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Exhibit No.: Liberty-04
Witnesses: Eliot Jones



(U 933-E)

2022 General Rate Case

Before the California Public Utilities Commission

Chapter 4: Wildfire Mitigation Plan

Tahoe Vista, California

May 28, 2021

Liberty-04: Wildfire Mitigation Plan

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Liberty-04: Wildfire Mitigation Plan

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1 I.

2 **WILDFIRE MITIGATION PLAN**

3 **A. Introduction**

4 **1. Scope and Purpose**

5 Presented in this chapter is Liberty Utilities (CalPeco Electric) LLC (“Liberty”) capital
6 and O&M expense forecast for programs related to Liberty’s Wildfire Mitigation Plan (“WMP”).
7 Over the last few years, Liberty has developed a comprehensive WMP that enhances its wildfire
8 prevention and mitigation efforts through augmenting or expanding existing programs and
9 developing and implementing new programs. Liberty’s overarching WMP goal is to prevent and
10 mitigate the risk of wildfires caused by utility equipment. Liberty shares the Wildfire Safety
11 Division’s (“WSD”) risk reduction intent of its WMP to reduce ignition probabilities and
12 minimize the societal consequences (with specific consideration to the impact on Access and
13 Functional Needs populations and marginalized communities) of both wildfires and the
14 mitigations employed to reduce them, including Public Safety Power Shutoff (“PSPS”) events. In
15 this GRC, Liberty requests all WMP-related capital and O&M forecast expenses are found
16 reasonable and adopted by the California Public Utilities Commission (“CPUC”).

17 **2. Summary of WMP Capital and O&M Request**

18 Liberty requests \$86.173 million of WMP capital expenditures for years 2021-2024 and
19 \$16.253 million for test year 2022 WMP O&M expenses. See Table 4-1 for the capital
20 expenditure request by WMP program and/or project. In addition, Table 4-2 shows recorded
21 O&M expenses for 2019 and 2020 compared to estimates for 2021 through 2024.

**Table 4-1 WMP Capital Expenditures
(\$000)**

Project Name	2021	2022	2023	2024
Covered Conductor	19,664	10,197	13,201	10,851
Pole Replacements	10,500	2,500	2,500	2,500
Fuse Replacements	867	891	915	940
Tree Attachments	664	682	701	720
Wire Upgrades	600	350	350	350
Auto Reclosers	300	360	360	90
CALFire Exempt Hardware	-	500	500	500
Substation Animal Guarding	804	804	-	-
Emerging Technologies	200	200	200	200
Weather Stations	120	15	15	15
DFA	50	100	50	50
HIFD	-	100	100	100
LiDAR	400	-	-	-
T&E	98	-	-	-
Total Wildfire Mitigation	34,267	16,698	18,892	16,316

**Table 4-2 - WMP O&M Expenses
(\$000)**

WMP Category Name	Recorded and Adjusted O&M Costs		Forecasted O&M Costs			
	2019	2020	2021	2022	2023	2024
Risk Assessment and Mapping	-	67	10	10	10	11
Situational Awareness and Forecasting	-	44	125	127	130	132
Grid Design and System Hardening	0	20	-	-	-	-
Asset Management and Inspections	-	-	-	325	331	338
Vegetation Management and Inspections	5,625	11,415	13,180	13,785	14,051	14,323
Grid Operation and Operating Protocols	144	279	250	-	-	-
Data Governance	-	1	418	457	466	475
Resource Allocation Methodology	-	-	-	-	-	-
Emergency Planning and Preparedness	132	502	900	1,229	1,253	1,277
Stakeholder Cooperation and Community Engagement	-	103	307	319	325	331
TOTAL	5,902	12,432	15,189	16,253	16,567	16,886

1 **3. Support for Request**

2 Liberty’s expense forecast for its WMP programs are reasonable and fully justified

3 because the work is necessary to:

- 4 • Prevent and mitigate the risk of wildfires caused by utility equipment and reduce
- 5 ignition probabilities;
- 6 • Construct, maintain, and operate its electric system in a manner that minimizes the
- 7 risk of catastrophic wildfire posed by its electric power lines and equipment;
- 8 • Minimize the societal consequences (with specific consideration to the impact on
- 9 Access and Functional Needs (“AFN”) populations and marginalized communities)
- 10 of both wildfires and the mitigations employed to reduce them, including Public
- 11 Safety Power Shutoff (“PSPS”) events.

12 **B. WMP Overview**

13 Liberty’s WMP is an actionable plan that is being fully implemented and integrated into

14 Liberty’s daily operations and will be an effective source to track risk reduction and improve

15 efficiency through innovative system technologies. Because of the Wildfire Safety Division’s

16 (“WSD”) detailed requirements and strict compliance guidelines, Liberty has entirely re-

17 engineered business processes since 2019 and its general outlook on implementing and planning

18 wildfire mitigation projects and efforts. In 2020, Liberty established a well-defined accounting

19 structure to separately track WMP-related costs at the initiative level for purposes of measuring

1 implementation and progress on mitigation efforts apart from standard operations.¹ Liberty is
2 also in the process of re-engineering and upgrading its geospatial interface systems (“GIS”) and
3 reporting capabilities to comply with WSD’s requirements of mapping overhead assets and
4 transmittal of data to WSD.² The Commission should note that the required investment and level
5 of commitment of a small utility to comply with WMP’s rigid work requirements, including
6 creation of a sophisticated wildfire risk modeling, has been a tremendous task that Liberty’s
7 management takes very seriously. In this chapter, Liberty describes its efforts and costs related
8 to the major WMP programs and projects, including a detailed financial forecast to support its
9 O&M and capital request.

10 Over the next 10 years, Liberty plans to make significant strides in further reducing
11 wildfire risk in its service territory, including aggressive long-term plans for mitigating PSPS
12 impacts on customers. Liberty plans to develop proactive asset replacement programs as part of
13 its grid hardening efforts for addressing its aging infrastructure that will help reduce the
14 probability of asset failures in service. In the future, the plan will include a targeted approach for
15 asset (and vegetation) inspections and replacements, at the segment level, based on risk-informed
16 data collected through LiDAR technology, situational awareness tools and assessments, and
17 Reax fire mapping. By targeting asset repairs (tree work) and replacements, the overall objective
18 is to, in the near term, allow management to assess asset and tree risk at a localized level in order
19 to make informed business decisions to most effectively mitigate wildfire risk. Grid hardening
20 efforts also include replacing overhead lines with covered conductor to protect high fire risk

¹ Recorded WMP-related expenses are tracked in the WMPMA and Liberty will seek recovery of costs through 2021 in a separate application.

² Liberty is undergoing an enterprise-wide roll out of an updated GIS platform that is expected in late 2021. The updated GIS is intended to meet the WSD WMP reporting requirements.

1 areas during volatile weather events and building resiliency corridors. Liberty’s overall resiliency
2 program is still in its conceptual phase, but initial plans include installation of microgrids in
3 targeted high fire risk areas. The combination of covered conductor installations, resiliency
4 corridors, and microgrids will greatly reduce impacts and frequency of PSPS events and service
5 interruptions.

6 **C. WMP Programs**

7 The following provides descriptions of Liberty’s WMP initiatives by initiative category.

8 **1. Risk Assessment and Mapping**

9 In 2020, Liberty established its general risk mapping and wildfire risk models to allow
10 the company to incorporate objective, quantitative analysis into its decision-making regarding all
11 wildfire risk drivers.

12 **2. Ongoing Analysis and Data Tracking**

13 In 2021, Liberty plans to update data into its wildfire models and GIS risk maps. This
14 update will include data obtained through Liberty’s consultant Reax's propagation models, as
15 well as internal data points from risk-drivers and inspections. Liberty will continue to explore
16 technologies and anticipates new capabilities for wildfire risk modeling and use of more
17 affordable real-time monitoring solutions.

18 Through 2023, Liberty plans to continue working with Reax to refine fire spread
19 modeling consequence in its wildfire risk modeling process. This includes integrating updated
20 data into the analysis used for Liberty’s wildfire risk models. Liberty also plans to focus
21 internally on its own Risk Based Decision Modeling (“RBDM”) capabilities by adding more
22 resources to aid in leveraging technical skills and quality assurance/quality control validation.
23 Liberty anticipates greater technological advancement, as well as the maturity, quality, and

1 robustness of the company's datasets, to give more accurate predictive capabilities in its wildfire
2 risk models.

3 **3. Situational Awareness and Forecasting**

4 Liberty accomplished the following related to Situational Awareness and Forecasting
5 WMP initiatives in 2020:

- 6 • Installed 19 weather stations equipped with fuel moisture sensors in and across High
7 Fire Threat Districts. Liberty’s advanced weather monitoring program improves
8 situational awareness by providing weather information to operations and allows for
9 the safe operation of the electric grid during extreme weather events. Continuation of
10 this program reduces the likelihood of avoidable customer outages and probability of
11 ignitions risk with continuous weather monitoring. Enhanced real-time weather
12 monitoring data provides an important tool to help Liberty plan for operating
13 activities during such extreme events and the data from these weather stations
14 provides support for Liberty’s Public Safety Power Shutoff (“PSPS”) and Fire
15 Potential Index (“FPI”) tools.
- 16 • Liberty installed SCADA controls to four additional reclosers, deployed Tripsavers to
17 one feeder, and is working to implement the ALERTWildfire camera network
18 partnership. The primary benefit of continuous monitoring sensors is to enhance
19 visibility of the system and system reliability. The ability to quickly determine fault
20 and outage locations allows dispatchers to quickly deploy resources to evaluate and
21 resolve system issues. Another benefit of continuous monitoring systems is providing
22 a faster response to an ignition event. Aclara sensors (SCADA controls) record
23 continuous line disturbances, which can be analyzed and repaired before an issue

1 leads to an ignition. Tripsavers are an effective tool during high fire threat days with
2 their one-shot (fire mode) capability. ALERTWildfire cameras provide opportunity
3 for early detection of ignitions and provide opportunity to view areas where a fault
4 may have occurred. The ALERTWildfire camera network has grown significantly
5 throughout California and other western states in large part due to partnerships with
6 electric utilities. Over the last few years, these cameras have proven their value and
7 have become an integral part of fire detection and monitoring during fire season in
8 California. With more cameras, improving technology, and more partnerships, the
9 capabilities of the ALERTWildfire network will continue to improve on an already
10 successful platform.

11 • Liberty developed and implemented its Fire Potential Index (“FPI”) assessment tool
12 in late 2020. Liberty’s FPI is a comprehensive assessment tool designed to heighten
13 awareness of daily forecast fire conditions to aid in operational decision making. FPI
14 converts environmental, statistical, and scientific data into an easily understood
15 forecast of short-term fire threat for Liberty’s service territory. FPI forecasts up to
16 seven days of fire threat potential. Liberty uses FPI for fire threat awareness and
17 operational decision-making. The FPI provides a seven-day fire risk condition
18 forecast for 11 geographic zones within the service territory. FPI condition forecasts
19 include five risk conditions (Low, Moderate, High, Very High, and Extreme) that are
20 used as a means to determine operating procedures, by zone, depending on the
21 forecast fire risk. FPI condition forecasts are communicated to field staff on a daily
22 basis to inform operational decisions when work restrictions are in place due to fire
23 risk. Prior to the development of FPI, Liberty did not have any specialized fire risk

1 prediction tools, which meant less overall awareness of day-to-day fire risk. There are
2 11 FPI zones, covering Liberty’s entire service territory, with individual fire risk
3 forecasts for each zone. This forecasting granularity provides a better understanding
4 of the overall fire risk throughout the service area and allows for better decision-
5 making in scheduling work by zone. FPI was developed for Liberty’s service territory
6 based on San Diego Gas & Electric Company (“SDG&E”) and Pacific Gas & Electric
7 Company (“PG&E”) methodologies. Factors considered include climatological,
8 geographical, and fuel source conifer and timber understory fuels in Liberty’s service
9 territory. FPI calculations include fuel moisture (both dead and live), “green-up”
10 factor, ambient temperature, relative humidity, Fosberg Fire Weather Index, and
11 Burning Index, among other factors. This work led to the establishment of the number
12 of FPI classes as well as the fuel and weather criteria that delineate FPI classes.

13 In 2021, Liberty plans to finalize the partnership with ALERTWildfire, identify potential
14 enhancements to fire weather forecasting tools, install an additional 10 weather stations and
15 incorporate into the weather monitoring network, deploy Distribution Fault Anticipation
16 (“DFA”) technology, and evaluate new situational awareness tools.

17 Through 2023, Liberty plans to evaluate the effectiveness of the DFA program and
18 determine if it is necessary to add to more circuits. Liberty will also add any weather stations if
19 gaps in the weather network are identified and will incorporate ALERTWildfire cameras into
20 predictive wildfire risk modeling work. As situational awareness and forecasting technology
21 advances, Liberty will explore utilizing technologies that will increase situational awareness and
22 forecasting capabilities.

1 **4. Grid Design and System Hardening**

2 In 2020, Liberty conducted a system-wide inventory of all overhead assets that included
3 enhanced G.O. 165 inspections. From this survey, Liberty now has a third-party assessment of
4 the entire overhead system that can be used to develop programs to proactively replace its aging
5 infrastructure. This information, although in its early development, will be used to measure
6 future wildfire risk reductions.

7 Grid hardening efforts also include replacing overhead lines with covered conductor to
8 protect high fire risk areas during volatile weather events. Liberty completed 6.82 miles of
9 covered conductor in High Fire Threat District (“HFTD”) Tier 2 areas in 2020. Liberty has
10 developed a resiliency program, with initial plans including the installation of microgrids in
11 targeted high fire risk areas. The combination of covered conductor installations, resiliency
12 corridors, and microgrids will greatly reduce impacts and frequency of PSPS events and service
13 interruptions.

14 In 2021, Liberty plans to repair and replace assets identified in the System Survey to
15 strengthen its overall system performance, including 80% of the pole replacements for tier 2
16 System Survey results. Liberty plans to award contracts for five planned covered conductor jobs
17 (Lily Lake, Cathedral Park, Angora Ridge, Bridge Tract and 7300 Phase 6) and to replace five
18 Oil Circuit Breakers (“OCB”) at the Tahoe City and Squaw Valley substations. Liberty plans to
19 commence with construction for the Topaz Phase 6 and Brockway 4202 Resilience Project and
20 have 100% of the design completed for all 2022 covered conductor projects. Liberty also plans to
21 complete the design of the Portola substation rebuild. Liberty will review design standards with
22 G.O. 95 and see if improvements can be made for resiliency.

1 Through 2023, Liberty plans to establish asset replacement programs for equipment
2 guards, conductor covers, and open jumpers. Liberty plans to utilize risk modeling to identify
3 additional covered conductor projects. Liberty will complete the Stateline and Squaw Valley
4 substation rebuild projects to remove old oil equipment and wood structures. Liberty will
5 continue to identify areas for battery storage and/or microgrids for wildfire mitigation and
6 system resiliency.

7 **5. Asset Management and Inspections**

8 As mentioned above related to Grid Design and System Hardening WMP initiatives, in
9 2020, Liberty utilized a contractor to perform a system-wide survey of overhead system assets to
10 collect a complete list of equipment attached to poles and to perform detailed visual inspections.
11 Data, including pictures and GPS coordinates, was collected via hand-held devices to be utilized
12 for improving accuracy of the GIS. Liberty purchased licenses for the Fulcrum mobile
13 application to transition from paper-based to electronic inspection records. The system-wide
14 survey data has generated a significant number of G.O. 95-related repairs that Liberty is working
15 to complete. The survey also revealed that improvements to various processes, including tracking
16 of field changes, need to be made, so the system maintains a high level of accuracy.

17 In 2021, Liberty plans to complete scheduled asset inspections and continue to develop
18 and improve the processes around digital based inspections that were introduced in 2020 to
19 support inspection activities. Liberty also plans to finalize a Request for Proposals (“RFPs”) for
20 infrared asset inspections and quality assurance pilot programs.

21 Through 2023, Liberty will maintain compliance with asset inspections regulations by
22 performing scheduled inspections. Liberty will transition to new enterprise-wide GIS mobile
23 application for asset inspections. Liberty plans to establish a robust quality assurance/quality

1 control program for asset inspections. Additionally, Liberty plans to implement RBDM when
2 scheduling asset inspections in high-risk areas.

3 **6. Vegetation Management and Inspections**

4 See Chapter 7 for information on Liberty’s Vegetation Management Program.

5 **7. Grid Operation and Operating Protocols**

6 In 2020, Liberty developed and implemented PSPS operations and communications
7 protocols. These protocols, in combination with the development of the FPI and PSPS
8 forecasting tools have helped to inform day-to-day operational decision-making. Liberty’s newly
9 developed FPI has been incorporated into its Fire Prevention Plan, which details work
10 procedures that must be followed based on fire risk conditions. The plan is utilized daily during
11 fire season to inform operational decisions. Developing PSPS protocols, holding table top
12 exercises, and training for PSPS events prepare Liberty for potential future PSPS events.

13 Liberty plans to install three additional automatic reclosers in 2021, identify three
14 locations for installations in 2022, and continue to install and/or upgrade reclosers at the rate of
15 three per year. Liberty plans to begin implementation of its Distribution Automation (“DA”)
16 scheme in 2021 and continue to implement the DA scheme across the Tahoe Basin and explore
17 its use to other parts of Liberty’s service territory over the next few years. The installation of
18 fault detection devices, automatic reclosers, SCADA, and sectionalizing equipment will improve
19 overall system operations, flexibility, and customer interruptions. Liberty will continue to track
20 risk drivers based on fault detection monitoring and analysis.

21 **8. Data Governance**

22 The System Survey asset inventory completed in 2020 provides the basis of a fully
23 functioning asset management system that can be used for prioritizing future work based on

1 Reax mapping and level findings. Design and testing of cloud-based forms for data collection
2 was implemented for this purpose in addition to the establishment of the wildfire risk SharePoint
3 dedicated location and utilization of other visual mapping applications. Utilization of digitally
4 distributed field collection forms in 2020 allowed Liberty to collect, store and analyze more
5 System Survey results than in the previous five years combined. This moved Liberty closer to
6 total digital systems adoption for surveys and is providing a means of responding to infractions
7 with increased speed, volume, and improved accuracy. During this process, Liberty recognized
8 that training initiatives, increased integration of data sources, and workflow advancement would
9 assist Liberty to further leverage data governance upgrades and adoption of new technologies.
10 Furthermore, the ability to maximize high quality business information based on key
11 performance measures at Liberty promotes continual process improvement, change management,
12 and more technology-based awareness/skills programs.

13 Throughout 2021, Liberty will continue to work to standardize monthly, quarterly and
14 annual reporting and analysis to comply with Wildfire Safety Division requirements. Over time,
15 Liberty seeks greater automation of standardized reporting.

16 **9. Resource Allocation Methodology**

17 In 2020, Liberty formed a team to establish risk modeling capabilities. Liberty has
18 incorporated its risk mapping information into its G.O.95 inspection targets. Liberty is
19 committed to increasing its focus on integrating risk and quantitative analysis into its capital and
20 O&M budgeting process and plans to hire additional resources for the RBDM initiative in 2021.
21 Liberty will continue to improve its ability to build, revise, and validate its wildfire risk models.
22 Liberty is dedicated to evaluating enterprise-wide risk and enhancing communication and
23 continual development and refinement of its utility wildfire risk.

1 **10. Emergency Planning and Preparedness**

2 Liberty filled the key positions of Emergency Manager and Fire Protection Specialist in
3 early 2020. The Emergency Manager oversees all emergency response-related activities and
4 public safety partnership engagements. The Fire Protection Specialist oversees fire prevention
5 initiatives, serving as the company liaison for first responders and public safety partners and
6 coordinating training for all employees and contractors. Liberty developed comprehensive
7 operations and communications PSPS playbooks that detail operational and communications
8 protocols to be undertaken in each of the five stages of response to extreme wildfire threat
9 conditions, including de-energization and re-energization. Liberty hosted 29 meetings with
10 public safety partners to provide details on Liberty’s wildfire mitigation, PSPS preparedness, and
11 community outreach effort, held nine regional PSPS workshops and three PSPS tabletop
12 exercises and hosted seven regional virtual town halls to provide a localized update on wildfire
13 safety work happening in respective communities. Additionally, Liberty conducted training and
14 updated personnel work procedures in conditions of elevated fire risk for field personnel.

15 Throughout 2021, Liberty plans to conduct Incident Command (“IC”) Training for all
16 identified IC members, hold a Virtual PSPS Table Top exercise, conduct virtual Town Halls in
17 seven communities in Liberty’s service area, and meet with Community Advisory Boards in four
18 service areas: Sierra and Plumas Counties, Placer County, El Dorado County, and Alpine and
19 Mono Counties.

20 Through 2023, Liberty will continue to deploy Community Resource Centers (“CRCs”),
21 and continue to maintain emergency response plans with increased granularity and customization
22 of response plans. Liberty will continue engagement with local stakeholders to prepare for and
23 respond to fire-related events.

1 **11. Stakeholder Cooperation and Community Engagement**

2 In 2020, Liberty expanded its public education and outreach efforts associated with its
3 WMP. Safety and resiliency communications were part of Liberty’s territory-wide public
4 education campaign. These communications focused on personal preparedness and community
5 resiliency. Additionally, Liberty hosted 29 meetings with public safety partners to provide details
6 on Liberty’s wildfire mitigation, PSPS preparedness, and community outreach effort; held nine
7 regional PSPS workshops and three PSPS tabletop exercises; hosted seven regional virtual town
8 halls to provide a localized update on wildfire safety work happening in respective communities;
9 sent bill inserts and direct mailers to customers; and conducted three customer e-mail outreach
10 campaigns.

11 In 2021, Liberty plans to distribute PSPS, wildfire and readiness messaging through CBO
12 partnerships, social media, email and digital channels. Liberty will continue to identify Access
13 and Functional Needs (“AFN”) populations and medical baseline customers and enhance
14 communication channels. Liberty will expand opportunities to extend and amplify messaging
15 through Community Based Organizations (“CBO”) and other support groups and will complete
16 virtual town halls and PSPS workshops.

Appendix A
Witness Qualifications

LIBERTY UTILITIES (CALPECO ELECTRIC) LLC
QUALIFICATIONS AND PREPARED TESTIMONY
OF ELIOT JONES

1 Q. Please state your name and business address for the record.

2 A. My name is Eliot Jones and my business address is 701 National Avenue, Tahoe Vista,
3 California 96148.

4 Q. Briefly describe your present responsibilities at Liberty Utilities (CalPeco Electric) LLC.

5 A. I am the Senior Manager of Wildfire Prevention for Liberty Utilities (CalPeco Electric)
6 LLC.

7 Q. Briefly describe your educational and professional background.

8 A. I have been the Senior Manager of Wildfire Prevention for Liberty Utilities (CalPeco
9 Electric) LLC since 2019. Prior to that, I was the Vegetation Program Manager at Liberty
10 Utilities (CalPeco Electric) LLC for 3 years and was responsible for Liberty CalPeco's
11 Vegetation Management Program.

12 Q. What is the purpose of your testimony in this proceeding?

13 A. The purpose of my testimony in this proceeding is to sponsor Chapter 4: Wildfire
14 Mitigation.

15 Q. Was this material prepared by you or under your supervision?

16 A. Yes, it was.

17 Q. Insofar as this material is factual in nature, do you believe it to be correct?

18 A. Yes, I do.

19 Q. Insofar as this material is in the nature of opinion or judgement, does it represent your
20 best judgement?

1 A. Yes, it does.

2 Q. Does this conclude your qualifications and prepared testimony?

3 A. Yes, it does.