shut off at-risk circuits, lines, and other infrastructure. In the future, as it implements SCADA and other technologies, BVES asserts that it will consider remote shut-off implementation. BVES states that it has worked closely and will continue to work closely with local stakeholders that own or operate critical facilities,

including hospitals and police and fire departments, to ensure their facilities remain operational and/or they have back-up plans in PSPS situations. Additionally, BVES states it will update its PSPS plan in accordance with R.18-12-005.

2.6.3. Party Comments – De-Energization

Cal Advocates' key concerns can be summarized as follows:

- BVES' PSPS procedures could be improved to ensure customers are given adequate notification of possible de-energization events;
- BVES should amend its PSPS procedures or explain why it is not reasonable to include interactive voice response system notifications to all customers that may be affected by a PSPS; and
- The BVES PSPS plan does not mention if notifications will be available in Spanish or the top three primary languages in the state other than Spanish or English.

OSA's key concerns can be summarized as follows:

- BVES' PSPS protocols should provide more specificity as to which specific customers will be notified; and
- BVES should update internal procedures to ensure stakeholders are given as much notification as possible.

In response, BVES states:

- BVES agrees with OSA that its Plan should provide more specificity and notification about its PSPS protocols.

2.6.4. Discussion – De-Energization

BVES' WMP contains de-energization procedures, as required by Public Utilities Code Sections 8386(c)(6) and (7). Cal Advocates' and OSA's comments raise issues that are within the scope of the issues in our de-energization proceeding, R.18-12-005, so we defer to the decision there to resolve the issues.

2.7. Situational Awareness and Alternative Technologies

While no provision of SB 901 expressly calls for use of situational awareness technology, it is an essential part of wildfire mitigation.[4] As codified in Public Utilities Code Section 8386(c)(3), SB 901 requires an electrical corporation's Plan to include a description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks. We interpret this provision to require a description of a situational awareness program to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risk. BVES' situational awareness plan is discussed below.

2.7.1. BVES' Proposal – Situational Awareness and Alternative Technologies

BVES outlined resources they state will contribute to its information base and facilitate information sharing to further its situational and conditional awareness program. BVES has categorized its situational awareness plan into two parts: (1) operations; and (2) programs.

BVES' situational operations plan includes: (1) obtaining information from devices and sensors on actual and forecasted weather; and (2) consulting online feeds and websites such as the NFRDS. Additionally, BVES states that during 2019 and 2020, it will implement technologies to further enhance its situational awareness monitoring. BVES states that it will use web-based weather resources, BVES' owned weather stations, weather forecasting, distribution system SCADA,

[4] Public Utilities Code Sections 8386(c)(3), (10) and (12) concern elements of situational awareness.

grid automation, and GIS based applications like an Outage Monitoring System. BVES states it is also considering the installation of remote monitoring via cameras.

2.7.2. Party Comments – Situational Awareness and Alternative Technologies

Cal Advocates' key concern is:

- BVES should conduct a cost-benefit analysis that compares hiring additional staff versus hiring contractors, particularly if the utility finds its enhanced situational awareness program is valuable in reducing risk or enhancing safety.

In response, BVES states:

- BVES plans to contract out about eight hours per week of weather forecasting services.

2.7.3. Discussion – Situational Awareness and Alternative Technologies

Situational awareness should help facilitate collaborative planning, assist in achieving a shared understanding of actual conditions, and improve decision-making in particular for wildfire mitigation. BVES WMP includes situational awareness strategies and alternative technologies.

In its next plan, we direct BVES to explore the use of DFA technology, which was discussed at the recent Wildfire Technology Innovation Summit, which the Commission and other agencies held March 20-21, 2019. This technology may provide the utility with a proactive regime to detect and identify potential ignition sources before they occur.

We believe Cal Advocates' concern about whether to hire additional staff rather than contractors is worthwhile to consider. In its next Plan, we direct BVES to conduct a cost-benefit analysis to determine whether additional staff will enhance its situational awareness program rather than utilizing contractors.

Additionally, should BVES pursue the installation of cameras across its service territory, it should consider partnering with government agencies like CAL FIRE to ensure optimal siting of the cameras and information sharing.

2.8. Emergency Preparedness, Outreach and Response

SB 901 contains several provisions related to an electrical corporation's emergency preparedness, response and communications before, during and after a wildfire.

Public Utilities Code Sections 8386(c)(13),(16),(17) and 768.6 require a WMP to contain emergency preparedness and response plans that comply with mandates involving communications with cities and counties, preparation for and restoration of service after a wildfire, and public outreach. Specifically, the statute requires the WMP sponsor to share its emergency preparedness and response plans with relevant cities and counties to provide input and feedback, and update and improve the plans at least every two years. It also requires the WMP to list persons responsible for plan execution, establish procedures for notifying impacted customers, establish protocols for restoration of service, and create a workforce mobilization plan for its employees before and after a wildfire. The statute mandates that a WMP include a plan for community outreach and public awareness before, during, and after a wildfire in an array of languages including English, Spanish, and the top three languages in California as determined by United States census data. We discuss BVES' compliance with these requirements below.

2.8.1. BVES' Emergency Preparedness, Outreach and Response Plan

BVES' emergency preparedness plan includes protocols for conducting and coordinating emergency response drills and exercises with emergency

responders, regulatory agencies, and stakeholders, operating according to PSPS guidelines, and following procedures for operation distribution lines in affected areas. BVES states it will communicate with the following key stakeholders to ensure they are adequately prepared to respond to a disaster: (1) all classes of customers receiving electricity service from BVES; (2) an array of local governments and agencies including local hospitals, school districts, water department, airport district, CAL FIRE, and other law enforcement and government agencies; and (3) its partners in its Mountain Mutual Aid Association (MMAA).

Additionally, BVES states its customer outreach and notifications will educate and prepare customers for fire prevention and emergency management through communications before, during, and after emergencies. BVES states it will also establish two-way communications between local governments and agencies before, during, and after an emergency to brief, plan, and coordinate a response to the emergency. Finally, BVES provides details of how it will engage with its counterparts in its MMAA before, during, and after emergencies to prepare for emergencies, disseminate information to customers, and coordinate a response.

2.8.2. Party Comments – Emergency Preparedness, Outreach and Response

Parties did not comment on the emergency preparedness, outreach, and response strategies BVES included in its Plan.

2.8.3. Discussion – Emergency Preparedness, Outreach and Response

Generally, BVES' WMP contains an Emergency Preparedness, Outreach and Response Plan, as required by Public Utilities Code Section 8386(c)(16)(A) and (B), which specifies how the utility will conduct customer outreach and

notifications to prepare customers before, during, and after a wildfire. BVES' Plan contains a robust list of stakeholders with whom it will actively engage to improve resilience while grappling with the severity of a wildfire disaster. In its next WMP, BVES should discuss the strengths and weaknesses of its emergency preparedness, outreach, and response program as it engages with stakeholders during this upcoming fire season.

However, BVES is required to communicate its WMP's emergency preparedness outreach and response in specific languages. BVES' WMP does not comply with this requirement.

Specifically, Public Utilities Code Section 8386(c)(16)(B) mandates that BVES' plan for community outreach and public awareness before, during, and after a wildfire be communicated in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the Commission based on the United States Census data. Taking official notice of United States Census data pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure, the Commission determines that the following languages are the three most common languages used in the state other than English or Spanish: Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese. In addition to those languages, BVES shall provide outreach in Korean and Russian where those languages are prevalent in its service territory. BVES shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in the above languages.

2.9. Support to Utility Customers During and After a Wildfire

Public Utilities Code Section 8386(c)(18) requires a WMP to comply with the requirements we adopted in D.18-08-004 for customer support during and

after a wildfire. The requirements are: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

D.18-08-004 also requires an electric utility to discontinue billing and prorate any monthly access charge or minimum charges to the customer after a wildfire. Additionally, when implementing support for low-income residential customers, D.18-08-004 also requires an IOU to contact all community outreach contractors and community-based organizations who assist in enrolling hard-to-reach low-income customers into the CARE bill discount program after a wildfire (or other listed emergency). The decision adopts a method for the utility to track its expenses related to the customer protections. BVES' compliance with these requirements is discussed below.

2.9.1. BVES' Proposal - Support to Utility Customers During and After a Wildfire

Consistent with our determination in R.18-03-011, in the event the Governor of California declares a state of emergency because a disaster has either resulted in the loss or disruption of the delivery or receipt of utility service and/or resulted in the degradation of the quality of utility service, BVES states it will implement the customer protections we established in D.18-08-004, which are included in its Plan. Those protections include the following: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) emergency communications.

BVES states its WMP is in compliance with the above customer protections. Specifically, BVES states it will support low-income customers by freezing accounts and stopping billing during the wildfire event to ensure bills are not estimated or generated for affected customers. When issuing deposit waivers, BVES states it will add a designated customer contact for all affected customers which will allow the utility to easily track the customer's account, so when service is re-established, the utility will know to waive any associated fees and to expedite customer re-connection. BVES states it will freeze all payments on affected customers' accounts to avoid adversely affecting their credit. BVES states all affected customers' will be notified that an extended payment plan option is available for any past due payments.

BVES will not charge disconnection and nonpayment fees generated during the wildfire event. Once the emergency ends, BVES explains that it will "close" all affected customer cases. This will automatically transition the customers' accounts back to the normal state. BVES describes that it will simultaneously begin assisting with service restoration and deposit waivers.

During emergencies, BVES asserts it will set up specialized repair teams to expedite repair processing. If additional support is needed, BVES will leverage mutual aid programs with other emergency response resources and will work with electrical contractors to ensure timely service restoration. Finally, BVES maintains that it will arrange for connections and facilitate expedited services and handle thousands of phone calls simultaneously and divert customers to the appropriate utility representative.

2.9.2. Party Comments - Support to Utility Customers During and After a Wildfire

SBUA's key concerns can be summarized as follows:

- BVES' WMP is missing comparable financial support plans to assist small business customers.

In response, BVES states:

- SBUA's concern is unfounded because, pursuant to D.18-08-004, all customers of IOUs are given customer support during disasters.

2.9.3. Discussion - Support to Utility Customers During and After a Wildfire

BVES' WMP contains a customer support plan for during and after a wildfire, consistent with D.18-08-004. BVES is reminded that under D.18-08-004, when a customer has been affected by a disaster, it is also required to discontinue billing and prorate any monthly access charge or minimum charges to the customer. Furthermore, when implementing support for low-income residential customers, BVES is required to contact all community outreach contractors and community-based organizations who assist in enrolling hard-to-reach low-income customers into CARE.

Costs for implementation of the emergency customer protections shall be tracked in the Emergency Customer Protections Memorandum Account pursuant to D.18-08-004.

D.18-08-004 has adopted clear emergency customer protections that the utilities are mandated to comply with. D.18-08-004 stated that the Commission does not intend to discourage the utilities from doing more to assist customers in times of disaster. D.18-08-004 promulgated minimum customer protections to ensure continuity of support in times of crisis and to establish a baseline minimum response across the Commission's regulated entities. Indeed, we hope that when disaster strikes, the utilities contemplate additional support to their customers.

2.10. Metrics, Monitoring and Reporting

SB 901 contains several provisions designed to ensure the Commission has tools to evaluate the effectiveness of an electrical corporation's WMP. Public Utilities Code Sections 8386(c)(1), (4), (5) and (19) require an electrical corporation's plan for performance metrics and monitoring. This includes a description of the metrics to evaluate the performance of the plan and the assumptions that underlie the use of those metrics, how previously identified metrics have informed its current plan, and a discussion of the process and procedures to cure plan deficiencies.

This section discusses the proposed metrics, monitoring and reporting contained in BVES' WMP. In the guidance decision, we set forth additional reporting and follow-up requirements for all IOUs.

2.10.1. BVES' Proposal – Metrics, Monitoring and Reporting

BVES has identified the following areas in which it plans to assess the effectiveness of its WMP: (1) overall plan; (2) infrastructure; (3) operations; (4) customer service; (5) weather conditions; and (6) de-energization. The metrics to assess the effectiveness of its infrastructure wildfire mitigation program include: (a) number of bare line contacts with vegetation; (b) number of live wire down events; (c) number of conventional blown fuse events; (d) number of fallen, replaced, or remediated poles; (e) number of tree attachments removed annually; (f) the length of bare wire covered annually; and (g) the number of conventional fuses replaced by current limiting fuses.

BVES states it will monitor and audit the effectiveness of the WMP at regularly scheduled management meetings, its staff will evaluate the WMP by identifying and correcting deficiencies in the WMP and it will monitor and audit the effectiveness of equipment and line inspections within the first six months of

the WMP. The utility states an assigned third-party auditor will review records for the inspection programs and interview staff performing inspections to assess their knowledge of the inspection programs and monitor staff performing inspection activities. Additionally, BVES maintains that the third-party auditor will review deficiencies noted in the programs, identify systemic issues or problems, note the timeliness of corrective actions, pick a random sample of some completed corrective actions to verify the effectiveness of those actions, and issue a written report of findings.

2.10.2. Party Comments – Metrics, Monitoring and Reporting

SBUA commented on this element of BVES' WMP. SBUA's key concerns can be summarized as follows:

- BVES does not give the name of the director who administers its WMP.

BVES' response can be summarized as follows:

- BVES has chosen not to include names as staff changes during the normal course of business while responsibilities do not change as often.

2.10.3. Discussion – Metrics, Monitoring and Reporting

BVES' WMP contains metrics, monitoring and reporting protocols as the statute requires. In its next WMP, BVES shall refine its metrics, monitoring, and performance protocols to include: (1) the number of faults and ignitions caused on dry days; (2) tracking of time to repair infrastructure from time of identified issue to completion; (3) tracking of the number of faults, wires-down and ignition by circuit and correlate that information to the number of line splices and age of the conductor, or other relevant causal factors; and (4) determination of whether it is reasonable to initiate a tree reliability or hazard inventory and

rate the trees by relative risk. To be clear, metrics provided in the WMPs should inform whether the implementation of BVES' programs and strategies proposed are effectively minimizing the risk of catastrophic wildfire posed by the utility's electrical lines and equipment. The metrics contained in BVES' current WMP are not adequate to determine whether wildfire risk has been effectively mitigated. We direct BVES to track and annually report ignition data, in accordance with D.14-02-015.

2.11. Future WMPs

The expedited nature of the WMP approval process caused many parties concern. We have learned a great deal about improvements that can be made in future plans. To that end, we order all respondent IOUs in this proceeding to file and serve reports and conduct other follow up. Our aim is for next year's WMP process to start this year. The reporting requirements and recommendations for 2020 involve devising better metrics to measure mitigation effectiveness; creating databases and data sets for future analysis; working with experts in the field, including those who were involved in the Wildfire Technology Summit sponsored by the Commission and several other agencies on March 20-21, 2019.

- *Inspection and Maintenance*: BVES shall include a discussion of what, if any, structural improvements should be made to any vulnerable distribution and transmission assets.
- *Vegetation Management*: BVES shall include granular detail about how its LIDAR technology will help it identify trees that could potentially come into contact with conductors and how it has coordinated with Cal FIRE to remove trees from non-federal lands.
- *Situational Awareness*: BVES shall include a cost-benefit analysis of whether hiring additional staff over contractors is more cost-effective.

- *Emergency Preparedness and Response*: BVES shall include a discussion of whether its emergency preparedness, outreach and response program needs any communication enhancements or improvement to achieve optimal, key stakeholder engagement.
- *Metrics, Monitoring and Reporting*: In its next Plan, BVES shall refine its metrics, monitoring, and performance protocols to include: (1) the number of faults and ignitions caused on dry days; (2) tracking of time to repair infrastructure from time of identified issue to completion; (3) tracking the number of faults, wires-down and ignition by circuit and correlate that information to the number of line splices and age of the conductor, or other relevant causal factors; and (4) determination of whether it is reasonable to initiate a tree reliability or hazard inventory and rate the trees by relative risk.

2.12. Should BVES' 2019 Wildfire Mitigation Plan be Approved?

We find that BVES' WMP contains the required statutory elements in Public Utilities Code Section 8386(c). As stated, we expect BVES' next WMP to conform to our requirements stated in the Future WMP section of this decision.

3. Pacific Power, a division of PacifiCorp

3.1. Overview of PacifiCorp's WMP

With one exception discussed in Section 3.5 below, PacifiCorp's WMP contains the required elements set forth in SB 901. To aid readers, attached as Appendix B to this decision is a table that cross references each item in SB 901's list of required WMP elements against the WMP template required in the assigned ALJ's January 17, 2019 ruling. We discuss certain SB 901 elements in response to party comments.

Three parties – OSA, Cal Advocates, and SBUA – commented specifically on PacifiCorp's WMP. The key areas of party comments focus on overall strategy, system hardening, public safety power shutoff and associated

emergency response protocols. We discuss PacifiCorp's proposal and parties' comments on each below.

3.2. Overall Wildfire Safety Strategy

3.2.1. PacifiCorp's Proposed Wildfire Safety Strategy

Section II of PacifiCorp's WMP identifies and describes the company's planned preventive strategies and corresponding programs to minimize the risk that its electric distribution and transmission infrastructure may cause wildfires, including the impact of climate change on its infrastructure. PacifiCorp's programs focus on the general areas of asset hardening, situational awareness, operations response and vegetation management.

3.2.2. Parties' Comments – Overall Wildfire Safety Strategy

OSA suggests PacifiCorp's overall strategy does not sufficiently account for climatological risks, specifically of the potential for high-wind corridors in its service territory. OSA references an Associated Press report of a 199-mph wind gust at the Alpine Meadows ski resort in February 2017 to suggest PacifiCorp should investigate the risk of a high-wind corridor within high fire threat areas of its service territory. OSA recommends PacifiCorp use the results of this investigation to develop targeted enhanced inspections to determine if structural improvements are necessary for the company's most vulnerable distribution and transmission assets.

In reply comments, PacifiCorp notes its proposal to install local weather monitoring points to better identify weather conditions, including wind, before or early in the 2019 wildfire season. PacifiCorp cautions, however, against relying on "extreme data points" as standard cases for planning purposes.

3.2.3. Discussion – Overall Wildfire Safety Strategy

The Plan's discussion of the risks imposed by climate change is not as robust as it could be; in addition to standard cases, PacifiCorp should consider non-standard cases, the likelihood of which may increase as a result of climate change. We expect PacifiCorp to include a more comprehensive discussion of how the company accounts for climate change-related risks in its next WMP. As part of such consideration we encourage the company to investigate the risk (whatever the likelihood may be) of high-wind corridors leading to a catastrophic wildfire in its service territory, as suggested by OSA.

3.3. System Hardening

3.3.1. PacifiCorp's Proposed System Hardening Program

PacifiCorp's WMP proposes system hardening measures that include: installing spacer cable[5] in Tier 3 areas (and all circuits electrically connected to Tier 3 areas);[6] replacing small diameter copper and iron conductors with aluminum stranded conductors; replacing wooden poles with steel structures

[5] A spacer cable system is an aerial wire system that holds multiple covered conductors in close proximity, by insulating spacers from a high strength messenger.

[6] D.17-12-024 adopted a Fire-Threat Map and new fire-safety regulations that would apply to areas depending on their tier designation (*i.e.*, Zone 1, Tier 2 or Tier 3) in the Fire-Threat Map. Zone 1 consists of Tier 1 High Hazard Zones (HHZs) on the map of Tree Mortality HHZs prepared jointly by USFS and CAL FIRE. Tier 1 HHZs are in direct proximity to communities, roads, and utility lines, and represent a direct threat to public safety. Tier 2 consists of areas where there is an elevated risk (including likelihood and potential impacts on people and property) from wildfires associated with overhead utility power lines or overhead utility power-line facilities also supporting communication facilities. Tier 3 consists of areas where there is an extreme risk; Tier 3 is distinguished from Tier 2 by having the highest likelihood of utility-associated fire initiation and growth that would impact people or property, and where the most restrictive utility regulations are necessary to reduce utility fire risk. (*See* D.17-12-024, at 9.)

(initially in locations likely to experience more substantial impact loads);[7] and using devices on PacifiCorp's transmission and distribution lines with data from PacifiCorp's SCADA system to change protection and reclosing settings in times of elevated fire risk.

3.3.2. Parties' Comments – System Hardening

OSA and Cal Advocates identify issues and recommend modifications to PacifiCorp's WMP with respect to system hardening. They focus on small conductors, reclosers, wood-to-steel pole replacements, the schedule PacifiCorp will follow and PacifiCorp's lack of analysis of which measures will be most effective.

OSA makes several recommendations regarding PacifiCorp's proposed system hardening measures. First, with respect to small conductors used for primary voltage in PacifiCorp's overhead distribution system,[8] OSA asserts small conductors are more prone to breakage, more likely to have developed pitting from arcing during lightning strikes over time, and that both aluminum and copper materials are vulnerable to deterioration. For these reasons, OSA recommends the company prioritize replacement of existing small conductors located in the high fire threat areas of PacifiCorp's service territory. In reply comments, PacifiCorp elaborates on its planned replacement of small conductors according to a risk-based prioritization and confirms its WMP is designed to make overall evaluations on a risk basis to best mitigate against wildfire risks.

[7] PacifiCorp's WMP identifies an example of impact loads as mechanical forces from wind-borne debris or trees; locations that are more likely to experience more substantial impact loads include locations with large trees or branch elements, ice loading or heavy wind.

[8] PacifiCorp defines primary voltage as greater than 600 volts. Primary voltage service is typically available only to large commercial and industrial customers.

Second, with respect to PacifiCorp's planned improvements associated with its SCADA capabilities, OSA recommends the company complete this work as soon as possible, asserting the ability to remotely control or change settings on distribution feeder reclosers is needed to ensure the public's safety during high fire threat days. Specifically, PacifiCorp explains that the company is able to remotely enable and disable auto-reclosing settings in response to perceived fire conditions, but not all equipment the company operates is controllable via SCADA. PacifiCorp confirms that, following implementation of its proposed mitigations, the company will have the ability to remotely control and change settings on substation and recloser relays. Disabling these settings means that if a line faults, the recloser that reconnects the circuit will not do so. In this way, the line remains de-energized. If the recloser were enabled, the line would be re-energized, even if the fault was due to a condition that could start a wildfire. Disabling the recloser function in high fire danger situations could prevent the line from continuing to ignite fuel nearby. In reply comments, PacifiCorp states it agrees with OSA's recommendation to enable the company to remotely control and change settings on substations and recloser relays as soon as possible.

Third, noting that lightning accounts for nearly 63 percent of the wildfires in PacifiCorp's service territory during 2007-2017, OSA questions the wisdom of PacifiCorp's five-year plan to replace wooden poles with steel structures, and recommends PacifiCorp meet with a lightning expert before purchasing the steel structures to determine whether they may attract lightning strikes, and to consider using different materials. In reply comments, PacifiCorp states it intends to engage experts to evaluate materials and configurations, and will weigh lightning risks against fire risks to determine the appropriate materials for specific locations with high probability of lightning events.

Finally, OSA notes that PacifiCorp's WMP does not specify start dates or completion dates for any of the planned system hardening projects, and recommends the company hire or designate an individual within the organization to organize, manage and direct these projects, and further that this individual have the authority to ensure these projects receive the highest priority. In reply comments, PacifiCorp states it will make appropriate organizational adjustments to designate an individual to lead the company's system hardening activities.

Cal Advocates also critiques PacifiCorp's WMP for a lack of detail and a lack of risk-spend efficiency comparisons with alternative measures, and recommends PacifiCorp further develop more immediate strategies and address timeline feasibility, possible obstacles, and alternatives considered with cost-efficiency justifications in the company's 2020 WMP. In reply comments, PacifiCorp states that, while the 2019 WMPs cannot completely cover all details, the company will work to incorporate Cal Advocates' feedback and improve its demonstration of the risk-spend efficiency of its mitigation strategies in future WMPs.

3.3.3. Discussion – System Hardening

Both OSA and Cal Advocates' comments suggest PacifiCorp's 2019 WMP lacks specificity regarding prioritization and the basis for prioritization of planned activities, and thus also lacks specificity regarding actual implementation. Although we believe PacifiCorp has included system hardening in its Plan as required by SB 901, Public Utilities Code Section 8386(c)(12), we generally agree with the comments, and encourage PacifiCorp to first assess the relative effectiveness of any system hardening activities to determine how best to prioritize these activities. In doing so,

PacifiCorp should consider the factors and recommendations, to which PacifiCorp indicates general agreement, raised by the parties.

In particular, with respect to the plan to install spacer cable for all circuits within Tier 3 (and any circuits electrically connected to Tier 3), we encourage PacifiCorp to first conduct further analysis to identify which specific circuits would benefit from covered conductor by looking at past data, such as outage and fault history, instead of doing a blanket replacement in all Tier 3 areas and electrically connected circuits.

3.4. De-Energization

3.4.1. OIR on De-energization

The Commission is examining de-energization in depth in R.18-12-005, given the significant interest in the topic by communities affected by wildfire, cities, counties, first responders, persons with disabilities and medical conditions, and others. In the scoping memo in this proceeding, we explained that in reviewing electrical corporations' de-energization protocols in this decision, we would consider whether the protocols comply with Resolution ESRB-8. To the extent the Commission authorizes new requirements in R.18-12-005, those requirements will automatically apply once adopted. Thus, de-energization is on the list of items that WMPs must cover, and accordingly will be addressed in this proceeding as one element of the Plans, but the subject requires more in-depth consideration than it can receive in this proceeding.

Resolution ESRB-8 applies the de-energization, notification and mitigation requirements of D.12-04-024 (which was at the time applicable only to SDG&E) to all electric IOUs. Thus, it binds PacifiCorp. Resolution ESRB-8 requires additional coordination, communication and public outreach measures to increase public awareness of potential de-energization events.

3.4.2. PacifiCorp's Proposal on De-energization

Section IV.F of PacifiCorp's WMP addresses the company's Public Safety Power Shut-off (PSPS) program, which PacifiCorp states is consistent with D.12-04-024 and Resolution ESRB-8.

PacifiCorp identifies the two areas in its service territory that are designated as Tier 3 areas, Happy Camp and Mount Shasta, as areas where it will apply criteria to determine whether and when to de-energize portions of its distribution system. These criteria are based on specific factors, including weather data, geographic topography, fire probability and ignition data and historical fire data. In these areas that PacifiCorp has designated as Proactive De-Energization Zones, PacifiCorp further splits the Mount Shasta area into four discrete Proactive De-Energization Zones (Weed, Mt. Shasta, Dunsmuir, and Snowbrush), and includes a specific restoration process for each of the five zones.

PacifiCorp's PSPS program includes a communication plan for notifying affected customers, with a stated goal of providing at least 48 hours' notice prior to activating a de-energization event. The communication plan also includes notifications for each subsequent state of the de-energization event (updated conditional, imminent, immediate, and restoration), and updates triggered by changes in the status of the de-energization event, including a change in the estimated time of restoration.

3.4.3. Parties' Comments – De-energization

OSA and Cal Advocates identify issues and recommend modifications to PacifiCorp's WMP with respect to de-energization.

OSA suggests PacifiCorp's WMP lacks necessary detail with respect to identifying the company's vulnerable customers and their needs, and recommends the company "work to expand their knowledge" to identify

vulnerable and medical baseline customers in its service territory and to prioritize notification of a potential de-energization event to these customers. OSA also recommends PacifiCorp increase its weather monitoring program to be able to identify potential triggers for a PSPS event at least four or five days ahead of the potential event, and to notify public safety authorities, local municipalities, emergency responders, hospitals, medical clinics, nursing homes, and schools of a potential PSPS event as soon as the company identifies a potential event trigger. In reply comments, PacifiCorp explains how it identifies life support customers and provides information to all customers about the medical baseline program. PacifiCorp confirms its PSPS notification process fully complies with Resolution ESRB-8, and that the company has shared its PSPS process with emergency service professionals, community leaders, and telecommunications companies to afford these organizations an opportunity to be informed before the PSPS 48-hour notice.

Like OSA, Cal Advocates asserts PacifiCorp's WMP lacks detail with respect to additional outreach and back-up plans for medical baseline customers, and to determining the accuracy of its accounting of medical baseline customers. Cal Advocates recommends PacifiCorp provide detailed measures and explain how it will determine an accurate accounting of medical baseline customers and their location in its next WMP. In reply comments, PacifiCorp agrees with Cal Advocates' recommendation and states the company has worked and will continue to work with emergency services to address how to improve notifications.

3.4.4. Discussion – De-energization

The issues OSA and Cal Advocates raise are within the scope of the Commission's de-energization proceeding, and any decision issued there will

bind all IOUs, including PacifiCorp. Both OSA and Cal Advocates' comments suggest PacifiCorp's 2019 WMP lacks a necessary amount of detail, particularly regarding identification of priority customers and a definition of priority customers; such detail would, in part, clarify whether and what protocols the company has for mitigating safety impacts of de-energization on critical first responders. Although we find PacifiCorp has appropriately discussed de-energization in its WMP as required by Public Utilities Code Sections 8386(c)(6) and (7), we generally agree the Plan should include details as recommended by OSA and Cal Advocates, and expect PacifiCorp will work to include these details and any other items the Commission requires in R.18-12-005 or other relevant proceedings, in its 2020 WMP.

3.5. Emergency Preparedness, Outreach and Response

3.5.1. PacifiCorp's Proposal - Emergency Preparedness, Outreach and Response Plan

Section V of PacifiCorp's WMP addresses emergency preparedness, outreach and response. PacifiCorp describes its incident management structure as a flexible and dynamic central command-and-control function, and asserts the structure is aligned with National Incident Management System standards. PacifiCorp states the company's field crews are capable of extinguishing small fires or new ignitions that do not exceed the size that one person can fight while maintaining their own safety.

PacifiCorp states that in cases of large fires, a public-sector incident management team is typically located at a multi-agency command post, and field operations staff coordinate either directly with the incident management team at the command post or via a field safety representative. In cases of small fires or new ignitions, a command post may not be established immediately or may be difficult to site.

In terms of emergency communications, PacifiCorp states it will use a multi-faceted effort to communicate information regarding wildfire prevention and response to customers, including targeted radio public service announcements, social media posts, website banners and a wildfire safety landing page, targeted bill messages, and outreach to local community authorities and organizations to participate in prevention and preparedness town halls.

PacifiCorp's Emergency Response Plan pursuant to GO 166 provides further details regarding the company's restoration process, including guidelines for prioritization of facilities, procedures for critical customers, and communication of restoration estimates.

3.5.2. Party Comments – Emergency Preparedness, Outreach and Response

With respect to emergency preparedness, OSA observes that Happy Camp, which is in a high fire threat area and has only one means for egress, may attract many people for recreational purposes during the fire season. Due to the high fire threat and limited means of egress, OSA recommends PacifiCorp conduct a traffic simulation and evacuation study. Based on the study, OSA asserts, PacifiCorp should work with CAL FIRE, the California Office of Emergency Services and the county sheriff's department to develop an evacuation plan and examine alternative strategies for dealing with the anticipated traffic conditions and evacuation times. OSA further suggests that PacifiCorp consider evacuation issues for other similarly isolated communities within its service territory.

In reply comments, PacifiCorp agrees with OSA's suggestion but emphasizes that local emergency services agencies are best positioned to conduct or organize such studies and confirms the company has worked and will

continue to work with other agencies and emergency responders to provide support.

3.5.3. Discussion – Emergency Preparedness, Outreach and Response

Although we find PacifiCorp's WMP addresses emergency preparedness as required by Public Utilities Code Section 8386(c)(16), OSA's recommendation is constructive. We encourage PacifiCorp, to the extent it has not done so, to seek to coordinate its evacuation planning for isolated communities in its service territory with the appropriate agencies; PacifiCorp should include a discussion of these efforts in its 2020 WMP. Any updates to evacuation or other emergency response procedures should be included in PacifiCorp's next Emergency Response Plan pursuant to GO 166.[9]

Additionally, PacifiCorp is required to communicate its WMP's emergency preparedness outreach and response in specific languages. PacifiCorp's WMP does not comply with this requirement.

Specifically, Public Utilities Code Section 8386(c)(16)(B) mandates that PacifiCorp's plan for community outreach and public awareness before, during, and after a wildfire be communicated in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the Commission based on the United States Census data. Taking official notice of United States Census data pursuant to Rule 13.9 of the Commission's Rules of Practice and Procedure, the Commission determines that the following languages are the three most common languages used in the state other than English or Spanish: Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese. In addition to those languages, PacifiCorp

[9] PacifiCorp's next Emergency Response Plan, for the period July 1, 2018 through June 30, 2019, is due October 31, 2019.

shall provide outreach in Korean and Russian where these languages are prevalent in its service territory. PacifiCorp shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in the above languages.

3.6. Support to Utility Customers During and After a Wildfire

3.6.1. PacifiCorp's Proposal - Support to Utility Customers During and After a Wildfire

PacifiCorp states the company has implemented consumer protections and procedures to assist customers when a disaster impacts their communities, consistent with requirements adopted in R.18-03-011, including but not limited to:

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

3.6.2. Party Comments – Support to Utility Customers During and After a Wildfire

SBUA asserts PacifiCorp's plan does not include plans to help small business customers, and the company should propose financial support programs tailored to small business customers.

In reply comments, PacifiCorp confirms the company already provides customer support to residential and small business customers, pursuant to its Emergency Customer Protection Plan and the requirements of D.18-08-004. Further, PacifiCorp states the company is open to conducting additional outreach to better understand the needs of small businesses, though such issues would be more appropriately considered in R.18-03-011.

3.6.3. Discussion - Support to Utility Customers During and After a Wildfire

SB 901 contains several provisions related to an electrical corporation's emergency preparedness, response and communications before, during and after a wildfire.

Public Utilities Code Sections 8386(c)(13), (16), (17) and 768.6 require a WMP to contain emergency preparedness and response plans that comply with mandates involving communications with cities and counties, preparation for and restoration of service after a wildfire, and public outreach. Specifically, the statute requires the WMP sponsor to share its emergency preparedness and response plans with relevant cities and counties to provide input and feedback, and update and improve the plans at least every two years. It also requires the WMP to list persons responsible for plan execution, establish procedures for notifying impacted customers, establish protocols for restoration of service, and create a workforce mobilization plan for its employees before and after a wildfire. The statute mandates that a WMP include a plan for community

outreach and public awareness before, during, and after a wildfire in an array of languages including English, Spanish, and the top three languages in California as determined by United States census data.

Public Utilities Code Section 8386(c)(18) requires a WMP to comply with the requirements we adopted in D.18-08-004 requiring emergency customer support for residential and small business customers during and after a wildfire. The requirements are: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d); extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

D.18-08-004 also requires an electric utility to discontinue billing and prorate any monthly access charge or minimum charges to the customer after a wildfire. Additionally, when implementing support for low-income residential customers, D.18-08-004 requires an electric utility to contact all community outreach contractors and community-based organizations who assist in enrolling hard-to-reach low-income customers into CARE after a wildfire (or other listed emergency). That decision also adopts a method for the electric utility to track its expenses related to the customer protections.

PacifiCorp's WMP complies with each of the requirements set forth above, except that it does not address plans for community outreach and public awareness before, during, and after a wildfire in English, Spanish, and the top three primary languages in the State other than English or Spanish. We make our approval of PacifiCorp's WMP conditional upon modification of the Plan to include this provision via the Tier 1 AL described in Section 3.7.1 below.

In comments on the proposed decision, PacifiCorp notes that SB 901 specifies that the top three primary languages in the State (other than English and Spanish) are to be determined by the Commission, and further notes the proposed decision did not include any such determination. We acknowledge PacifiCorp's comments and have modified the proposed decision to include a finding that the top three primary languages (other than English and Spanish) are Chinese, Tagalog and Vietnamese. In addition, PacifiCorp should provide outreach in Korean in Russian where those languages are prevalent in its service territory.

With respect to SBUA's critique, we confirm that PacifiCorp must comply with D.18-08-004, which includes protections applicable to both residential and small business customers.

3.7. Should PacifiCorp's 2019 WMP be Approved?

PacifiCorp includes all items required by SB 901 in its WMP. However, we order certain compliance, reporting and data gathering during this WMP cycle, as well as the inclusion of new information in the 2020 WMP.

3.7.1. GO 95, Rule 18 Compliance is Required For Correction Timeframe of Priority Level 1 Conditions

Table 14 of PacifiCorp's WMP identifies the correction timeframe for Priority Level 1 conditions as "within 30 days," which is not consistent with GO 95, Rule 18. Companies must take corrective action on Priority Level 1 risks immediately; to the extent that Table 14 reflects PacifiCorp's current policy or practice, PacifiCorp must immediately bring its policy and practice into full alignment with the GO. Indeed, to the extent PacifiCorp does not currently treat such conditions immediately, it is out of compliance with GO 95.

In comments on the proposed decision, PacifiCorp clarifies that Priority Level 1 risks are a subset of its Priority A conditions, and further that the 30-day

correction timeframe specified for Priority A conditions is the maximum correction timeframe for that category. PacifiCorp confirms that Priority Level 1 conditions are coded as such and corrected immediately, in compliance with GO 95, Rule 18.

We acknowledge PacifiCorp's comments. PacifiCorp must still modify Table 14 and any company procedures, as necessary, to conform entirely with the requirements of GO 95, Rule 18. The company shall demonstrate compliance via a Tier 1 advice letter within 30 days of the effective date of this decision, but the obligation exists irrespective of such filing.

3.7.2. Include Referenced Policies/Procedures and Memoranda as Appendices to the Plan

PacifiCorp's WMP references several relevant documents that, because they constitute a part of the company's overall wildfire mitigation strategy, should be included as appendices to the Plan. These include the company's Transmission & Distribution Vegetation Management Program Standard Operating Procedures (first referenced at 53); the Memorandum of Understanding on Vegetation Management for Powerline Rights-of-Way (referenced at page 54); and *American National Standard for Tree Care Operations: ANSI A300 (Part 9) Tree Risk Assessment* and International Society of Arboriculture: *Best Management* Practices, *Tree Risk Assessment* (referenced at page 55). PacifiCorp shall provide these documents via the Tier 1 advice letter identified in Section 3.7.1.

3.7.3. Include Protocols for Mitigating Impacts of De-energization on Critical First Responders and Health and Communication Infrastructure

In response to the March 5, 2019 ruling of the assigned ALJ, PacifiCorp provided information that addresses protocols for mitigating impacts of de-energization on critical first responders, as required by Public Utilities Code

Section 8386(c)(6). These issues are within scope of the Commission's de-energization proceeding, and any decision there will bind all IOUs, including PacifiCorp.

3.7.4. Specify That GIS Data Will Be Made Available to the CPUC, CAL FIRE, And Other Relevant Agencies

To facilitate state fire prevention and mitigation efforts, PacifiCorp shall share any existing and planned GIS data related to the location of the circuits and planned vegetation management with this Commission, CAL FIRE, and other relevant agencies upon request.

3.8. Guidance for PacifiCorp's Future WMPs

We require PacifiCorp's future WMPs, starting in 2020, to include the following information, as well as any additional information required in the proceeding acting on that WMP.

3.8.1. Explicitly Include a Goal of Wildfire Risk Reduction and/or Mitigation

PacifiCorp's WMP states a goal of "completion of all activities described and included in Section IV;" PacifiCorp's future WMPs should instead include goals more explicitly associated with wildfire mitigation and risk reduction. Specifically, future WMPs should incorporate a goal of targeting utility ignitions that occur in areas susceptible to catastrophic wildfire promulgation and during times of increased fire danger.

3.8.2. Situational Awareness

We expect PacifiCorp to improve its situational awareness, particularly through low- or no-cost measures that enable a better understanding of local conditions within its service territory. For instance, PacifiCorp's primary reasoning behind utilizing weather stations is to determine PSPS events, instead of predicting conditions that may result in ignitions. PacifiCorp's

forward-looking approach could be enhanced by installing weather stations more extensively throughout its service territory, as this is a relatively low-cost option for enhancing awareness of local weather conditions and potentially preventing catastrophic wildfires.

Additionally, PacifiCorp states the company is not deploying High Definition (HD) cameras as part of this WMP. PacifiCorp should also consider deployment of DFA technology, which may enable detection of incipient failures as far in advance as weeks before a catastrophic failure. PacifiCorp's next WMP should include a discussion of the company's consideration of DFA deployment as part of its overall wildfire mitigation strategy.

Finally, as discussed in more detail in the companion guidance decision concurrently issued in this proceeding, the purpose of WMP metrics should be to enable assessment of the extent to which implementation of specific wildfire mitigations will minimize the risk of catastrophic wildfire posed by utilities' electrical lines and equipment. The proposed metrics in PacifiCorp's 2019 WMP, while informative, may not be sufficient for this purpose.

We expect PacifiCorp's future WMPs to include further details on these indicators, such as date, time, location, duration and impact. Future WMPs should also include additional metrics, such as the number of elevated fire danger days (based on Red Flag Warnings, Fire Potential Index ratings, or NFDRS data) and the number and types of potential ignition events (*e.g.*, wires down, blown fuses, vegetation contact, etc.) that occur on those days, to better analyze the risk of catastrophic fires caused by electrical lines and equipment. We expect that PacifiCorp already collects or tracks much of this data, as discussed throughout its 2019 WMP; future WMPs should specifically identify all data elements that are collected through each WMP program or strategy, and

further identify the specific databases and applications or programs that utilize each data element. PacifiCorp must also share such data with the Commission, CAL FIRE and other agencies upon request.

3.8.3. Vegetation Management

Although no parties commented on PacifiCorp's vegetation management practices, we expect PacifiCorp to include a more extensive and detailed discussion regarding its vegetation management practices in future WMPs. For instance, PacifiCorp's 2019 WMP lacks supporting data for identifying and handling hazard trees. PacifiCorp should substantiate any protocols with data the company has collected regarding hazard trees, instead of relying solely on the statutory definition of a hazard tree.

Additionally, we expect future WMPs to demonstrate that PacifiCorp has built in adequate timeframes for obtaining necessary permits associated with vegetation management, and discussion of early coordination with relevant agencies to facilitate timely reviews.

3.8.4. Alternative Technologies

Section IV.G. of PacifiCorp's 2019 WMP refers to other parts of the WMP rather than listing alternative technologies. In the 2020 WMP, this section should list any mitigation that uses new or untested technologies, even if also addressed in other sections. For example, it is unclear if the new proposed program listed on page 38 of the WMP (collecting infrared and/or radio frequency data) is intended to be an alternate technology, even though it appears to be implemented on the same scale as a typical inspection.

3.8.5. Post-Incident Response, Recovery and Remediation Activities

In addressing post-incident recovery, restoration, and remediation efforts, PacifiCorp generally refers to the practices and procedures used for proactive

de-energization. As a guiding document for post-incident recovery, it is unclear how or to what extent the procedures governing the utility's response to de-energization apply to recovery of a catastrophic fire incident. Most of the section regarding proactive de-energization focuses on notifying customers and local agencies of a de-energization event. Further information that specifically addresses PacifiCorp's wildfire recovery and remediation procedures should be included in future WMPs.

3.8.6. Fire Incident and Fault Data Reporting

Pursuant to D.14-12-015, the large electrical corporations are required to submit annual fire incident data reports, which should enhance the Commission's ability to evaluate utility-associated fires and thereby provide meaningful, data-based policy guidance. In order to more comprehensively assess utility data throughout California, we expect PacifiCorp to submit the fire incident data required by D.14-12-015 as part of its larger data collection report, as described in the companion guidance decision concurrently issued in this proceeding. Additionally, PacifiCorp's future WMPs should include data on "wires down" and fault events. PacifiCorp shall include the following data in this reporting: (1) date and time; (2) location information with latitude and longitude coordinates, pole numbers, and locations in the HFTD; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current. In all future ignition report filings, we direct PacifiCorp to include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

3.9. Conclusion

As discussed in this decision, PacifiCorp's WMP contains all of the elements required by Senate Bill 901, Public Utilities Code Section 8386(c) and is approved. PacifiCorp shall supplement its WMP with a Tier 1 advice letter addressing issues discussed in this decision.

4. Conclusion

The approval we give today is but one action the state and the IOUs will take to mitigate the risk of catastrophic wildfire. This will be an annual process, and we do not expect perfection this year or even this decade. Rather, the annual WMP process will be iterative, and will require reporting, monitoring, evaluation and updating to ensure the electrical corporations are targeting the greatest risk with effective programs.

Pursuant to SB 901, the costs of the actions in the WMP will be the subject of review at a later time, in the context of IOU's GRC. Thus, nothing in this decision should be interpreted as a determination that those costs are reasonable or that Liberty, BVES, or PacifiCorp has acted as a prudent manager. Any provision in the WMP that represents that approval of the Plan constitutes a determination on cost, reasonableness, or prudency is hereby disapproved.

With the foregoing provisos, we find that Liberty, BVES, and PacifiCorp have provided WMPs that contains the elements in the list set forth in SB 901, Public Utilities Code Section 8386(c), subject to the conditions discussed in this decision.

5. Comments on Proposed Decision

The proposed decision of ALJ Sarah R. Thomas and ALJ Peter V. Allen in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's

Rules of Practice and Procedure. In accordance with the May 7, 2019 ALJ ruling, parties filed a single set of comments on the five decisions on electrical corporations' individual WMPs. The following parties filed comments addressing one or more of the WMP proposed decisions: RCRC on May 13, 2019; CEJA on May 16,2019; and William B. Abrams, BVES, City of Malibu, City of Placerville, the Joint Local Governments (County of Mendocino, County of Napa, County of Sonoma, and City of Santa Rosa), EBMUD, GPI, Horizon West, Liberty, MGRA, PG&E, PacifiCorp, POC, CalPA, SDG&E, SBUA, SCE, and TURN on May 20, 2019. Reply comments were filed on May 28, 2019 by BVES, CEJA, MGRA, PG&E, POC, SDG&E, SBUA, SCE, and TURN. We have made changes throughout this decision reflecting party comments.

6. Assignment of Proceeding

Michael Picker is the assigned Commissioner and Sarah R. Thomas and Peter V. Allen are the assigned ALJs in this proceeding.

Findings of Fact

Liberty

1. Liberty's WMP contains all of the required elements of WMPs listed in Public Utilities Code Section 8386(c).
2. Liberty shall include the following additional information in its next WMP:
    - *Inspection and Maintenance:* Liberty shall provide a robust discussion and analysis of its proposed Forest Resiliency Corridor.
    - *Vegetation Management:* Liberty shall provide a robust discussion and analysis of its vegetation management implementation and compliance with CAL FIRE guidelines.
    - *Situational Awareness:* Liberty shall provide an analysis of additional, situational awareness technologies that could enhance its wildfire mitigation strategy.

- *Emergency Preparedness and Response:* Liberty shall include a discussion of whether its emergency preparedness, outreach and response program needs any communication enhancements or improvement to achieve optimal, key stakeholder engagement.
- *Utility Customer Support:* Liberty shall document that it complied in administering all of the customer entitlements promulgated from R.18-03-011 in its next plan.
- *Metrics, Monitoring and Reporting:* Liberty shall provide scope and targets for implementing its WMP as well as a timeline and scope of activities for monitoring the plan's implementation

3. United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin, and other Chinese languages), Tagalog, and Vietnamese.

Bear Valley Electric Service

4. Bear Valley Electric Service's WMP contains all of the required elements of WMPs listed in Public Utilities Code Section 8386(c).

5. Bear Valley Electric Service shall include the following additional information in its next WMP:

- *Inspection and Maintenance:* BVES shall include a discussion of what, if any, structural improvements should be made to any vulnerable and transmission assets.
- *Vegetation Management:* BVES shall include granular detail about how its LiDAR technology will help it identify trees that could potentially come into contact with conductors and how it has coordinated with CAL FIRE to remove trees from non-federal lands.
- *Situational Awareness:* BVES shall include a cost-benefit analysis of whether hiring additional staff over contractors is more cost-effective.

- *Emergency Preparedness and Response:* BVES shall include a discussion of whether its emergency preparedness, outreach and response program needs any communication enhancements or improvement to achieve optimal, key stakeholder engagement.
- *Metrics, Monitoring and Reporting:* BVESshall include refined metrics, monitoring, and performance protocols including: (1) the number of faults and ignitions caused on dry days; (2) tracking time to repair infrastructure from time of identified issue to completion; (3) tracking the number of faults, wires-down and ignition by circuit and correlate that information to the number of line splices and age of the conductor, or other relevant causal factors; and (4) determination of whether it is reasonable to initiate a tree reliability or hazard inventory and rate the trees by relative risk.

6. United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin, and other Chinese languages), Tagalog, and Vietnamese.

PacifiCorp

7. PacifiCorp's WMP contains all of the required elements of WMPs listed in Public Utilities Code Section 8386(c), with the following exceptions subject to conditions imposed in this decision: (1) modify the plan to align with General Order 95, Rule 18 regarding correction timeframe of Priority Level 1 conditions; (2) include referenced policies/procedures and memoranda as appendices to the WMP; (3) include plans for community outreach and public awareness in three most common languages statewide other than Spanish and English; and (4) specify that GIS data will be made available to the CPUC, CAL FIRE and other relevant agencies upon request.

8. United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin, and other Chinese languages), Tagalog, and Vietnamese.

Conclusions of Law

Liberty

1. Liberty's WMP should be approved, subject to the reporting, data gathering, and other requirements set forth in this decision and in the guidance decision concurrently issued in this proceeding.

2. Official notice is taken, pursuant to Rule 13. 9 of the Commission's Rules of Practice and Procedure, that United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese.

3. Liberty should communicate its WMP's emergency preparedness outreach and response in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

4. Liberty should give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

5. Liberty's future WMPs should provide more information on the efficacy and cost-effectiveness of its proposed system hardening activities, along with more information on the costs and benefits of alternate options.

6. Liberty's future WMPs should provide detailed and well-supported cost estimate information for each of the programs proposed in its WMP.

7. Liberty's future WMPs should identify all types of data it collects as part of its inspection program and models, programs, or applications in which it uses the data.

8. Liberty's future WMPs should track the number of elevated fire danger days in its territory, using indicators from the NFDRS or the RFW, along with the number and types of potential ignition events.

9. Liberty's future WMPs should track and annually report its wire-down events and fault data. Liberty shall include the following data in this reporting: (1) date and time of the wire-down event or fault; (2) location information with latitude and longitude coordinates, pole number, and location in the HFTD areas; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current.

10. Liberty's future WMPs should include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

11. Liberty should provide the Commission and CAL FIRE geospatial facility information on request. This should include, but not be limited to, the following: (1) above and below ground conductors; (2) voltage levels; (3) exempt/non-exempt hardware; (4) pole locations; and (5) underlying base maps that include parcel boundaries within the limits of planned vegetation management work.

12. Liberty's future WMPs should incorporate refinements by providing scope and targets for the proposed metrics.

13. Liberty should seek formal approval to replace its Brockway Substation.

14. Liberty should file an application to upgrade its Stateline Substation.

15. Liberty should open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

16. Liberty should not seek or obtain double recovery of the costs tracked in the Public Utilities Code Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with the Commission's Energy Division's approval. The Section 8386(j) account is described in SB 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

Bear Valley Electric Service

17. BVES' WMP should be approved as in compliance with Public Utilities Code Section 8386(c), subject to the conditions set forth in this decision and in the guidance decision concurrently issued in this proceeding.

18. The Commission should require additional reporting and activity to assist with the WMP process next year, and to help evaluate the effectiveness of the mitigation measures in this year's WMPs.

19. Official notice is taken, pursuant to Rule 13. 9 of the Commission's Rules of Practice and Procedure, that United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese.

20. BVES should communicate its WMP's emergency preparedness outreach and response in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

21. BVES should give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

22. BVES' future WMPs should provide more information on the efficacy and cost-effectiveness of its proposed system hardening activities, along with more information on the costs and benefits of alternate options.

23. BVES' future WMPs should provide detailed and well-supported cost estimate information for each of the programs proposed in its WMP.

24. BVES' future WMPs should refine its metrics, monitoring, and performance protocols to include: (1) the number of faults and ignitions caused on dry days; (2) track time to repair infrastructure from time of identified issue to completion; (3) track the number of faults, wires-down and ignition by circuit and correlate that information to the number of line splices and age of the conductor, or other relevant causal factors; and (4) determine whether it is reasonable to initiate a tree reliability or hazard inventory and rate the trees by relative risk.

25. BVES' future WMPs should conduct a cost-benefit analysis to determine whether additional staff will enhance its situational awareness program rather than utilizing contractors.

26. BVES' future WMPs should pursue the installation of cameras across its service territory, it should consider partnering with government agencies like CAL FIRE to ensure optimal siting of the cameras and information sharing.

27. BVES future WMPs should explore the use of DFA technology and other technology discussed at the Wildfire Technology Innovation Summit co-sponsored by this Commission. This technology may provide the utility with a proactive regime to detect and identify potential ignition sources before they occur.

28. BVES' future WMPs should discuss the strengths and weaknesses of its emergency preparedness, outreach, and response program as it engages with stakeholders during this upcoming fire season.

29. BVES' future WMPs should track and annually report ignition data, in accordance with D.14-02-015.

30. A WMP is not the appropriate venue in which to evaluate a transfer of control proposal, which must be reviewed through a separate formal application process.

31. BVES should file a formal application with this Commission to acquire the Ute Lines.

32. BVES should open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

33. BVES should not seek or obtain double recovery of the costs tracked in the Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with Energy Division's approval.

The Section 8386(j) account is described in SB 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

PacifiCorp

34. PacifiCorp's WMP contains the elements required by Public Utilities Code Section 8386(c) and should be approved.

35. PacifiCorp's future WMPs should provide more information on the efficacy and cost-effectiveness of its proposed system hardening activities, along with more information on the cost and benefits of alternate options.

36. PacifiCorp's future WMPs should provide detailed and well-supported cost estimate information for each of the programs proposed in its WMP.

37. Official notice is taken, pursuant to Rule 13. 9 of the Commission's Rules of Practice and Procedure, that United States Census data shows that the top three primary languages used in California other than English and Spanish are Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese.

38. PacifiCorp should communicate its WMP's emergency preparedness outreach and response in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

39. PacifiCorp should give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair

processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

40. PacifiCorp's future WMPs should include a more comprehensive discussion of how the company accounts for climate change-related risks.

41. PacifiCorp's future WMPs should assess the relative effectiveness of any system hardening activities to determine how best to prioritize these activities. In doing so, PacifiCorp should consider the factors and recommendations, to which PacifiCorp indicates general agreement, raised by the parties.

42. PacifiCorp's future WMPs should conduct further analysis to identify which specific circuits would benefit from covered conductor by looking at past data, such as outage and fault history, instead of doing a blanket replacement in all Tier 3 areas and electrically connected circuits.

43. PacifiCorp's future WMPs should include a discussion of its efforts to coordinate its evacuation planning for isolated communities in its service territory with the appropriate agencies.

44. PacifiCorp's 2019 WMP should be modified to align with GO 95, Rule 18 regarding correction timeframe of Priority Level 1 conditions.

45. PacifiCorp's 2019 WMP should include referenced policies/procedures and memoranda as appendices to the WMP.

46. PacifiCorp's 2019 WMP should specify that the company will make GIS data available to the CPUC, CAL FIRE and other relevant agencies on request.

47. PacifiCorp's future WMPs should explicitly include a goal of wildfire risk reduction and/or mitigation.

48. PacifiCorp's future WMPs should seek to improve the company's situational awareness, as discussed in this decision.

49. PacifiCorp's future WMPs should include more detailed information and supporting data regarding its vegetation management practices, as discussed in this decision.

50. PacifiCorp's future WMPs should explicitly identify any mitigation that uses new or untested technologies.

51. PacifiCorp's future WMPs should include details about the company's wildfire recovery and remediation procedures.

52. PacifiCorp's future WMPs should include the fire incident data required by D.14-12-015, and data on "wires down" and fault events.

53. PacifiCorp should open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

54. PacifiCorp should not seek or obtain double recovery of the costs tracked in the Public Utilities Code Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with the Commission's Energy Division's approval. The Section 8386(j) account is described in SB 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

O R D E R

IT IS ORDERED that:

Liberty Utilities

1. Liberty Utilities' (Liberty) Wildfire Mitigation Plan contains the elements required by Public Utilities Code Section 8386(c). Subject to the reporting, data gathering, and other requirements set forth below and in the guidance decision on 2019 Wildfire Mitigation Plans issued concurrently with this decision, Liberty Utilities' Wildfire Mitigation Plan is approved.

2. In its future Wildfire Mitigation Plans, Liberty Utilities shall identify all types of data it collects as part of its inspection program and models, programs, or applications in which it uses the data. Liberty shall track the number of elevated fire danger days in its territory, using indicators from the National Fire Danger Rating System or the National Weather Service's Red Flag Warnings, along with the number and types of potential ignition events.

3. In its future Wildfire Mitigation Plans, Liberty Utilities shall track and annually report its wire-down events and fault data. Liberty shall include the following data in this reporting: (1) date and time of the wire-down event or fault; (2) location information with latitude and longitude coordinates, pole number, and location in the High Fire-Threat District areas; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current. In all future ignition report filings, Liberty shall include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

4. Liberty Utilities shall provide the Commission and the California Department of Forestry and Fire Protection geospatial facility information on

request. This should include, but not be limited to, the following: (1) above and below ground conductors; (2) voltage levels; (3) exempt/non-exempt hardware; (4) pole locations; and (5) underlying base maps that include parcel boundaries within the limits of planned vegetation management work. Liberty Utilities shall demonstrate compliance with this ordering paragraph via a Tier 1 advice letter to the service list of this proceeding within 30 days of the effective date of this decision.

5. Liberty Utilities' future Wildfire Mitigation Plans (WMPs) shall incorporate refinements by providing scope and targets for the proposed metrics in 2020 WMP.

6. Liberty Utilities shall seek formal approval to replace its Brockway Substation.

7. Liberty Utilities shall file an application to upgrade its Stateline Substation.

8. Liberty Utilities is authorized to open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

9. Liberty Utilities shall not seek or obtain double recovery of the costs tracked in the Public Utilities Code Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with the Commission's Energy Division's approval. The Section 8386(j) account is described in Senate Bill 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

10. Liberty Utilities shall give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

11. Liberty Utilities shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

12. Nothing in this decision relieves Liberty Utilities of the requirement to conform all of the activities described in its Wildfire Mitigation Plan to existing law, regulation and Commission General Orders.

13. Nothing in this decision changes the notice, communication, outreach or other requirements of the Commission's concurrent de-energization decision issued in Rulemaking 18-12-005.

Bear Valley Electric Service

14. Bear Valley Electric Service's Wildfire Mitigation Plan contains the elements required by Public Utilities Code Section 8386(c). Subject to the reporting, data gathering, and other requirements set forth below and in the guidance decision on 2019 Wildfire Mitigation Plans issued concurrently with this decision, Bear Valley Electric Service's Wildfire Mitigation Plan is approved.

15. In its future Wildfire Mitigation Plans, BVES shall refine its metrics, monitoring, and performance protocols to include: (1) the number of faults and ignitions caused on dry days; (2) track time to repair infrastructure from time of

identified issue to completion; (3) track the number of faults, wires-down and ignition by circuit and correlate that information to the number of line splices and age of the conductor, or other relevant causal factors; and (4) determine whether it is reasonable to initiate a tree reliability or hazard inventory and rate the trees by relative risk.

16. In its future Wildfire Mitigation Plans, Bear Valley Electric Service shall conduct a cost-benefit analysis to determine whether additional staff will enhance its situational awareness program rather than utilizing contractors.

17. Should BVES pursue the installation of cameras across its service territory, it shall consider partnering with government agencies like the California Department of Forestry and Fire Protection to ensure optimal siting of the cameras and information sharing.

18. In its future Wildfire Mitigation Plans, Bear Valley Electric Service shall explore the use of Distribution Fault Anticipation technology and other technology discussed at the Wildfire Technology Innovation Summit co-sponsored by this Commission. This technology may provide the utility with a proactive regime to detect and identify potential ignition sources before they occur.

19. In its future Wildfire Mitigation Plans Bear Valley Electric Service shall discuss the strengths and weaknesses of its emergency preparedness, outreach, and response program as it engages with stakeholders during this upcoming fire season.

20. In its future Wildfire Mitigation Plans, Bear Valley Electric Service shall track and annually report ignition data, in accordance with Decision 14-02-015.

21. Bear Valley Electric Service is authorized to open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At

the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

22. Bear Valley Electric Service shall not seek or obtain double recovery of the costs tracked in the Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with Energy Division's approval. The Section 8386(j) account is described in Senate Bill 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

23. Bear Valley Electric Service shall file an application with this Commission to acquire the Ute Lines.

24. Bear Valley Electric Service shall give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

25. Bear Valley Electric Service shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

26. Nothing in this decision relieves Bear Valley Electric Service of the requirement to conform all of the activities described in its Wildfire Mitigation Plan to existing law, regulation and Commission General Orders.

27. Nothing in this decision changes the notice, communication, outreach or other requirements of the Commission's concurrent de-energization decision issued in Rulemaking 18-12-005.

PacifiCorp

28. PacifiCorp's Wildfire Mitigation Plan contains the elements required by Public Utilities Code Section 8386(c). Subject to the reporting, data gathering, and other requirements set forth below and in the guidance decision on 2019 Wildfire Mitigation Plans issued concurrently with this decision, PacifiCorp's Wildfire Mitigation Plan is approved.

29. PacifiCorp shall in future Wildfire Mitigation Plans include a more comprehensive discussion of how the company accounts for climate change-related risks.

30. PacifiCorp shall in future Wildfire Mitigation Plans provide more information on the efficacy and cost-effectiveness of its proposed system hardening activities, along with more information on the coast and benefits of alternate options.

31. PacifiCorp shall in future Wildfire Mitigation Plans provide detailed and well-supported cost estimate information for each of the programs proposed in its Wildfire Mitigation Plan.

32. PacifiCorp shall in future Wildfire Mitigation Plans conduct further analysis to identify which specific circuits would benefit from covered conductor by looking at past data, such as outage and fault history, instead of doing a blanket replacement in all Tier 3 areas and electrically connected circuits.

33. PacifiCorp shall in future Wildfire Mitigation Plans include a discussion of its efforts to coordinate its evacuation planning for isolated communities in its

service territory with the appropriate agencies in its 2020 Wildfire Mitigation Plan.

34. Within 30 days of the effective date of this decision, PacifiCorp shall submit a Tier 1 advice letter to modify its 2019 Wildfire Mitigation Plan to align with General Order (GO) 95, Rule 18 regarding correction timeframe of Priority Level 1 conditions, and any other requirements of GO 95 as necessary.

35. Within 30 days of the effective date of this decision, PacifiCorp shall submit a Tier 1 advice letter to include referenced policies/procedures and memoranda as appendices to the 2019 Wildfire Mitigation Plan. PacifiCorp may satisfy this requirement through the same Tier 1 advice letter required in Ordering Paragraph 34.

36. Within 30 days of the effective date of this decision, PacifiCorp shall submit a Tier 1 advice letter to specify in its 2019 Wildfire Mitigation Plan that Geographic Information System data will be made available to this Commission or the California Department of Forestry and Fire Protection. PacifiCorp may satisfy this requirement through the same Tier 1 advice letter required in Ordering Paragraph 34.

37. PacifiCorp shall in future Wildfire Mitigation Plans include a goal of wildfire risk reduction and/or mitigation.

38. PacifiCorp shall in future Wildfire Mitigation Plans include a description of the company's efforts to improve situational awareness, as discussed in this decision.

39. PacifiCorp shall in future Wildfire Mitigation Plans include more detailed information and supporting data regarding its vegetation management practices, as discussed in this decision.

40. PacifiCorp shall in future Wildfire Mitigation Plans explicitly identify any mitigation that uses new or untested technologies.

41. PacifiCorp shall in future Wildfire Mitigation Plans include details about the company's wildfire recovery and remediation procedures.

42. PacifiCorp shall in future Wildfire Mitigation Plans include the fire incident data required by D.14-12-015, and data on "wires down" and fault events. PacifiCorp shall include the following data in this reporting: (1) date and time of the wire-down event or fault; (2) location information with latitude and longitude coordinates, pole number, and location in high-fire threat district areas; (3) circuit name and operating voltage; (4) type of conductor; (5) installation date; (6) number of splices in span; (7) type of each splice identified; (8) identification of failure point; (9) cause of failure; and (10) magnitude and duration of fault current. In all future ignition report filings, PacifiCorp shall include all ignition data for previously unreported ignitions, and if applicable, where the investigating fire agency determined utility facilities to be the cause of ignition.

43. PacifiCorp is authorized to open the memorandum account described in Public Utilities Code Section 8386(e), which provides: "At the time it approves each plan, the commission shall authorize the utility to establish a memorandum account to track costs incurred to implement the plan."

44. PacifiCorp shall not seek or obtain double recovery of the costs tracked in the Section 8386(e) account authorized in the previous paragraph, and the costs tracked in the memorandum account described in Public Utilities Code Section 8386(j), which the utility established with Energy Division's approval. The Section 8386(j) account is described in Senate Bill 901 as follows: "(j) Each electrical corporation shall establish a memorandum account to track costs

incurred for fire risk mitigation that are not otherwise covered in the electrical corporation's revenue requirements."

45. PacifiCorp shall give the following customer support to utility customers affected by a wildfire, during and after a wildfire: (a) support for low-income customers; (b) billing adjustments; (c) deposit waivers; (d) extended payment plans; (e) suspension of disconnection and nonpayment fees; (f) repair processing and timing; (g) access to utility representatives; and (h) access to outage reporting and emergency communications.

46. PacifiCorp shall communicate its plan for community outreach and public awareness before, during, and after a wildfire in English, Spanish, Chinese (including Cantonese, Mandarin and other Chinese languages), Tagalog, and Vietnamese, as well as Korean and Russian where those languages are prevalent in its service territory.

47. Nothing in this decision relieves PacifiCorp of the requirement to conform all of the activities described in its Wildfire Mitigation Plan to existing law, regulation and Commission General Orders.

48. Nothing in this decision changes the notice, communication, outreach or other requirements of the Commission's concurrent de-energization decision issued in Rulemaking 18-12-005.

49. Rulemaking 18-10-007 remains open.

This order is effective today.

Dated May 30, 2019, at San Francisco, California.

MICHAEL PICKER
President
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA
Commissioners

Appendix A - List of requirements in SB 901 for WMPs

8386.

(c) The wildfire mitigation plan shall include:

(1) An accounting of the responsibilities of persons responsible for executing the plan.

(2) The objectives of the plan.

(3) A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.

(4) A description of the metrics the electrical corporation plans to use to evaluate the plan's performance and the assumptions that underlie the use of those metrics.

(5) A discussion of how the application of previously identified metrics to previous plan performances has informed the plan.

(6) Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.

(7) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider th need the notify, as a priority, critical first responders, health care facilities, and operators of telecommunications infrastructure.

(8) Plans for vegetation management.

(9) Plans for inspections of the electrical corporation's electrical infrastructure.

(10) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of Safety Model Assessment Proceeding and Risk Assessment Mitigation Phase filings. The list shall include, but not be limited to, both of the following:

(A) Risks and risk drivers associated with design, construction, operations, and maintenance of the electrical corporation's equipment and facilities.

(B) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory.

(11) A description of how the plan accounts for the wildfire risk identified in the electrical corporation's Risk Assessment Mitigation Phase filing.

(12) A description of the actions the electrical corporation will take to ensure its system will achieve the highest level of safety, reliability, and resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design, standards, equipment, and facilities, such as undergrounding, insulation of distribution wires, and pole replacement.

(13) A showing that the utility has an adequate sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the utility.

(14) Identification of any geographic area in the electrical corporation's service territory that is a higher wildfire threat than is currently identified in a

commission fire threat map, and where the commission should consider expanding the high fire threat district based on new information or changes in the environment.

(15) A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise.

(16) A description of how the plan is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Section 768.6, including both of the following:

(A) Plans to prepare for, and to restore service after, a wildfire, including workforce mobilization and prepositioning equipment and employees.

(B) Plans for community outreach and public awareness before, during, and after a wildfire, including language notification in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the commission based on the United States Census data.

(17) A statement of how the electrical corporation will restore service after a wildfire.

(18) Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to utility representatives, and emergency communications.

(19) A description of the processes and procedures the electrical corporation will use to do all of the following:

(A) Monitor and audit the implementation of the plan.

(B) Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies.

(C) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.

(END OF APPENDIX A)

Appendix B – Cross Reference SB 901-Wildfire Mitigation Plans

CROSS REFERENCE TABLE 1
Using SB 901 Organization

Code Reference §8386(c)	Wildfire Mitigation Plan section
(1) An accounting of the responsibilities of persons responsible for executing the plan.	VI.A.
(2) The objectives of the plan.	I.
(3) A description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires, including consideration of dynamic climate change risks.	II.
(4) A description of the metrics the electrical corporation plans to use to evaluate the plan's performance and the assumptions that underlie the use of those metrics.	VI.B.
(5) A discussion of how the application of previously identified metrics to previous plan performances has informed the plan.	VI.C.
(6) Protocols for disabling reclosers and deenergizing portions of the electrical distribution system that consider the associated impacts on public safety, as well as protocols related to mitigating the public safety impacts of those protocols, including impacts on critical first responders and on health and communication infrastructure.	IV.A.
(7) Appropriate and feasible procedures for notifying a customer who may be impacted by the deenergizing of electrical lines. The procedures shall consider th need the notify, as a priority, critical first responders, health care facilities, and operators of telecommunications infrastructure.	IV.F.
(8) Plans for vegetation management.	IV.D.
(9) Plans for inspections of the electrical corporation's electrical infrastructure.	IV.B.

Code Reference §8386(c)	Wildfire Mitigation Plan section
(10) A list that identifies, describes, and prioritizes all wildfire risks, and drivers for those risks, throughout the electrical corporation's service territory, including all relevant wildfire risk and risk mitigation information that is part of Safety Model Assessment Proceeding and Risk Assessment Mitigation Phase filings. The list shall include, but not be limited to, both of the following: (A) Risks and risk drivers associated with design, construction, operations, and maintenance of the electrical corporation's equipment and facilities. (B) Particular risks and risk drivers associated with topographic and climatological risk factors throughout the different parts of the electrical corporation's service territory.	III.B.(1-5)
(11) A description of how the plan accounts for the wildfire risk identified in the electrical corporation's Risk Assessment Mitigation Phase filing.	III.B.6.
(12) A description of the actions the electrical corporation will take to ensure its system will achieve the highest level of safety, reliability, and resiliency, and to ensure that its system is prepared for a major event, including hardening and modernizing its infrastructure with improved engineering, system design, standards, equipment, and facilities, such as undergrounding, insulation of distribution wires, and pole replacement.	IV. (whole section)
(13) A showing that the utility has an adequate sized and trained workforce to promptly restore service after a major event, taking into account employees of other utilities pursuant to mutual aid agreements and employees of entities that have entered into contracts with the utility.	V.B.3.
(14) Identification of any geographic area in the electrical corporation's service territory that is a higher wildfire threat than is currently identified in a commission fire threat map, and where the commission should consider expanding the high fire threat district based on new information or changes in the environment.	III.D.
(15) A methodology for identifying and presenting enterprise-wide safety risk and wildfire-related risk that is consistent with the methodology used by other electrical corporations unless the commission determines otherwise.	III.A.

Code Reference §8386(c)	Wildfire Mitigation Plan section
(16) A description of how the plan is consistent with the electrical corporation's disaster and emergency preparedness plan prepared pursuant to Section 768.6, including both of the following: (A) Plans to prepare for, and to restore service after, a wildfire, including workforce mobilization and prepositioning equipment and employees. (B) Plans for community outreach and public awareness before, during, and after a wildfire, including language notification in English, Spanish, and the top three primary languages used in the state other than English or Spanish, as determined by the commission based on the United States Census data.	V.A. V.B.
(17) A statement of how the electrical corporation will restore service after a wildfire.	V.B.1.
(18) Protocols for compliance with requirements adopted by the commission regarding activities to support customers during and after a wildfire, outage reporting, support for low-income customers, billing adjustments, deposit waivers, extended payment plans, suspension of disconnection and nonpayment fees, repair processing and timing, access to utility representatives, and emergency communications.	V.C.
(19) A description of the processes and procedures the electrical corporation will use to do all of the following: (A) Monitor and audit the implementation of the plan. (B) Identify any deficiencies in the plan or the plan's implementation and correct those deficiencies. (C) Monitor and audit the effectiveness of electrical line and equipment inspections, including inspections performed by contractors, carried out under the plan and other applicable statutes and commission rules.	VI.D.
(20) Any other information that the commission may require.	VII.A.

CROSS REFERENCE TABLE 2
Using Wildfire Mitigation Plan Organization

Wildfire Mitigation Plan section	Code Reference §8386(c)	
I. Objectives consistent with §8386(a) A. Categorized by following timeframes: A. Before upcoming wildfire season B. Before next Plan filing C. Within next 5 years	2	
II. Description of preventive strategies and programs B. Categorized by following timeframes: A. Before upcoming wildfire season B. Before next Plan filing C. Within next 5 years	3	
III. Risk Analysis and Risk Drivers A. Safety and wildfire risk identification and assessment methodology	15	
B. Wildfire risks and drivers list C. Listed in the following categories: 1. Design and Construction 2. Inspection and Maintenance 3. Operational Practices 4. Situational/Conditional Awareness 5. Response and Recovery	10	
C. Description of how plan accounts for wildfire risk identified in RAMP	11	
D. Service territory fire-threat evaluation	14	
IV. Wildfire Prevention Strategies and Programs D. Operational practices	6	12
E. Inspection and maintenance plans	9	
F. System hardening to achieve highest level of safety, reliability, and		

Wildfire Mitigation Plan section	Code Reference §8386(c)	
resiliency		
G. Vegetation management plan	8	
H. Situational awareness protocols and determination of local conditions		
I. De-energization protocol	7	
J. Alternative technologies K. Post-incident recovery, restoration, and remediation activities		
V. Emergency Preparedness and Response A. General description of overall plan B. Description of consistency with emergency preparedness and response plan		16
1. Service restoration plan	17	
2. Emergency communications		
3. Workforce adequacy showing	13	
C. Customer support in emergencies 1.1.1. Protocols for compliance with CPUC requirements	18	

Wildfire Mitigation Plan section	Code Reference §8386(c)
VI. Performance Metrics and Monitoring A. Accounting of responsibilities	1
B. Description of metrics and assumptions	4
C. Discussion on how previous metrics performance has informed current plan	5
D. Processes and procedures for: 1. Plan monitoring and auditing 2. Identifying and correcting Plan deficiencies 3. Monitoring and auditing effectiveness of equipment and line inspections	19
VII. Any other information the CPUC may require A. Cost information	20

(END OF APPENDIX B)

APPENDIX C: LIST OF ACRONYMS

A.	Application
AT&T	AT&T Mobility Wireless Operations Holdings, Inc.,Pacific Bell Telephone Company, and AT&T Corp.
AB	Assembly Bill
Abrams	William B. Abrams
ACS	Arc Suppression Coils
AGP	Annual Grid Patrol
Air Operations	SCE's Air Operations Department
ANSI	American National Standards Institute
AR	automatic reclosers
Bear Valley or BVES	Bear Valley Electric Service, a division of Golden State Water Company
BLF	Branch Line Fuses
BVLOS	Beyond Visual Line of Sight
C3	Customer Crew Communications
Cal Advocates	Public Advocates Office fka Office of Ratepayer Advocates
CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CARE	California Alternate Rates for Energy
CEJA	California Environmental Justice Alliance
CB	Circuit Breaker
CCC	Customer Contact Center
CCSF	The City and County of San Francisco
CCUE	Coalition of California Utility Employees
CCTA	California Cable and Telecommunications Association
CCWD	Contra Costa Water District
Cell	Critical Energy Infrastructure Information
CEMA	Catastrophic Event Memorandum Account
CEQA	California Environmental Quality Act
CERP	Company Emergency Response Plan

CFBF	California Farm Bureau Federation
CIRT	Centralized Inspection Review Team
Citizens	Citizens Sunrise Transmission LLC
CLF	current-limiting fuses
CMUA	California Municipal Utilities Association
CPUC	California Public Utilities Commission or Commission
CSWC	California State Warning Center
CUEA	California Utilities Emergency Association
CWSP	Community Wildfire Safety Program
D.	Decision
DATC	Duke American Transmission Company
DATC Path 15	Trans-Elect NTD Path 15, LLC
DDS	Distribution Design Standards
DFA	Distribution Fault Anticipation
DFM	Dead Fuel Moisture
DIIP	Distribution Infrared Inspection Program
DIMP	Distribution Inspection and Maintenance Program
DOH	Distribution Overhead Construction Standards
DRI	Drought Relief Initiative
EBMUD	East Bay Municipal Utility District
Eel	Edison Electric Institute
EOC	Emergency Operations Center
EOI	enhanced overhead inspections
EONS	Emergency Outage Notification System
EPIC	Electric Program Investment Charge
EP&R	Emergency Preparedness and Response
EPUC/IS	Energy Producers and Users Coalition and Indicated Shippers
ERO	Emergency Response Organization
ESA	Energy Savings Assistance

ETOR	Estimated Time of Restoration
EVM	enhanced vegetation management
FEMA	Federal Emergency Management Agency
FERA	Family Electric Rate Assistance
FERC	Federal Energy Regulatory Commission
FHPMA	Fire Hazard Prevention Memorandum Account
FHSZ	Fire Hazard Severity Zone
FIA	Fire Index Area
FiRM	Fire Risk Mitigation
FMEA	Failure Modes and Effects Analysis
FPI	Fire Potential Index
FPP	Fire Prevention Plan
FRP	fiber reinforced polymer
GIS	Geographic and Information System
GO	General Order
GPI	Green Power Institute
GRC	General Rate Case
GSRP	Grid Safety and Resiliency Program
GSW	Golden State Water Company
HD	high definition
Henricks	Ruth Henricks
HFRA	High Fire Risk Areas
HFTD	High Fire Threat District
HHZ	High Hazard Zones
HPCC	High Performance Computing Cluster
HTMP	Hazard Tree Management Program
I.	Investigation
ICS	Incident Command System
IMT	Incident Management Team
IOUs	Investor-Owned Utilities
IPI	Intrusive Pole Inspection program
IR	Infrared

ISA	International Society of Arborculture
ITO	Independent Transmission Owners
IVR	Integrated Voice Recording
km	Kilometer
kV	Kilovolt
LAC	Local Assistance Center
LADWP	Los Angeles Department of Water and Power
Laguna Beach	The City of Laguna Beach
Liberty	Liberty Utilities (CALPECO Electric) LLC
LiDAR	light detection and ranging technology
Malibu	The County of Los Angeles, City of Malibu
MA	Memorandum Account
MAA	Mutual Assistance Agreements
MADEC	meter alarming for downed energy conductor
MAVF	Multi-Attribute Value Framework
Mendocino	The County of Mendocino
MGRA	Mussey Grade Road Alliance or Mussey Grade
Mph	Miles per hour
MVCD	Minimum Violation Clearance Distance
Napa	The County of Napa
NEET-West	Next Era Energy Transmission West LLC
NERC	North American Reliability Corporation
NFDRS	National Fire Danger Rating System
NFPA	National Fire Protection Association
NIFC	National Interagency Fire Center
NIMS	National Incident Management System
NWS	National Weather Service
OA	Operability Assessment
OCP	Overhead Conductor Program
ODI	Overhead Detail Inspection
ODRM	Outage Database and Reliability Metrics
OEM	Offices of Emergency Management

OES	Office of Emergency Services
OIR	Order Instituting Rulemaking
OMS	Outage Management System
OSA	The Commission's Office of Safety Advocates
PacifiCorp	Pacific Power, a division of PacifiCorp
Paradise	Town of Paradise
PCB	polychlorinated biphenyls
PCEA	Peninsula Clean Energy Authority
PEV	Post Enrollment Verification
PG&E	Pacific Gas and Electric Company
PI	Pole Inspections
PIH	Pre-installed Interconnection Hubs
PLP	Pole Loading Program
PMO	Program Management Office
POC	Protect Our Communities
POMMS	PG&E Operational Mesoscale Modeling System
PRC	Public Resources Code
PSPS	Public Safety Power Shut-Off or De-Energization
PTZ	pan-tilt-zoom
PUC	Public Utilities Code
QA	Quality Assurance
QC	Quality Control
QCG	Quality Control Group
AM	Quality Management
QO	Quality Oversight
R.	Rulemaking
RAMP	Risk Assessment Mitigation Phase
RAR	remote-controlled automatic reclosers
RAWS	Remote Automated Weather Stations
RCRC	Rural County Representatives of California
REACH	Relief for Energy Assistance through Community Help
REFCL	Rapid Earth Fault Current Limiter

RFW	Red Flag Warnings
ROW	Right-of-Way
Santa Rosa	The City of Santa Rosa
SAWTI	Santa Ana Wildfire Threat Index
SB901	Senate Bill 901
SBUA	Small Business Utility Advocates
SCADA	Supervisory Control and Data Acquisition
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SE D	Commission's Safety and Enforcement Division
SIMP	Substation Inspection and Maintenance Program
SIPT	Safety and Infrastructure Protection Teams
S-MAP	Safety Model Assessment Proceedings
SOB	Standard Operating Bulletin
Sonoma	County of Sonoma
SOPP	Storm Outage Prediction Model
SoCalGas	Southern California Gas Company
SmartMeter	Brand Name for Automated Metering Initiative
SME	Subject MaTTER Experts
Sunrun	Sunrun Inc.
Startrans	Startrans IO, LLC
T&D	SCE's Transmission and Distribution business unit
TBC	Trans Bay Cable LLC
TICII	Transmission Infrared and Corona Inspection Initiative
TIMP	Transmission Inspection and Maintenance Program
TURN	The Utility Reform Network
UAS	Advanced Unmanned Aerial Systems
UAV	unmanned aerial vehicle
UDI	Underground Inspection Program
USFS	U.S. Forest Service
USGS	United States Geological Survey
VM	Vegetation Management

WAPA	Western Area Power Administration
WCCP	Wildfire Covered Conductor Program
WEIMAR	Western Energy Institute Mutual Assistance Roster
WECC	Western Electricity Coordinating Council
WMP or Plan	Wildfire Mitigation Plan
WRF	Weather Research and Forecasting
WRMAG	Western Region Mutual Assistance Agreement for Electric Utilities
WSIP	Wildfire Safety Inspection Program
WSOC	Wildfire Safety Operations Center
WSP	Wildfire Safety Plan
Zuma Beach	Hans Laetz on behalf of Zuma Beach FM Broadcasters

(**END OF APPENDIX C**)