Docket : A.25-06-017
Exhibit Number : CA-09
Commissioner : M. Baker
Admin Law Judge : R. Haga
Witness : A. Louie

PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

TESTIMONY ON VEGETATION MANAGEMENT FOR MOUNTAIN VIEW FIRE COST-RECOVERY APPLICATION

Reasonableness of Vegetation Management Operations Prior to Ignitions

San Francisco, California
December 12, 2025

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VEGETATION MANAGEMENT

I. INTRODUCTION

This exhibit pertains to the application of Liberty Utilities (CalPeco Electric) LLC, ("Liberty") to recover costs associated with the Mountain View Fire (Application 25-06-017).[1]

This testimony presents the analyses of the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) regarding the reasonableness and prudence of Liberty's vegetation management operations in the time period leading up to the Mountain View Fire ignition.

This exhibit primarily addresses matters covered in Exhibit Liberty-03, Liberty's testimony on prudence of operations relating to Liberty's vegetation management practices and procedures. Cal Advocates' review of Liberty's vegetation management practices found that vegetation was not direct cause of the fire, and Liberty conducted vegetation work and inspections on the Topaz 1261 Circuit. However, at the time of the ignition, Liberty was still in the process of improving its quality control (Q/C) audits processes, indicating that Liberty's management of vegetation work inspection was deficient in the 9 years since Algonquin Power & Utilities Corp. acquired NV Energy's California assets in 2011.[2]

II. VEGETATION MANAGEMENT INSPECTIONS AND PROGRAMS

This section of testimony summarizes Liberty's vegetation management inspections and programs in the area surrounding the Topaz 1261 Circuit, Subject span, and pole ignition location.[3,4] Such inspections and programs are intended to

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[1] Exhibit (Ex.) Liberty-03: Prudence of Operations at 24 to 31.

[2] Ex. Liberty-03 at 13.

[3] Ex. Liberty-03 at 7. The "Subject Span" refers to the span between Pole 266731 also known as the "West" Pole" and Pole 40288, also known as the "East" Pole.

[4] The "pole ignition locations" refers to Pole 266731 also known as the "West" Pole and pole 40288 also known as the "East" Pole.

allow Liberty to be aware of vegetation conditions that may increase the risk of a catastrophic wildfire and to make informed decisions to prevent wildfire ignitions.

A. Liberty's Vegetation Management Programs Addressed Vegetation Risk Of The Subject Span And Subject Poles Related To The Mountain View Fire Ignition Location.

During September and October 2020, the two months prior to the Mountain View Fire, Liberty conducted vegetation management inspections and mitigation work to address the vegetation clearances around the electrical equipment at the location of the Mountain View Fire ignition.[5] Liberty hired and used contractors to perform its vegetation management inspections and mitigation work when the Mountain View Fire ignition occurred.[6] The following subsections summarize the types of work performed.

1. Light Detection and Ranging (LiDAR) Vegetation Inspections

Light Detection and Ranging (LiDAR) inspections are a remote sensing method that uses light in the form of a pulsed laser to measure variable distances.[7] These inspections are used as a tool by electric utilities so they can precisely measure the clearances between electric facilities and nearby objects such as vegetation or other facilities. This can be used to identify high-risk zones of vegetation density or fuel load, which may increase fire potential.

In October 2020, Liberty conducted a LiDAR scan of its line miles in Tier 3 High Fire Threat District (HFTD) areas to evaluate vegetation clearances along its electrical equipment.[8,9] On October 3, 2020, Liberty completed a LiDAR vegetation

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[5] Ex. Liberty-03 at 29-31.

[6] Ex. Liberty-03 at 24 and 30.

[7] Attachment 1, Liberty Utilities, Cal Peco Electric LLC U 933-E 2021 Wildfire Mitigation Plan Update (Liberty 2021 WMP Update), March 5, 2021 (Attachment 1), at 158.

[8] Ex. Liberty-03 at 29.

[9] Attachment 1 at 5. "Per D.17-01-009, areas of the State designated by the CPUC and CAL Fire to have elevated wildfire risk, indicating where utilities must take additional action (per G.O. 95, G.O. 165, and G.O. 166) to mitigate wildfire risk."

inspection on the "Subject Span." This inspection indicated that the span was "clear," meaning that no vegetation was detected within 12 feet of the conductors.[10] This October 3, 2020, LiDAR vegetation inspection was conducted roughly one month prior to the Mountain View Fire ignition.[11]

2. Pole Clearing Vegetation Inspections and Work

Pole clearing work helps ensure electrical system reliability by maintaining clearances between vegetation and electrical infrastructure. Pole clearing also helps in minimizing ignition risks as it clears an area of defensible space around electrical equipment.

In addition to the LiDAR scan of its line miles in 2020, Liberty claims its contractors conducted pole clearing work on electrical equipment to be compliant to requirements of Public Resource Code (PRC) section 4292.[12,13] Liberty's contractors performed pole clearing work on only one of the two poles in question at the Mountain View Fire ignition location. Both poles, 266731 (the "West Pole") and 40288 (the "East Pole"), had pole clearing inspections conducted on September 23, 2020, by one inspector.[14] These September 23, 2020, pole clearing inspections occurred roughly two months prior to the Mountain View Fire ignition.[15]

Liberty provided the West Pole's clearing record, which indicates the location of the pole, date inspected, and what type of mitigation work that was needed on the

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[10] Attachment 2, Liberty Response to CalAdvocates-LIB-A2506017-005, September 4, 2025 (Attachment 2), question 1(a).

[11] Attachment 2, question 1(a).

[12] Ex. Liberty-03 at 30.

[13] Public Resource Code section 4292 requires that "any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest-covered land, brush-covered land, or grass-covered land shall . . . maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower.".

[14] Attachment 2, question 1(a), Excel Attachment "*CalAdvocates-LIB-A2506017-005-Q.xlsx1*".

[15] Attachment 2, question 1(a).

West Pole.[16] It is also important to note that the West Pole has previously required vegetation clearing work pursuant to regulations.[17] In an audit report discussed further in testimony below, it was observed that pole clearing contractors were using insufficient methods for ground vegetation removal, which allowed vegetation to re-sprout after clearing.[18]

Figure 1 is a picture that shows the West Pole and the vegetation clearing work that was required. Figure 2 is a picture that shows the completion of the pole clearing work with the vegetation cleared around the West Pole. Comparatively, the East Pole does not have a pole clearing record due to the lack of vegetation growth within a ten-foot radius of the pole.[19] Figure 3 is an aerial view of both the West Pole and East Pole, showing that the East Pole lacked vegetation growth in the surrounding area.

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[16] Attachment 2, question 1(a), Excel Attachment "*CalAdvocates-LIB-A2506017-005-Q.xlsx1*".

[17] Attachment 2, question 1(a).

[18] Attachment 2, Liberty Utilities Pole Clearing and Tree Work Audit 2020 (Liberty Audit Report), November 20, 2020 at 19.

[19] Attachment 2, question 1(a).

Figure 1:
Picture of the West Pole prior to Pole Clearing Work on September 3, 2020[20]

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[20] Attachment 3, Liberty Response to CalAdvocates-LIB-A2506017-020, October 14, 2025 (Attachment 3), question 1, PDF Attachment “CalAdvocates-LIB-A2506017-020-Q1.pdf.”

for this particular program – community core - the programmatic investments will be focused on grid-sided assets and controls.

Considering the size of the Liberty territory, this model may focus on four to five locations throughout the territory. For example, Kings Beach, located in the North Lake Tahoe resiliency corridor, is already underway with planned construction in 2021. The project includes the installation of covered conductors between 12 MW of existing diesel generation at Kings Beach substation and HWY 28 to keep underground portions of the Kings Beach community energized. Additional facilities and investigation could also create greater resiliency for this key community core.

4.2.2 Program Process

This approach provides heavy technical assistance and support to specific community cores as they explore the option for microgrids. Liberty's suggested steps leverage the work already completed by the PG&E Community Microgrid Enablement Program[8]:

- **Step 1. Vetting and determining feasibility.** Liberty will work with community representatives that are seeking a resiliency solution for a community core. Liberty will utilize a team of resilience specialists that will help the community understand options available to them and share basic grid characteristics in the area that may impact the extent of likely upgrades needed under different scenarios. Feasibility criteria is not limited but may include the following:
    - Facility Composition: Locations with a concentration of 'critical' facilities are scored high
    - Historical Reliability/PSPS Risk Profile: Locations with lower historical reliability and high PSPS risk are scored highest
    - DER Penetration: Locations with high DER penetration is favorable such as potential for District Energy thermal with combined heat and power, biomass, etc.
    - Stackable benefits: DER integration, load shifting/smoothing, voltage/frequency regulation
    - Avoid/defer system upgrades: The closer the existing equipment is to its maximum rating, the more favorable the location
    - Land available/site prep: Practical deployment considerations such as the availability of land and the complexity of site preparation
- **Step 2. Solution identification.** In this step, Liberty will provide more specific technical guidance and support to the community and its technical/engineering partner(s) according to the type of resilience solution being sought. Liberty
- may require more detailed information about the core facilities and their loads as well as any service planning upgrades needed. Solution identification support could include the following:
    - Training on grid data tools;
    - Limited microgrid design support;
    - Tariff application guidance, if applicable;
    - Tariff and interconnection policy support;
    - Investigation into energy efficiency opportunities, additional controllable loads, and potential for demand response; and
    - Microgrid Islanding Study ("MIS") and consultation, if applicable

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[8] https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC_5918-E.pdf

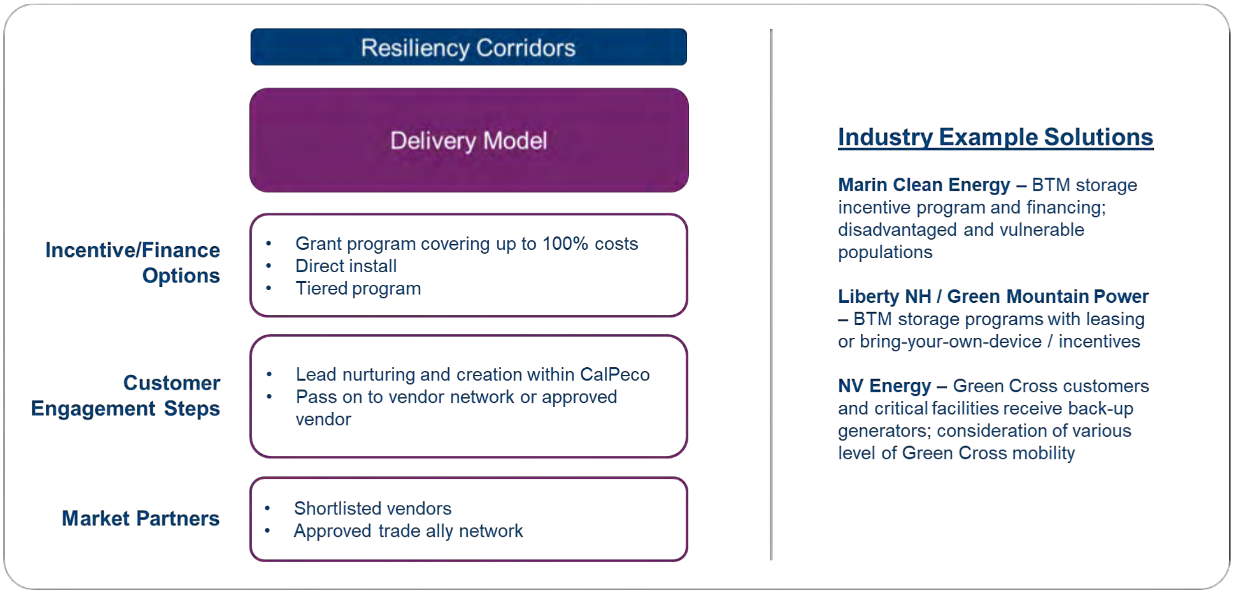
- **Step 3. Execution.** In this step, Liberty will provide continuing support for eligible multi-customer solutions up to project commissioning. Liberty's Resilience Specialists will provide ongoing program management and coordination. This may include: support with necessary agreements (Microgrid Operating Agreement ("MOA") and Special Facilities Agreement ("SFA")) to obtain eligible cost offsets for special facilities and control and communication integration support. Liberty would engage with different market actors support implementation of the microgrid, this could be done through a shortlist of approved microgrid developers, RFI's or even hosted within Liberty as an engineering, procurement, contractor (EPC) engagement.

4.2.3 Financing and Ownership Options

In this program, the utility would most likely own the assets as well as the infrastructure upgrades required to make the community core resilient. Cost-recovery would be aimed at non-generating assets where feasible, such as microgrid controllers and other grid-side support technologies. The benefits would be correlated to the community core and values identified, such as the social and utility benefits derived from the system. This could be avoided cost associated with distribution and transmission deferral as well as resource adequacy or arbitrage participation in other markets.

4.3 Program 2: Medical Baseline Customers: Behind-the-Meter Resiliency

Program path 2 will provide resiliency services to medical baseline customers. For those medical baseline customers within the resiliency corridor, Liberty Resiliency Specialists will determine if additional redundancy is necessary for those customers to stay online during an event. The technology most applicable for this model would likely be lithium-ion batteries paired with solar to enable longer duration support during an outage. The resiliency duration for these customers may be a bit longer in time but specifics will be determined as Liberty investigates average loads and critical devices of the customers.



Resiliency Corridors

Delivery Model

Incentive/Finance Options
- Grant program covering up to 100% costs
- Direct install
- Tiered program

Customer Engagement Steps
- Lead nurturing and creation within CalPeco
- Pass on to vendor network or approved vendor

Market Partners
- Shortlisted vendors
- Approved trade ally network

Industry Example Solutions

Marin Clean Energy – BTM storage incentive program and financing; disadvantaged and vulnerable populations

Liberty NH / Green Mountain Power – BTM storage programs with leasing or bring-your-own-device / incentives

NV Energy – Green Cross customers and critical facilities receive back-up generators; consideration of various level of Green Cross mobility

Figure 9. Liberty Program 2 Elements

4.3.1 Program Process

Medical baseline customers would participate in the Program through the following suggested steps:

- **Step 1. Complete customer screening.** The medical baseline customers would be screened for participation prior to the lead list being developed. Eligibility would be tiered, similar to NV Energy's Natural Disaster Protection Plan[9], where those medical baseline customers unable to leave their homes would be prioritized.
- **Step 2. Develop lead list and lead nurture.** Resilience Specialists would develop the lead list and nurture leads, engaging and supporting customers through the application process.
- **Step 3. Determine market actors.** Liberty would either create a shortlist of qualified battery storage developers or issue an RFP that would match the specifications required for these customers and eligible technologies.
- **Step 4. Direct install.** Liberty would hand over the leads to the qualified vendor(s) and apply a direct install approach to ensure that these critical customers receive backup power services quickly upon Program rollout.

4.3.2 Financing and Ownership Options

Program 2 would be delivered as a grant program where depending on the eligibility and need of the customers, they would be able to receive up to 100% incentive funds to cover the costs of the asset. Alternatively, Liberty could own the assets and shift the rate burden among all customers to support those most in need.

4.4 Program 3: Critical Facilities & Large Customers: Behind-the-Meter Resiliency

Similar to Program Path 2 for medical baseline customers, Program Path 3 will provide resiliency services to critical facilities as well as large customers to ensure cost-sharing of resiliency costs (as defined in *Section 2.3*). For those critical facilities within the resiliency corridor, Liberty Resiliency Specialists would determine if additional redundancy is necessary for those customers to stay online during an event. As with medical baseline customers, this behind-the-meter approach would most likely utilize lithium-ion battery technology paired with solar to enable longer duration support during outages. The resiliency duration for these customers would be determined after a critical load analysis is completed to understand how long duration would be required to support operations, as a hospital's need would be different than a town hall. Large customers would be considered within this program pathway as well. However, prioritization and incentive levels will vary dependent on the critical nature of the facilities.

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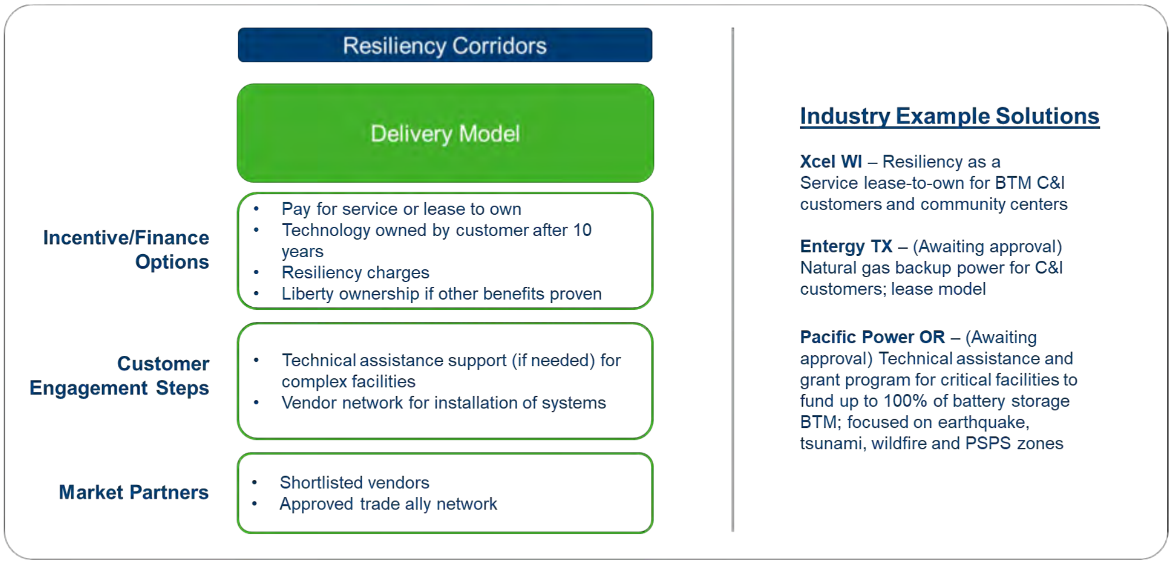
[9] http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2020-2/5119.pdf



Resiliency Corridors

Delivery Model

Incentive/Finance Options

- Pay for service or lease to own
- Technology owned by customer after 10 years
- Resiliency charges
- Liberty ownership if other benefits proven

Customer Engagement Steps

- Technical assistance support (if needed) for complex facilities
- Vendor network for installation of systems

Market Partners

- Shortlisted vendors
- Approved trade ally network

Industry Example Solutions

Xcel WI – Resiliency as a Service lease-to-own for BTM C&I customers and community centers

Entergy TX – (Awaiting approval) Natural gas backup power for C&I customers; lease model

Pacific Power OR – (Awaiting approval) Technical assistance and grant program for critical facilities to fund up to 100% of battery storage BTM; focused on earthquake, tsunami, wildfire and PSPS zones

Figure 10. Liberty Program 3 Elements

4.4.1 Program Process

Critical facilities would participate in the Program through the following suggested steps:

- **Step 1. Develop lead list and lead nurture.** Resiliency Specialists would develop the lead list and nurture leads reaching out and hosting discussions with critical facilities throughout the resiliency corridors.
- **Step 2. Customer screening and determining eligibility.** Interested customers would submit applications or interest forms to Liberty , and customer screening and eligibility determinations would be made.
- **Step 3. Complete technical assistance and feasibility.** For those facilities that require additional analysis, Resilience Specialists would support a technical feasibility study to understand sizing and siting information for the behind-the-meter storage facility.
- **Step 3. Determine market actors.** Liberty would either create a shortlist of qualified battery storage developers or issue an RFP that would match the specifications required for these customers and eligible technologies.
- **Step 4. Direct Install.** Liberty would hand over the leads to the qualified vendor(s) and support the critical facility in working with the vendor to install the battery storage systems.

4.4.2 Financing and Ownership Options

Liberty suggests using a model similar to Xcel Energy in Wisconsin for their Resiliency Service Pilot. Liberty would own, install, operate, and maintain the assets as critical facilities or with large customers. Customers would participate in an opt-in model for the resiliency services gained. Utilizing a subscription model or resiliency-as-a-service charge the customers would pay over a ten-year term through on bill charges: a) program (admin and O&M) and b) resiliency (equipment and O&M). Ownership could transfer after the ten-year term is complete. Resiliency service charges would continue after ownership transfer. The assets would be considered capital investment and rate-based. Liberty will investigate each program individually as well as the portfolio program to determine the most cost-effective option for customers.

4.5 Program Innovations

4.5.1 Connection with EVs and future DRIVE programs

The CPUC's rulemaking to continue the Development Of Rates And Infrastructure For Vehicle Electrification (DRIVE) proceeding seeks to, among other things, facilitate vehicle-grid integration (VGI) policy for all California utilities. Towards this end, the CPUC established the VGI Working Group which identified one of its policy areas as the need to accelerate use of electric vehicles (EVs) for bi-directional non-grid-export power and public safety power shut-off resiliency and backup, including for PSPS events. In their December 17, 2020, decision, the CPUC accepted the working group's recommendation and directed the large utilities to implement VGI pilots that would explore EV's role in supporting system resiliency. Liberty is not mandated to deploy these pilots but must consider VGI strategies in future transportation electrification filings.

Recognizing that 52% of the homes in the Liberty service territory are second homes and, therefore, the residents' vehicles would be registered and maintained in different jurisdictions, it is difficult to conceive of a program at this time that would fulfill the resiliency benefit presented by VGI working group. However, given the progression of the EV market, state-sponsored initiatives and general technological progress, Liberty will continue to monitor opportunities to engage VGI as a tool in its resiliency kit in future years.

5 Energy Storage System Value Streams

5.1.1 Summary

Energy storage (such as battery, CHP, backup diesel generation, etc.) can provide various benefits to both the customer and the grid, which are not necessarily mutually exclusive. In fact, these benefits can be stacked to enable a single system to capture multiple value streams. Example benefits include backup power and transmission and distribution deferral, among others.

Accurately capturing the stacked benefits of energy storage requires detailed analysis of both the operational characteristics of the storage technologies and the nature of the value streams it captures. In addition, the availability of benefits varies depending on factors such as the state regulatory landscape and utility in question. Liberty believes that there are different benefits for customers, Liberty, and society that can be stacked to support the business case for a resiliency Program. Liberty will explore the potential to capture the following value streams through the portfolio. In addition, Liberty plans to engage customers during the stakeholder feedback sessions (slated for April and May) on the value of resiliency from their perspective as needs. This will directly influence how the business case and value streams are established for the resiliency programs.

5.1.2 Customer Value Streams

- **Backup Power.** Battery energy storage provides a more resilient backup system than a standard backup generator because it reduces customer's dependency on fuel deliveries and infrastructure corridors that provide relief services during disaster events. Battery energy storage and solar components can reduce or eliminate run time and fuel usage of the backup generator, resulting in fuel cost savings and reducing risk of a failure of fuel supply occurring.
- **Demand Charge Reduction**. Many of the behind-the-meter battery energy storage systems deployed to date in the United States have been designed to provide utility bill cost reductions for customers, typically through demand charge management and/or time-of-use (TOU) cost management. A common behind-the-meter battery energy storage application is demand charge management, sometimes called peak shaving or load shifting in which battery dispatches stored energy to level demand (kW) use to reduce the associated charges on utility bills. The battery energy storage system is recharged during hours when the load is much lower, allowing the facility to stay below a demand limit and maintain cost savings. Due to inherent electrical losses of battery energy storage systems, more energy is always required to charge the battery than can be discharged. Therefore, total bill savings may come from a combination of demand charges and the cost differential between the charge and discharge energy inherent in time-of-use (TOU) rates, but also must take into account the losses.
- **Increased Renewable Self-Consumption**. Liberty does provide net metering rates to customers. Further investigation will be required, but there could be incentive for customers to increase renewable self-consumption instead of export back to the grid to recover the net metering rate.

5.1.3 Utility Value Streams

- **Transmission and Distribution Deferral.** A key aspect of the Wildfire Mitigation Plan is grid hardening. In many cases, storage can defer or avoid the need for a transmission and distribution equipment upgrade due to demand growth or even for assets at end of life. The resiliency Program will investigate how this value can support adoption of resiliency services in the Liberty territory.
- **Energy Arbitrage.** Another benefit that can be harnessed and levered by Liberty if the program gets to scale is the practice of purchasing and storing electricity during off-peak times, and then utilizing that stored power during periods when electricity prices are the highest. California has a number of ancillary markets to participate in that could provide additional revenue and support for this resiliency Program.
- **Resource Adequacy.** Similar to the above, Liberty could also utilize the storage resources as resource adequacy. However, if storage primary use is for resiliency, dedicated resources may need to be added for resource adequacy. Resource adequacy is a condition in which the region is assured that, in aggregate, utilities or other load serving entities (LSE) have acquired sufficient resources to satisfy forecasted future loads reliably.
- **Frequency Response and Operating Reserves.** Frequency response is the immediate and automatic response to power to a change in locally sensed frequency while operating reserves are the generation capacity that is online and able to serve load immediately during unexpected outages. Both of these values streams will be explored to understand the potential benefit to Liberty.

5.1.4 Societal Value Streams

- **Community Resiliency.** While a catastrophic disaster, such as a major earthquake, may happen once in a system’s useful life, severe weather like snowstorms and wildfires will occur more frequently in the Liberty territory. During a grid outage, the value of having backup power to ensure the availability of the emergency services that these facilities provide can be valued in terms of avoided property damage, injuries, lives lost, and to a lesser extent, lost revenue. This community resiliency value can be explored utilizing Federal Emergency Management Agency’s (FEMA) benefit calculator to determine resiliency benefits in high-consequence, low-probability events. While the FEMA tool provided a standard valuation approach, valuing resiliency industrywide is still more art than science and a lot of uncertainty and a lack of comprehensive standards exist for valuing the overall importance of resiliency.
- **GHG Emissions Reductions.** GHG emissions reductions from a solar plus battery energy storage resiliency system come from offsetting utility energy consumption during normal operations and reducing or eliminating fossil fueled backup generator operation during an outage.

6 Conclusions

In summary, the proposed Liberty resiliency program portfolio would ensure that resiliency services sustain critical customers during future outages. The proposed approach would offer customers three pathways of participation:

- Development of community core microgrids that would harness technical resiliency specialists to support community partners in building out an in front-of-the meter microgrid where utility would own the assets and facilities would opt-in via a monthly resiliency charge.
- Avenue for medical baseline customers to apply for grant funding to receive behind-the-meter battery storage solutions for increased resiliency at home during events.
- Path for critical facilities and large customers to adopt and implement commercial-scale storage systems in to provide critical load backup during outage events and ensure that critical services are provided to the communities in the Liberty territory.

Liberty plans to file in June of 2021 the full application and business case to receive approval from the CPUC in launching the Resiliency Program Portfolio by 2022.

Attachment C

WMP Risk Spend Efficiency Calculations

Table C-1: WMP Risk Spend Efficiency (RSE) Calculations[1]

Initiative Name	**RSE (Avg./High)**[2]	**Cost Horizon (2021-2025)**	**HFTD 2/3?**	**Comments**
Intrusive Asset Inspections/Replace & Repair	0.8/1.8	$23,646,000	Covers all of the service territory	2021 Liberty has undertook an aggressive pole replacement program based on fire condition risk information from intrusive inspections, and the risk mapping completed by Reax.
Undergrounding - Apache	0.76/1.7	$711,367	Both HFTD 2 & 3	Liberty plans to underground segments of its risky Meyers 3100 line located in South Lake Tahoe. Meyers 3100 lies in both HFTD 2 & HFTD 3 areas.
Undergrounding - North Beach Tahoe Vista	0.13/0.3	$11,331,090	HFTD 2	The Brockway 5200 circuit is targeted to be underground by the utility. This circuit has historically been an issue for Liberty, as there have been six-related ignition events on the circuit. An ignition event is not necessarily a reportable incident, but is an incident in which burning, melting, smoking, smoldering, sparking, or arcing has occurred.
Expulsion Fuse Replacement	2.29/5.14	$8,536,953	Will roll out to entire service territory	Liberty is now able to target it's scheduling of its expulsion fuse replacement aligning it with its fire risk profile, addressing the riskiest regions in its service territory first.
Microgrid - Sagehen	0.73/1.64	$671,872	HFTD 2	Liberty has constructed its first microgrid project on the HOB7700 line. The RSE approaches 5 for this location suggesting that it is one of the better options to select for this location.
Microgrid - MEY3300 (Prospective/Study)	0.23/0.52	$2,200,000	Both HFTD 2 & 3	Liberty continues to study strategic locations for grid resiliency and wildfire prevention. The utility's South Lake Tahoe region is the riskiest region, with the heaviest commercial concentration as well. Meyers 3300 & 3400 lines are the highest ranked risk tier at "Very High".
Microgrid - MEY3400 (Prospective/Study)	0.25/0.57	$4,500,000	Both HFTD 2 & 3	Liberty continues to study strategic locations for grid resiliency and wildfire prevention. The utility's South Lake Tahoe region is the riskiest region, with the heaviest commercial concentration as well. Meyers 3300 & 3400 lines are the highest ranked risk tier at "Very High".
Covered Conductor - MEY3300	0.19/0.42	$5,630,192	Both HFTD 2 & 3	Liberty continues to study strategic locations for grid resiliency and wildfire prevention. The utility's South Lake Tahoe region is the riskiest region, with the heaviest commercial concentration as well. Meyers 3300 & 3400 lines are the highest ranked risk tier at "Very High".
Covered Conductor - MEY3400	0.24/0.54	$17,768,226	Both HFTD 2 & 3	Liberty continues to study strategic locations for grid resiliency and wildfire prevention. The utility's South Lake Tahoe region is the riskiest region, with the heaviest commercial concentration as well. Meyers 3300 & 3400 lines are the highest ranked risk tier at "Very High".

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[1] Liberty will provide all work papers supporting RSE calculations and explanation of underlying assumptions upon request since the study and results consists of voluminous model outputs and analytical reports

[2] Neural Network machine learning RSEs have been calculated for initiatives, however, limited ignition-related risk drivers and CPUC reportable ignitions have produced results less reliable than the RSEs calculated above under a standard approach.

Initiative Name	**RSE (Avg./High)[2]**	**Cost Horizon (2021-2025)**	**HFTD 2/3?**	**Comments**
Covered Conductor - TAH7300	0.24/0.55	$1,946,643	HFTD 2	The TAH7300 line has historically been a circuit with high performance risk. Surrounded in an area with a lot of vegetation, the line has experienced almost 80 forced outages in six years.
Covered Conductor - TPZ1261	0.4/0.9	$1,461,400	HFTD 2	Liberty's Topaz 1261 line has historically been a line affected by adverse weather, namely strong winds causing service interruptions to customers. While not much vegetation or commercial activity lies in this region, the ability for a fire to spread very quickly is unquestionable.
Enhanced Vegetation Management.	0.27/0.61	$32,255,650	Will cover whole service territory	Targeted and enhanced vegetation management, along with the inclusion of LiDAR now provides Liberty with the ability to make best use of its resources and address the riskiest vegetation in the highest fire risk areas.
Distribution Fault Anticipation	171.56/385.29	$600,000	Will roll out to entire service territory	DFA technology offers a very high RSE due to its ability to be a highly effective, relatively low-cost, quickly implemented option on the company's feeders.

Table C-2: WMP RSE Additional Calculations

Control/Mitigation	Ignition Events Reduced over Life	NPV Cost of Control/Mitigation over Life	RSE - Avg. Case	RSE - Tail (High Impact Case)
Intrusive Asset Inspections/Replace & Repair	214.6	$42,793,440	0.80	1.80
Undergrounding - Apache	1.3	$279,629	0.76	1.70
Undergrounding - North Beach Tahoe Vista	7.9	$9,603,864	0.13	0.30
Expulsion Fuse Replacement	97.1	$6,780,835	2.29	5.14
Microgrid - Sagehen	3.8	$823,684	0.73	1.64
Microgrid - MEY3300 (Prospective/Study)	4.0	$2,742,086	0.23	0.52
Microgrid - MEY3400 (Prospective/Study)	8.8	$5,577,082	0.25	0.57
Covered Conductor - MEY3300	5.6	$4,737,049	0.19	0.42
Covered Conductor - MEY3400	23.6	$15,601,566	0.24	0.54
Covered Conductor - TAH7300	2.7	$1,790,572	0.24	0.55
Covered Conductor - TPZ1261	3.5	$1,388,105	0.40	0.90
Enhanced Vegetation Management.	43.7	$25,916,294	0.27	0.61
Distribution Fault Anticipation	568.9	$530,283	171.56	385.29

Table C-3: Risk Scores Associated with RSE Calculations

Financial Impact - Average Case	Financial Impact - Tail Case	Safety (Serious Inj.) - Average Case	Safety (Serious Inj.) - Tail Case	Safety (Fatalities) - Average Case	Safety (Fatalities) - Tail Case	Reliability - Average Case	Reliability - Tail Case
0.00550	0.0103	0.0878	0.1986	0.0666	0.1501	0.00002	0.00011

Table C-4: Circuit Risk

Circuit	Overall Rating	Circuit Risk Rank	Pole Risk	Vegetation Risk	Performance Risk	FORCE OUTAGE (2015-2020)	Outage % of System	Ignitions	Ignitions /Outage	OH Length	Out / Length	Weighted Risky Trees	Regressed Spark Rate/mi.	Vegetation Outage /Line mi.
111	Moderate	15	High	Moderate	Very Low	0	0.0%	0	0.0%	6.4	0.0	20	0.20%	0
132	Low	28	Very Low	Moderate	Very Low	0	0.0%	0	0.0%	12.5	0.0	40	0.20%	0.00
160	Very Low	42	Very Low	Very Low	Very Low	0	0.0%	0	0.0%	0.4	0.0	0	0.20%	0.00
608	Low	28	Very Low	Moderate	Very Low	5	0.5%	0	0.0%	0.0	105.9	217	0.16%	21.19
609	Moderate	15	Low	High	Very Low	0	0.0%	0	0.0%	10.1	0.0	160	0.20%	0.00
619	Very Low	42	Very Low	Very Low	Very Low	5	0.5%	0	0.0%	0.0	480.6	6	0.16%	0.00
625	Low	28	Very Low	Moderate	Very Low	0	0.0%	0	0.0%	17.9	0.0	134	0.20%	0.00
629	Low	28	Very Low	Moderate	Very Low	1	0.1%	0	0.0%	5.2	0.2	83	0.16%	0.00
640	Low	28	Low	Low	Very Low	0	0.0%	0	0.0%	8.1	0.0	10	0.20%	0.00
650	Low	28	Very Low	Moderate	Very Low	0	0.0%	0	0.0%	7.7	0.0	32	0.20%	0.00
BKY4201	Moderate	15	Moderate	Moderate	High	13	1.3%	2	15.4%	9.4	1.4	40	1.78%	0.11
BKY4202	Moderate	15	Moderate	Low	High	19	1.9%	2	10.5%	9.3	2.0	91	0.80%	0.00
BKY5100	Moderate	15	Moderate	Moderate	Very Low	0	0.0%	0	0.0%	2.2	0.0	27	0.20%	0.00
BKY5200	High	4	High	Moderate	Very High	39	3.9%	6	15.4%	23.3	1.7	121	1.09%	0.26
CAL204	Moderate	15	Very Low	Low	High	24	2.4%	0	0.0%	4.3	5.5	24	0.16%	0.23
CEM41	Low	28	Very Low	Very Low	Moderate	11	1.1%	1	9.1%	6.0	1.8	10	1.35%	0.17
CEM42	Low	28	Low	Very Low	Low	6	0.6%	1	16.7%	3.4	1.8	18	1.56%	0.00
FAR7800	Very Low	42	Very Low	Very Low	Very Low	0	0.0%	0	0.0%	0.0	0.0	9	0.20%	0.00
GLS7400	High	4	Low	High	Very High	32	3.2%	4	12.5%	32.9	1.0	328	0.93%	0.18
GLS7600	Low	28	Low	Very Low	Low	7	0.7%	0	0.0%	5.2	1.3	0	0.16%	0.19
HOB7700	Low	28	Very Low	High	Very Low	6	0.6%	0	0.0%	8.9	0.7	169	0.16%	0.34
KBS2800	Very Low	42	Low	Very Low	Very Low	0	0.0%	0	0.0%	0.4	0.0	0	0.20%	0.00
MEY3100	High	4	High	Moderate	Very High	43	4.3%	0	0.0%	17.6	2.4	52	0.16%	0.63
MEY3200	High	4	High	Moderate	Very High	62	6.2%	0	0.0%	21.8	2.8	32	0.16%	0.41

Circuit	Overall Rating	Circuit Risk Rank	Pole Risk	Vegetation Risk	Performance Risk	FORCE OUTAGE (2015-2020)	Outage % of System	Ignitions	Ignitions /Outage	OH Length	Out / Length	Weighted Risky Trees	Regressed Spark Rate/mi.	Vegetation Outage /Line mi.
MEY3300	Very High	1	Highest	Highest	High	65	6.5%	1	1.5%	52.8	1.2	364	0.23%	0.17
MEY3400	Very High	1	Very High	Very High	High	67	6.7%	1	1.5%	55.1	1.2	882	0.25%	0.25
MEY3500	Very High	1	Very High	Very High	Very High	45	4.5%	2	4.4%	27.1	1.7	230	0.41%	0.18
MULLER1296	High	4	Moderate	High	Very High	51	5.1%	2	3.9%	43.9	1.2	171	0.56%	0.09
NST8400	Very Low	42	Very Low	Very Low	Low	2	0.2%	1	50.0%	0.0	0.0	6	0.00%	0.00
NST8500	Very Low	42	Very Low	Very Low	Low	4	0.4%	0	0.0%	0.0	0.0	1	0.00%	0.00
NST8600	Very Low	42	Very Low	Very Low	Low	4	0.4%	0	0.0%	0.1	31.3	0	0.16%	0.00
POR31	Moderate	15	Low	Very Low	High	32	3.2%	0	0.0%	14.2	2.2	48	0.16%	0.21
POR32	Moderate	15	Moderate	Low	High	46	4.6%	1	2.2%	21.0	2.2	204	0.40%	0.33
RUS7900	Low	28	Very Low	Moderate	Low	5	0.5%	0	0.0%	3.3	1.5	27	0.16%	0.61
SQV7201	High	4	High	High	Very High	29	2.9%	1	3.4%	12.0	2.4	88	0.66%	0.25
SQV8100	Very Low	42	Very Low	Very Low	Very Low	1	0.1%	0	0.0%	0.0	0.0	0	0.00%	0.00
SQV8200	High	4	High	High	High	19	1.9%	1	5.3%	4.9	3.8	62	0.91%	0.81
SQV8300	Low	28	Moderate	Very Low	Low	3	0.3%	0	0.0%	1.4	2.2	9.6	0.16%	0.00
SRB51	Low	28	Low	Low	Low	9	0.9%	0	0.0%	6.8	1.3	13	0.16%	0.15
STL2200	Very Low	42	Low	Very Low	Very Low	0	0.0%	0	0.0%	0.3	0.0	2	0.20%	0.00
STL2300	Moderate	15	Moderate	Low	Moderate	10	1.0%	1	10.0%	3.0	3.4	57.5	1.31%	0.00
STL3101	High	4	High	Low	Very High	39	3.9%	2	5.1%	15.6	2.5	77	0.68%	0.51
STL3501	Moderate	15	Moderate	Low	High	33	3.3%	1	3.0%	14.0	2.4	44	0.39%	0.22
TAH5201	High	4	High	High	Very High	41	4.1%	3	7.3%	21.4	1.9	284	0.72%	0.37
TAH7100	Moderate	15	Moderate	Moderate	High	26	2.6%	2	7.7%	13.3	2.0	110	0.79%	0.30
TAH7200	Low	28	Moderate	Low	Low	3	0.3%	0	0.0%	5.1	0.6	27	0.16%	0.20
TAH7300	High	4	Moderate	High	Very High	78	7.8%	2	2.6%	57.8	1.4	629	0.30%	0.35
TPZ1261	High	4	Moderate	Moderate	Highest	86	8.6%	5	5.8%	55.6	1.5	166	0.95%	0.04
TRK7202	Moderate	15	Moderate	High	Moderate	16	1.6%	1	6.3%	12.2	1.3	109	0.82%	0.25
TRK7203	Moderate	15	Low	Low	High	11	1.1%	2	18.2%	9.8	1.1	36	2.17%	0.00

Circuit	Overall Rating	Circuit Risk Rank	Pole Risk	Vegetation Risk	Performance Risk	FORCE OUTAGE (2015-2020)	Outage % of System	Ignitions	Ignitions /Outage	OH Length	Out / Length	Weighted Risky Trees	Regressed Spark Rate/mi.	Vegetation Outage /Line mi.
TRK7204	Very Low	42	Very Low	Very Low	Low	2	0.2%	0	0.0%	6.9	0.3	0	0.20%	0.00
WAS201	Very Low	42	Very Low	Low	Very Low	0	0.0%	0	0.0%	7.3	0.0	20	0.20%	0.00

ATTACHMENT 2

Liberty Response to CalAdvocates-LIB-A2506017-005, September 4, 2025

Liberty Utilities (CalPeco Electric) LLC
933 Eloise Avenue
South Lake Tahoe, CA 96150
Tel: 800-782-2506
Fax: 530-544-4811

October 14, 2025

Liberty Utilities (CalPeco Electric) LLC

A.25-06-017
WEMA

The Public Advocates Office

Data Request No.:	CalAdvocates-LIB-A2506017-020
Requesting Party:	Public Advocates Office
Originator:	Aaron Louie, Aaron.Louie@cpuc.ca.gov
	Patrick Huber, Patrick.Huber@cpuc.ca.gov
cc:	Matthew Karle, Matthew.Karle@cpuc.ca.gov
Date Received:	September 30, 2025
Due Date:	October 14, 2025

Attachments to these responses contain information marked confidential in accordance with applicable law and regulation. The basis for confidentiality is set forth in accompanying confidentiality declaration. Public disclosure is restricted.

REQUEST NO. 1:

The following question refers to Liberty's response provided to CalAdvocates-LIB-A2506017-005, question 1, Excel Attachment *"CalAdvocates-LIB-A2506017-005-Q1.xlsx"*.

a) In the attachment titled *"CalAdvocates-LIB-A2506017-005-Q1.xlsx"* in row 2 column K, named "before_photo," Liberty provided the following link: https://web.fulcrumapp.com/photos/view?photos=2e955f15-edef-4ddd-b433-7681f942acb7. Please provide a picture of the image found via this link in a PDF format.
b) In the attachment titled *"CalAdvocates-LIB-A2506017-005-Q1.xlsx"* in row 2 column AC, named "before_photo," Liberty provided the following link https://web.fulcrumapp.com/photos/view?photos=b6b69682-004f-4a5b-af1f-722bc2d32817. Please provide a picture of the image found via this link in a PDF format.

RESPONSE:

a) Please refer to page 1 of attachment *CalAdvocates-LIB-A2506017-020-Q1.pdf*.

b) Column AC of *CalAdvocates-LIB-A2506017-005-Q1.xlsx* was titled "after_photo" and Liberty understands the reference to "before_photo" in this subpart to be a typographical error. Please refer to page 2 of attachment *CalAdvocates-LIB-A2506017-020-Q1.pdf* regarding "after_photo."

REQUEST NO. 2:

a) When did Liberty first begin to perform vegetation management inspections on the Topaz 1261 circuit?
b) When did Liberty first begin to perform vegetation management inspections on Pole 266731 ("West Pole")?
c) When did Liberty first begin to perform pole clearing work on Pole 266731 ("West Pole")?
d) When did Liberty first begin to perform vegetation management inspections on Pole 40277 ("East Pole")?
e) When did Liberty first begin to perform pole clearing work on Pole 40277 ("East Pole")?

RESPONSE:

Liberty objects to this Question as vague, ambiguous and overbroad as framed. Liberty understands this Question to be asking about inspections pursuant to the vegetation management inspection programs described in *Liberty-03: Prudence of Operations*, Part V.D. Liberty further understands the reference to "Pole 40277 ("East Pole")" to be a typographical error given the East Pole is identified as Pole 40288 in Liberty's opening testimony. Subject to and without waiving these objections, Liberty responds as follows:

Liberty has located records of pole clearing work on the Topaz 1261 Circuit dating back to June 2012 and records of other vegetation management work on the Topaz 1261 Circuit dating back to May 2014. Liberty has located records of pole clearing work performed on the West Pole dating back to May 2013. Liberty does not have a record of pole clearing work performed at the East Pole because that pole is not subject to PRC 4292. Pole clearing records were generated only for pole locations where pole clearing was determined to be required under PRC 4292 and associated regulations.

REQUEST NO. 3:

a) Prior to November 17, 2020, when did Liberty last conduct a vegetation management inspection on the "Subject Span" (the span between Pole 266731 ("West Pole") and Pole 40277 ("East Pole")?
b) Please provide a copy of Liberty's records related to the vegetation management inspection referred to in subpart (a) above.

RESPONSE:

Liberty objects to this Question as vague, ambiguous and overbroad as framed. Liberty understands this Question to be asking about inspections pursuant to the vegetation management inspection programs described in *Liberty-03: Prudence of Operations*, Part V.D. Liberty further understands the reference to "Pole 40277 ("East Pole")" to be a typographical error given the

East Pole is identified as Pole 40288 in Liberty's opening testimony. Subject to and without waiving these objections, Liberty responds as follows:

Prior to November 17, 2020, the most recent vegetation management inspection conducted by Liberty on the Subject Span was a LiDAR scan performed on October 3, 2020. Please refer to *CalAdvocates-LIB-A2506017-020-Q3.xlsx* for a record of the LiDAR inspection performed on the Subject Span on October 3, 2020. Liberty's records further indicate that the Topaz 1261 Circuit was inspected as part of Liberty's routine vegetation management inspections in 2019. Liberty's vegetation management records included only poles where work orders were generated for vegetation issues identified for remediation. No work orders on the Topaz 1261 Circuit from 2019 are associated with the East Pole or the West Pole.

REQUEST NO. 4:

In Liberty's Application, Exhibit Liberty-03: Prudence of Operations, on page 29, Liberty states: "Liberty linemen could notify the vegetation management department of necessary mitigation work that they identified during patrols or detailed inspections (referred to as "Tree Tags")."

a) Did any Liberty linemen identify any "Tree Tags" or vegetation management work that was needed around the Subject Span (the span between Pole 266731 ("West Pole") and Pole 40277 ("East Pole")?
b) If the answer to subpart (a) above is yes, please provide a copy of the "Tree Tag" that identifies the vegetation management work that was needed.
c) Did any Liberty linemen identify any "Tree Tags" or vegetation management work that was needed on Pole 266731 ("the West Pole")?
d) If the answer to subpart (c) above is yes, please provide a copy of the "Tree Tag" that identifies the vegetation management work that was needed.
e) Did any Liberty linemen identify any "Tree Tags" or vegetation management work that was needed on Pole 40277 ("the East Pole")?
f) If the answer to subpart (e) above is yes, please provide a copy of all the "Tree Tag" that identifies the vegetation management work that was needed.
g) How many "Tree Tag" notifications did Liberty linemen identify on the Topaz 1261 Circuit from 2015 through 2020?
h) Please provide a copy of all the "Tree Tag" notifications that Liberty linemen identified referring to subpart (g) above.

RESPONSE:

Liberty objects to this Question vague, ambiguous, and overbroad as framed. Liberty further understands the reference to "Pole 40277 ("East Pole")" to be a typographical error given the East Pole is identified as Pole 40288 in Liberty's opening testimony. Subject to and without waiving its objections, Liberty responds as follows: Liberty does not track the source of Tree Tags. As set forth in *Liberty-03: Prudence of Operations* (at p. 29), Tree Tags could be identified by Liberty linemen during patrols or inspections. In addition, Tree Tags could also be identified through other means, such as by arborists during inspections other than routine inspections or when a customer reported a vegetation issue requiring mediation.

a) – f) Liberty understands these subparts to be asking about Tree Tags identified between 2015 and 2020, the time period specified in subpart (g). Liberty has identified one Tree

Tag associated with the West Pole. Because Liberty tracked Tree Tags by the nearest pole, rather than by span, at the time these tags were created, Liberty is not able to confirm whether this tag is associated with work on the Subject Span or the adjacent span connected to the West Pole. Please refer to attachment *CONFIDENTIAL-CalAdvocates-LIB-A2506017-020-Q4-subpart(d).xlsx* for a record of this Tree Tag. Please note that the "WO Entry Date" field post-dates the "Date Complete" field for this tag because Liberty transitioned to a new vegetation management database in approximately 2018 and for Tree Tags created prior to the use of this database, the "WO Entry Date" reflects the date when information regarding those tags was entered into this database, not when the work order was actually created. Liberty has not identified any Tree Tags associated with the East Pole during the specified timeframe.

g) – h) From 2015 through 2020, Liberty has identified 215 Tree Tags on the Topaz 1261 Circuit in its vegetation management records. Please refer to attachment *CONFIDENTIAL-CalAdvocates-LIB-A2506017-020-Q4-subpart(h).xlsx*. Please also refer to Liberty's response to subparts (a)-(f) of this Question.

ATTACHMENT 3

Liberty Response to CalAdvocates-LIB-A2506017-020
October 14, 2025

Public Advocates Office Data Request

No. CalAdvocates-LIB-A2506017-005
Proceeding: A.25-06-017: Cost Recovery for Mountain View Fire

Date of issuance:	August 20, 2025
Responses due:	September 4, 2025

To:	**Elly O'Doherty** Liberty Utilities	Email: Elly.ODoherty@libertyutilities.com
	Dan Marsh Liberty Utilities	Email: Dan.Marsh@libertyutilities.com
	Manasa Rao Liberty Utilities	Email: Manasa.Rao@libertyutilities.com
	AnnMarie Sanchez Liberty Utilities	Email: AnnMarie.Sanchez@LibertyUtilities.com
CC:	**Sharon Yang** Liberty Utilities	Email: Sharon.Yang@libertyutilities.com
	Danny Zhang Munger, Tolles & Olson LLP	Email: Danny.Zhang@mto.com
	Matt Linsley Munger, Tolles & Olson LLP	Email: Matthew.Linsley@mto.com
	Sarah Cole Munger, Tolles & Olson LLP	Email: Sarah.Cole@mto.com
	Giovanni Saarman Gonzalez Munger, Tolles & Olson LLP	Email: Giovanni.SaarmanGonzalez@mto.com
	Henry Weissmann Munger, Tolles & Olson LLP	Email: Henry.Weissmann@mto.com

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California Public Utilities Commission
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From: **Aaron Louie**
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Patrick Huber
Attorney
Public Advocates Office Email: Patrick.Huber@cpuc.ca.gov

INSTRUCTIONS

You are instructed to answer the following Data Request in the aforementioned proceeding, with written, verified responses pursuant to Public Utilities Code §§ 309.5(e), 314, 581 and 582, and Rule 1.1 of the California Public Utilities Commission's (CPUC) Rules of Practice and Procedure.

Restate the text of each data request question prior to providing the response. Provide the name and title of the responding individual (i.e., the person responsible for the content of your answer) for each data request question. If the responding individual is not your employee, please provide their name, title, and employer, as well as the name and title of your employee who is directly responsible for the work of the responding individual.

Please send your responses and inquiries to the originators of this data request (that is, the Public Advocates Office employees and attorneys listed on the cover page), with copies to the following representatives of the Public Advocates Office:

1. Matthew.Karle@cpuc.ca.gov

Timing of responses: Please respond to each question as soon as your complete response to that specific question is available, and no later than the due date listed on the cover sheet.

Requests for Clarification: If a request, definition, or an instruction, is unclear, please notify the originators in writing within three (3) business days from the date of receipt of the Data Request, including a specific description of what you find unclear and why. If possible, please provide a proposal for resolving the issue. In any event, unless directed otherwise by the originators, answer the request to the fullest extent possible, explain why you are unable to answer in full, and describe the limitations of your response.

Incomplete responses: If, after you have sought clarification, you still believe any part of the Data Request to be unclear and you are unable to answer a question completely, accurately, and with the specificity requested, notify the originators within three (3) business days. If possible, please provide a proposal for resolving the issue. Answer the request to the fullest extent possible, explain why you are unable to answer in full, and describe the limitations of your response.

Deadline extension requests: If you are unable to provide a complete response to each question by the due date noted on the cover page, contact the originators in writing to request a deadline extension as soon as feasible. In your deadline extension request, please (1) specify the questions affected by the delay, (2) propose an alternative response date, and (3) provide a written explanation as to why the deadline cannot be met.

Objections: If you object to any portion of this Data Request, please submit your objections, including the specific legal basis for each objection, to the originators as soon as feasible. *At the latest*, submit your objections and legal bases by the deadline on the cover sheet.

Response format: Responses must be provided in the original format. (If available in Word or Excel format, send the Word or Excel document, not a PDF file.)

- All electronic documents submitted in response to this data request must be in readable, downloadable, printable, and searchable formats, unless the use of such formats is infeasible.
- Each page must be numbered.
- If any of your answers rely on, refer to, or reflect calculations that are not shown therein, provide a copy of the supporting records that were used to derive such calculations, such as Excel spreadsheets or computer programs, with data and formulas intact and functioning.
- Voluminous documents produced in response to the data request must be Bates-numbered and indexed.
- Responses to the data request that refer to or incorporate documents must identify the particular documents referenced, including the title and page number or, if available, Bates-numbers or Bates-range.

Assertions of privilege: If you contend that any question or sub-question seeks information that is covered by attorney-client privilege or another privilege:

- Identify and articulate the bases of each applicable privilege asserted for each question or sub-question individually.
- Respond to the question as fully as possible, even if you assert that some responsive information is privileged. Provide all responsive information that is not privileged, and redact only the allegedly privileged information.
- Provide a privilege log for any responsive information that is withheld (including redactions and documents withheld in their entirety). A privilege log must include the name, date, and author(s) of each redacted document, the precise privilege(s) asserted for each redacted document, and a brief description of each redacted document and its contents or subject matter sufficient to determine whether the asserted privilege(s) applies. If you provide one privilege log in response to multiple questions or sub-questions, please also specify each question or sub-question the privileged document is responsive to.

Your privilege claims and privilege logs are due by the response deadline for this data request.

Other questions: For any questions, email the originators.

DEFINITIONS

A. As used herein, the terms "you," "your(s)," "Company," "CalPeco Electric," and "Liberty" mean Liberty Utilities (CalPeco Electric) LLC (U 933-E) and any of its current or former employees, agents, consultants, attorneys, officials, or any persons acting on its behalf.

B. The terms "and" and "or" shall be construed either disjunctively or conjunctively whenever appropriate in order to bring within the scope of this Data Request any information or documents which might otherwise be considered to be beyond their scope.

C. Date ranges shall be construed to include the beginning and end dates named. For example, the phrases "from January 1 to January 31," "January 1-31," "January 1 to 31," and "January 1 through January 31" include both the 1st of January and the 31st of January. Likewise, phrases such as "since January 1" and "from January 1 to the present" include January 1st, and phrases such as "until January 31," "through January 31," and "up to January 31" include the 31st.

D. The singular form of a word shall be interpreted as plural, and the plural form of a word shall be interpreted as singular whenever appropriate in order to bring within the scope of this Data Request any information or documents which might otherwise be considered to be beyond their scope.

E. The term "communications" includes all verbal and written communications, including but not limited to telephone calls, conferences, notes, correspondence, and all memoranda concerning the requested communications. Where communications are not in writing, provide copies of all memoranda and documents made relating to the requested communication and describe in full the substance of the communication to the extent that the substance is not reflected in the memoranda and documents provided.

F. The terms "document," "documents," or "documentary material" include, without limitation, the following items, whether in electronic form, printed, recorded, or written or reproduced by hand: reports, studies, statistics, projections, forecasts, decisions, orders, intra-office and interoffice communications, correspondence, memoranda, financial data, summaries or records of conversations or interviews, statements, returns, diaries, calendars, work papers, graphs, notebooks, notes, charts, computations, plans, drawings, sketches, computer printouts, summaries or records of meetings or conferences, summaries or reports of investigations or negotiations, opinions or reports of consultants, photographs, bulletins, records or representations or publications of any kind (including microfilm, videotape, and records however produced or reproduced), electronic or mechanical or electrical records of any kind (including, without limitation, tapes, tape cassettes, discs, emails, and records), other data compilations (including, without limitation, input/output files, source codes, object codes, program documentation, computer programs, computer printouts, cards, tapes, and discs and recordings used in automated data processing, together with the programming instructions and other material necessary to translate, understand, or use the same), and other documents or tangible things of whatever description which constitute or contain information within the scope of this Data Request.

G. “Relate to,” “concern,” and similar terms and phrases shall mean to consist of, refer to, reflect, comprise, discuss, underlie, comment upon, form the basis for, analyze, mention, or be connected with, in any way, the subject of this Data Request.

H. “Identify”:

   i. When used in reference to a Company employee, “identify” includes stating their full name and title.

   ii. When used in reference to a consultant or contractor for the Company, “identify” includes stating the person’s name, title, and employer, and the name and title of the Company employee who is directly responsible for the work of the consultant.

   iii. When used in reference to a person who is not a current Company employee, consultant, or contractor, “identify” includes stating the person’s name; most recent title and supervisor at the Company; and most recent known employer, title/position, and business address.

   iv. When used in reference to documents, “identify” includes stating the nature of the document (e.g., letter, memorandum, study), the date (if any), the title of the document, the identity of the author, and the general subject matter of the document. For documents not publicly available, please also provide the location of the document, and identify the person having possession, control or custody of the document.

I. When requested to “state the basis” for any statement (i.e., any analysis, workpaper, study, proposal, assertion, assumption, description, quantification, or conclusion), please describe every fact, statistic, inference, supposition, estimate, consideration, conclusion, study, report, and analysis available to you which you believe to support the statement, or which you contend to be evidence of the truth or accuracy thereof.

J. “CPUC” and “Commission” mean the California Public Utilities Commission.

K. “Cal Advocates” means the Public Advocates Office at the California Public Utilities Commission.

L. “VM” means vegetation management.

M. “QA/QC” means Quality Assurance and Quality Control.

DATA REQUEST

Question 1

Please list all 2020 vegetation inspections that Liberty performed in the area where the Mountain View Fire ignited. For each inspection, list the date of the inspection, the type of inspection (e.g., pre-inspection or post-work verification), and the number of inspection personnel.

a) Provide copies of all vegetation inspection reports for the inspections identified.

Response to Q1:

Liberty objects to this Question as vague and ambiguous as to the phrase "the area where the Mountain View Fire ignited." Liberty understands this Question to be asking about vegetation management in the area of the Subject Span (the span between Pole 266731 ("West Pole") and Pole 40288 ("East Pole")) as described in *Liberty-03: Prudence of Operations*. Subject to and without waiving its objections, Liberty responds as follows:

Liberty's records indicate that a LiDAR vegetation inspection of the Subject Span was completed on October 3, 2020. The LiDAR data showed that the Subject Span was "clear," meaning no vegetation was detected within 12 feet of the conductors. Because LiDAR is a remote sensing tool, there is no specific number of inspection personnel associated with this inspection.

Liberty's records also indicate that pole clearing inspections of the West Pole and East Pole pursuant to Public Resources Code ("PRC") § 4292 were performed on September 23, 2020. There is one inspector associated with these inspections.

a) Please refer to attachment *CalAdvocates-LIB-A2506017-005-Q1.xlsx*, which has a tab corresponding to each type of vegetation management inspection in 2020 (LiDAR and pole clearing). As referenced in *Liberty-03: Prudence of Operations*, there is no pole clearing record associated with the pole clearing inspection for the East Pole because there was no vegetation growth within a ten-foot radius of that pole. *See* Liberty-03 at 30.

Question 2

Please provide all records of any vegetation management notifications or work orders on the Topaz 1261 circuit that were open as of November 17, 2020.

Response to Q2:

Liberty understands this Question to be asking about vegetation management-related notifications that were created on or before November 17, 2020, and remained open as of November 17, 2020. Please refer to attachment *CalAdvocates-LIB-A2506017-005-Q2.xlsx*. There were 14 vegetation management notifications or work orders on the Topaz 1261 Circuit that were open as of November 17, 2020, one of which was completed on November 17, 2020. None of the work orders were in the area of the Subject Span (the span between Pole 266731 ("West Pole") and Pole 40288 ("East Pole")).

Question 3

Regarding Liberty's vegetation management processes for distribution circuits at the time of the 2020 Mountain View Fire:

a) Explain how Liberty's vegetation management inspection programs assessed the clearance distances for individual trees.

b) Explain how Liberty's vegetation management inspection programs determined sufficient clearance to mitigate potential impacts of tree failure.

c) Identify what programs/initiatives Liberty had in place to track specific hazardous trees (e.g., hazard tree management program; dead and dying tree program).

d) Explain how Liberty's vegetation management inspection programs determined which trees should be tracked in each program.

e) Explain how Liberty's vegetation management inspection programs determined when to trim/remove trees.

Response to Q3:

Liberty objects to this Question as vague and ambiguous as to the term "hazardous trees." Liberty understands this Question to be asking about trees identified through Liberty's vegetation management inspections as posing a grow-in or fall-in risk to Liberty's overhead electric facilities. Subject to and without waiving its objections, Liberty responds as follows:

a) As of November 17, 2020, Liberty used a combination of LiDAR vegetation inspections and visual inspections performed by ISA Certified Arborists to assess the clearance distances for individual trees.

b) Liberty followed the regulatory standards established by Public Resources Code § 4293 and General Order 95, Rule 35 to determine sufficient clearance to mitigate potential impacts of tree failure. As explained in *Liberty-03: Prudence of Operations*, Liberty used a 1.5x safety factor for LiDAR vegetation inspections and generated work orders where the LiDAR data indicated vegetation clearances of six feet or less on the Topaz 1261 Circuit. *See* Liberty-03 at 29. The visual inspections performed by ISA Certified Arborists during routine vegetation management inspections were generally a Level 2: Basic Assessment per ANSI A300 (Part 9) Tree Risk Assessment, during which inspectors considered the movement of conductors and vegetation and the interrelationships between growth rates, control methods, and inspection frequency to assess whether remediation was needed. *See id.* at 24-25.

c) Liberty had several programs to identify and address hazard trees, as described in *Liberty-03: Prudence of Operations*. Liberty's routine vegetation management program tracked trees requiring mitigation using unique identification numbers, which were used to generate and track work orders. Liberty also performed off-cycle tree work as part of its Vegetation Management Plan. Liberty also had a Dead and Dying Tree Program to address tree mortality in the region and performed LiDAR inspections to assess vegetation to conductor clearances.

d) Please refer to pages 11-20 of the attachment *Vegetation Management Plan_V2018.pdf*.

e) Please refer to pages 11-20 of the attachment *Vegetation Management Plan_V2018.pdf* and pages 5-8 of the attachment *Schedule A - Pre-inspection Scope of Work.pdf*.

Question 4

Regarding Liberty's vegetation management practices, specifically on the Topaz 1261 circuit, at the time of the 2020 Mountain View Fire:

a) What vegetation clearance distances did Liberty apply on the Topaz 1261 circuit during 2020?

b) Did the vegetation clearance distances vary geographically (i.e., different clearances applied to different parts of the circuit)?

c) If so, please describe how Liberty determined clearance distances at the time.

d) Please explain your responses to questions 4.a) and 4.b).

Response to Q4:

a) Liberty applied vegetation clearance distances established in Public Resources Code §§ 4292 and 4293 and General Order 95, Rule 35 Case 14 and Appendix E. Please refer to pages 5-11 of the attachment *Vegetation Management Plan_V2018.pdf*.

b) Vegetation clearance requirements did not vary along the Topaz 1261 Circuit.

c) N/A

d) Please see attachment *Vegetation Management Plan_V2018.pdf* for additional details regarding Liberty's vegetation management program.

Question 5

At the time of the Mountain View Fire, did Liberty have a standard or procedure that required QA/QC audits to be conducted within a specific time period after vegetation management work is completed?

a) If so, please provide a copy of the standard or procedure.

b) If not, please explain why.

Response to Q5:

As of November 17, 2020, Liberty's Vegetation Management Plan had a Quality Control procedure that prescribed quality control audits of vegetation management activities. Quality control audits were generally conducted within the calendar year in which the work was completed, though the Quality Control procedure did not prescribe a specific time period.

a) Please refer to page 21 of the attachment *Vegetation Management Plan_V2018.pdf*.

b) N/A

Question 6

The following questions pertain to vegetation management (VM) QA/QC programs.

a) At the time of the Mountain View Fire, did Liberty have a QA/QC program for VM contractors?

   i. If so, provide the date when Liberty established its QA/QC program for VM contractors.

   ii. If so, explain the method Liberty used to select and define its QA/QC metrics for VM contractors.

   iii. If so, provide the standard or procedure that defined Liberty's QA/QC program for VM contactors as of November 17, 2020.

b) Provide the standard or procedure that defines Liberty's current QA/QC program for VM contractors.

c) As of November 2020, describe the best industry practices regarding QA/QC for VM and provide references to specific sources or standards if possible.

Response to Q6:

a) As of November 17, 2020, Liberty performed quality control audits of completed work performed by VM contractors.
   i. The Vegetation Management Plan, which included a Quality Control procedure, was established in 2018.
   ii. Please refer to page 21 of the attachment *Vegetation Management Plan_V2018.pdf* and pages 6-10 of the attachment *Liberty Utilities Pole Clearing and Tree Work Audit Report - 2020 FINAL.pdf*.
   iii. Please refer to page 21 of the attachment *Vegetation Management Plan_V2018.pdf*.
b) The procedure that defines Liberty's *current* QA/QC program for VM contractors is Post Work Verification Procedure (VM-04). Please refer to attachment *VM-04_Post_Work_Verification_2.0.pdf*.
c) Liberty is not aware of specific standards establishing industry best practices regarding QA/QC for vegetation management as of November 2020.

Question 7

As of November 2020:

a) Did Liberty provide specific criteria to contractors to use during post-routine QA/QC audits to assess the quality of routine vegetation maintenance work?

   i. If so, identify the specific criteria given to contractors to assess the quality of routine vegetation maintenance work.

   ii. If not, explain why.

b) Did Liberty ensure the quality and accuracy of the pre-inspection process with QA/QC audits (as opposed to the tree trimming and removal work)?

c) If so, describe the pre-inspection audit process, including how often audits were conducted, who conducted them, and what metrics or standards were used.

d) If not, explain why.

Response to Q7:

a) Yes, please refer to page 21 of the attachment *Vegetation Management Plan_V2018.pdf* and to pages 6-10 of the attachment *Liberty Utilities Pole Clearing and Tree Work Audit Report - 2020 FINAL.pdf.*
b) Audits of the pre-inspection process were performed by the pre-inspection contract supervisor as well as Liberty's internal arborists. Audits were conducted to verify contracted employees' work to ensure quality and conformance with Liberty's Vegetation Management Plan and applicable State regulations. These audits were conducted as needed by the pre-inspection supervisor and Liberty performed audits of 100% of the pre-inspection process conducted on all state and federal lands.
c) Please see Liberty's response to Question 7, subpart (b) of this set of data requests.
d) N/A

Question 8

At the time of the Mountain View Fire, did Liberty periodically review or revise its QA/QC processes for routine vegetation maintenance?

a) If so, describe these changes.

b) If so, how frequently did Liberty review and revise its QA/QC processes?

c) If not, explain why.

d) Have there been any changes or updates to Liberty's QA/QC processes for routine vegetation maintenance since the Mountain View Fire?

e) If so, describe these changes.

f) If not, explain why.

Response to Q8:

a) As of November 17, 2020, Liberty was refining its process for conducting quality control audits of the pre-inspection process and post work verification.
b) Liberty reviews its QA/QC processes annually and makes revisions as needed.
c) N/A
d) Liberty finalized its formal Post Work Verification Procedure (VM-04) on May 21, 2021, and VM-04 was subsequently revised on February 28, 2025. For additional information, including the revision history, please refer to the attachment *VM-04_Post_Work_Verification_2.0.pdf*.
e) Please see Liberty's response to subpart (d)
f) N/A

Question 9

As of November 2020:

a) Did Liberty have QA/QC criteria to determine whether scientific sampling or physical patrols will be conducted?

b) If so, provide the criteria used to determine whether scientific sampling or physical patrols should be conducted.

c) If not, explain why.

d) Describe the methodology used by Liberty to perform scientific sampling.

e) Did Liberty incorporate feedback and findings from QA/QC, inspection, or audit activities into continuous improvement efforts for vegetation management?

f) If so, explain how Liberty incorporated feedback and finding into its vegetation management continuous improvement efforts.

g) If so, provide examples of improvements made as a result of QA/QC audits or inspections.

Response to Q9:

a) As of November 2020, Liberty's Vegetation Management Plan included a 15% random audit of contractor work, which functioned as a basic sampling methodology to assess compliance and performance.

b) N/A

c) At the time, Liberty was in the process of developing a more formalized QA/QC framework. The then-existing approach relied on random sampling and field audits conducted by internal staff and contractor supervisors, but did not yet incorporate statistically validated sampling protocols or decision criteria for choosing between sampling and patrols.

d) A formal scientific sampling methodology was implemented as part of the Post Work Verification Procedure (VM-04) in May 2021. VM-04 incorporated a sampling approach with defined sample sizes for different work types. Sampling was designed to achieve a 99% confidence level with a 5–7%

margin of error.

e) Yes. Liberty used findings from QA/QC audits and inspections to inform updates to its vegetation management practices and oversight procedures. Feedback from audits was used to identify performance deficiencies, which were communicated to contractors for remediation. Liberty also used audit results to refine its work specifications, improve contractor training, and enhance data accuracy in its vegetation management database.

f) Please refer to Liberty's response to subpart (e).

g) Liberty implemented several improvements based on audit and inspection results. Examples of these improvements include:
  - Updated work scopes and specifications for inspections, tree work, and pole clearing
  - Monthly meetings with contractors to review audit results and discuss findings
  - Enhanced documentation standards to clarify expectations for vegetation management activities and reduce ambiguity
  - Identified training opportunities for pre-inspection arborists
  - Developed VM-04 to refine the procedure for post work verification and compliance audits
  - Improve contractor accountability and data quality through enhanced oversight and training

END OF REQUEST

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Acq date	Ast id	Ast tag	Bst id	Bst tag	Comments	Comments2	Electrictr	Fdrmgrnont	Installyea	Jobnumber	Latitude	Longitude	Line id	Mainline	Neutsize	Objectid	Phaseorien	Shape leng	Span clear	Span id	Span lgth	Span name	Span tag	Shape length	Voltage
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Liberty Utilities Pole Clearing and Tree Work Audit 2020

Publish date: November 20, 2020

Prepared for: Eliot Jones, Senior Manager, Liberty Utilities (CA)
Authored by: JH Land Consultants, LLC

Contents

Executive Summary

I. Audit Scope

JH Land Consultants, LLC ("JHLC") was contracted by Liberty Utilities ("Liberty") to perform an independent third-party field review of pole clearing and tree work locations to evaluate Liberty contractors' conformance to their respective contract specifications. The program types evaluated include pole clearing, routine maintenance tree work ("Routine"), tree mortality mitigation work ("CEMA") and high fire threat area tree work activities ("Tier 3").

Liberty provided JHLC with a combined 4,687 unique work locations from which a 15% sample was to be created, as directed by Liberty. This resulted in a sample consisting of 569 pole locations and 134 tree work locations.

II. Results

An early snowfall on November 7, 2020 prevented JHLC from completing all pole locations due to snow cover. Nevertheless, JHLC was able to complete 76.8% of the audit sample. Table 1 below shows a breakdown.

Table 1. Audit Locations Completed

Work Type	Sample Locations	Locations completed	% Complete
Pole Clearing	569	404	71%
Tree Work	134	136	101.5%
TOTALS	703	540	76.8%

Of the pole clearing sample locations reviewed, most of the observed infractions pertained to ground clearing specification and consisted of the following issues:

- Large amounts of pine needles on the ground
- Regrowth of weeds
- Live landscaped plants and/or trees in the cylinder
- Failure to adequately clear beyond a fence that was within 10ft of a pole

Table 2. Pole Clearing Audit Results by Specification

Work Specification	Locations Passed	Locations Failed	Score
Site Cleanliness	391	13	**96.8%**
Ground Clearing	239	165	**59.2%**
Pole clearing 0-8ft	354	50	**87.6%**
Pole clearing 8ft-conductor	370	34	**91.6%**

Tree work locations were generally worked to their respective specification (*Routine, CEMA or Tier 3*). Site cleanliness was observed to have some issues which consisted of crews not chipping debris or following proper "lop and scatter" protocol.

Table 3. Tree Work Audit Results by Specification

Work Specification	Locations Passed	Locations Failed	Score
Site Cleanliness	127	9	**93.4%**
Tree Work	136	0	**100%**

III. Observations

1) Pre-inspection contractors were not included in this audit.
2) Tree locations reviewed showed very good results. All tree work was performed to the appropriate specification. Only site cleanliness was an issue at nine locations reviewed.
3) In many cases, the audit performed by JHLC was several months after the pole or tree work had been completed.
4) Pole clearing contractors are using insufficient methods for ground vegetation removal which is allowing vegetation to re-sprout after clearing.
5) Pine needles can build up quickly on the ground, especially during windy weather. The presence of sufficient pine needles on the ground around the pole contributed to many locations failing the audit.

6) Many pole locations in front of homes did not have landscaped vegetation removed by the pole clearing contractor. It is unclear if contractors discussed the removal of such vegetation with property owners at the time of their inspection.

7) Most pole location records had accurate latitude and longitude coordinates; however, a few were not accurate. It did not appear that pole clearing contractors are updating pole locations consistently, if at all.

8) Database records did not consistently have accurate addresses--street names were sometimes misspelled. This can make it difficult to find the proper location.

9) Many tree work records contained X,Y coordinates for locations of trees instead of latitude/longitude coordinates. This geospatial format was not consistent or compatible with the pole record database and required JHLC to convert the X,Y coordinates to latitude/longitude prior to creating the sample.

IV. Recommendations

1) Expand the scope of future audits to include pre-inspection.

2) In the ground clearing section of the pole clearing contract specification, consider adding language to more explicitly direct the contractor to remove ground vegetation in a way that eliminates the potential for resprouting.

3) Consider additional actions like biannual inspection of poles to ensure year-round compliance with PRC 4292.

4) Implement smaller monthly independent third-party verification reviews of vegetation management contactor work instead of larger periodic reviews.
    a. Continual auditing throughout the year will provide more accurate results when an audit occurs shortly after the contractors’ work is completed.
    b. More frequent, routine auditing will show how the performance of contractors, specific crews or individuals are trending throughout the year.

5) Create a formal process for third party reviews.
    a. This will formally document a quality control program and provide a standardized method of performing quality control audits.

6) Database clean-up

a. Correcting database inconsistencies like misspelled addresses and improper geospatial coordinates will improve the quality of the data and make it easier for database research, audit sampling and trend analysis.

b. Consider adding pole location accuracy verification to the scope of work in a future pole clearing contract.

****end of executive summary****

Liberty Utilities Pole Clearing and Tree Work Audit 2020

1. Audit Methodology

All records from the pole clearing and tree work master files provided by Liberty were reviewed and duplicate location records were removed to isolate unique records for randomized sampling. The "Address" field in the tree work file was used to identify unique locations for tree work records and unique pole locations were determined using the "pole_id" field to create a population of 4,687 (3817 poles + 870 trees) unique locations. To fulfill the requirement of a 15% work sample audit, 703 work locations were needed to create a sample.

Out of a population of 4,687 locations, 81% were pole records and 19% were tree records. Therefore, using the percentages noted above, a weighted sample was created to derive the following audit breakdown:

- 569 pole records samples
- 134 tree record samples

127 locations appeared to have both pole clearing and tree work. These 127 locations were selected from both tree work and pole clear work lists to populate the first 254 auditable locations.

The next 7 locations on the randomized tree work list were taken to fulfill the tree work audit sample requirement of 134. Next, the remaining locations on the pole clearing master list were also randomized using the random number generator in Microsoft Excel, and then sorted from "high to low" random number. The first 442 pole clearing work locations on the randomly sorted list were used to fulfill the rest of the sample.

Table 4. Tree Work Audit Sample Breakdown

Tree Work Locations at same location as pole clearing	127
Individual tree work locations to be audited	7
Pole Clearing Locations at same location as tree work	127
Individual pole clearing locations to be audited	442
Total Work Location Audit Sample	703

2. Audit Scope Specifications

The following specifications were provided by Liberty and used by JHLC auditors to evaluate all audit locations.

2.1. Pole Clearing Contract Specifications

1) **Minimum Clearance Provisions PRC 4292**: Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:
    a) At ground line level – remove flammable materials, including but limited to, ground litter, duff, and dead or desiccated vegetation that could propagate fire, and;

    b) From (0-8 feet) above ground level remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 8 feet. Fire resistant landscaping such as lawns or low growing herbaceous vegetation with irrigation is **exempt** from clearing this zone. *Please note – herbaceous is defined as having little or no woody tissue and persisting usually for a single growing season.* Additionally, paved surfaces such as sidewalks, parking lots and paved roads are also considered exempt.

    c) From 8 feet to horizontal plane of highest point of conductor attachment report dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety. The Contractor is **exempt** from clearing this zone. However, this information **must** be reported including pole location and pole identification to the Liberty Utilities Project Manager.

    d) Within the 10 feet radius zone remove all trees, brush, and flammable materials that are smaller than 4-inch diameter when measured at 4.5 feet above ground line.

    e) Any location requiring additional clearing due to re-growth later in the year will be treated as a new location and the Contractor will receive the unit price used for "Previously Cleared" Item. These locations must be approved or requested by the Liberty Utilities' Project Manager before re-clearing. ***Please note that Liberty Utilities will not be requesting the use of chemical management around subject poles.***

2) **Waste Material**

    a) All vegetation material located within 100 feet of accessible roads shall be removed from the site and disposed of in a proper manner. The disposal will be at the Contractors expense. All vegetation and debris located at a distance greater than 100 feet from accessible roads may be lopped and scattered in a non-contiguous manner to a maximum depth of no greater than 18" in height.

    b) All areas including but not limited to sidewalks and driveways which would be considered improved areas will be cleaned and swept if required, leaving the area in the same state as prior to clearing the pole. All debris will be cleaned up and removed from work sites and surrounding areas including but not limited to yards, driveways, sidewalks and landscaped areas except in areas of native vegetation or unimproved areas.

2.2. Pole Clearing Terminology

The two terms below were included in the completed pole work data provided by Liberty.

- *Partial 1255*: A sub-category for 4292 which allows clearing exemptions agriculture, fruit/nut citrus trees, irrigated pastures, marsh lands, etc.
- *Full VMA:* Means fully landscaped or customer maintained-No work needed

NOTE

JHLC auditors were instructed by Liberty to evaluate each pole clearing location as measured against full compliance with Public Resource Code 4292. Therefore, JHLC auditors "failed" audit locations where the pole clearing contractor conformed to a Partial 1255 or Full VMA.

2.3. Tree Work Specifications

Liberty provided completed tree work data to JHLC which included tree work type, tree clearance achieved, and clean-up methods. JHLC auditors used data from these fields to evaluate the site conditions and assess the tree contractor's work.

Clean-up methods in the tree work data included:

- Lop and scatter
- Chip and haul
- Chip and pile

Tree work site cleanliness was evaluated the same way pole clearing sites were evaluated as detailed in paragraph 2 (a) under the *Pole Clearing Contract Specifications* section.

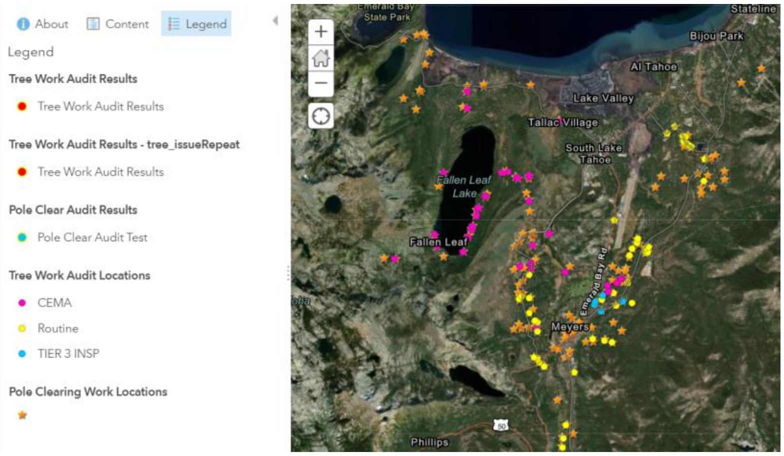
2.4. Auditing in the field

The field portion of the audit began on October 27, 2020 and finished on November 12, 2020, largely in part due to snowfall on November 7, 2020 which made it difficult to accurately assess the remaining pole sites.

2.5. The Auditing Process

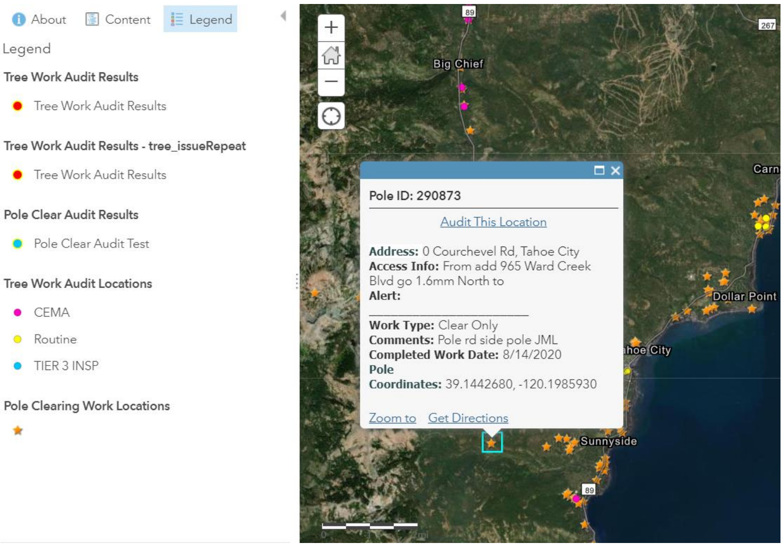
The pole clearing and tree work site sample locations were loaded as separate feature layers onto an ESRI map created by JHLC entitled *Liberty Audit 2020*. The map was then shared with JHLC auditors who evaluated work site locations using the ESRI Collector and ESRI Survey123 apps.

Figure 1. Liberty Audit 2020 Map



When evaluating pole clearing work locations, the auditor first identified a pole or tree work location on the Collector app. Next, the auditor selected an audit location by clicking on a point on the map to open an attribute table as shown in the image below.

Figure 2. Liberty Audit 2020 Location Attribute Table



Pole ID: 290873

Address: 0 Courchevel Rd, Tahoe City
Access Info: From add 965 Ward Creek Blvd go 1.6mm North to
Alert:

Work Type: Clear Only
Comments: Pole rd side pole JML
Completed Work Date: 8/14/2020
Pole Coordinates: 39.1442680, -120.1985930

Once the location was identified and navigated to, the auditor opened the Survey123 app by clicking on the “Audit This Location” hyperlink in the attribute table of each individual site (as seen in the image above).

The audit findings were then entered into the Survey123 app. Using the criteria described in the work specification sections above, the auditor evaluated each site, entering audit findings using an audit form in Survey123.

2.6. Work Site Evaluation

Pole clearing sites were evaluated for:

- Site cleanliness
- Ground clearance 10 feet around the pole to bare earth
- The presence of vegetation in a cylinder measuring 10ft from the pole and from ground level to 8ft
- The presence of dead/dying vegetation in a cylinder measuring 10ft from the pole and 8ft above the ground to the primary conductor level.

Tree sites were evaluated for site cleanliness and to ensure that the listed work type (Routine, CEMA or Tier 3) was completed to specification. Some examples include:

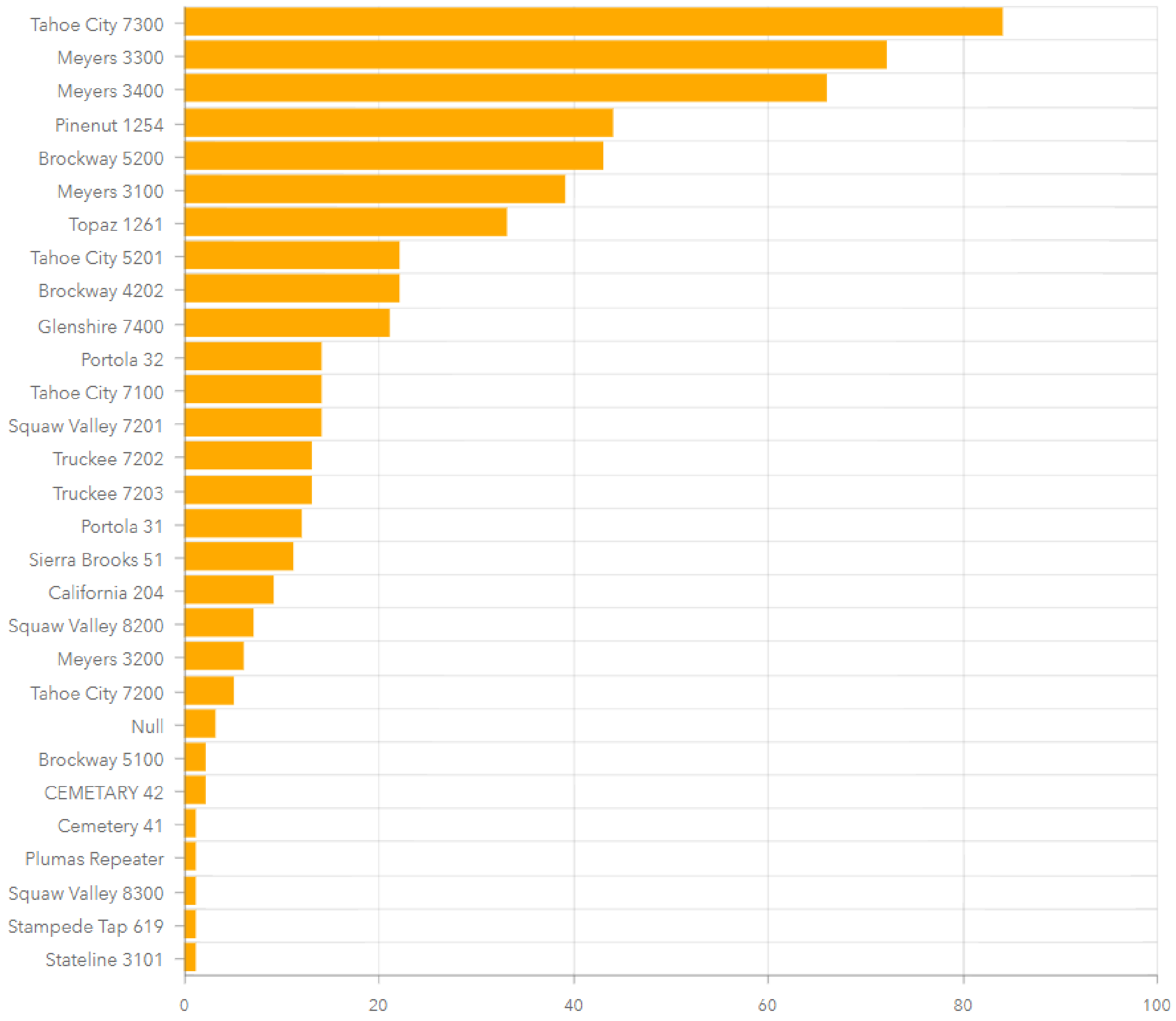
- A record shows a clearance of 12ft. Auditor confirmed that 12ft or more was achieved.
- A site clean-up method states Chip & Haul; the auditor assessed whether wood was left on-site.

3. Audit Results

3.1. Pole Clearing Site Results

The pole clearing sample consisted of 569 pole locations that were randomly selected to be audited. Figure 3 shows a breakdown of the sample by circuit.

Figure 3. Pole Clearing Sample by Circuit



Due to an early snowfall event, only 404 out of 569 pole sites were evaluated. In general, site cleanliness and pole clearing activities from the ground to conductor were completed to contract specifications. However, only 59.2% of sites met ground clearance specifications. Table 5 shows the audit scores by work specification.

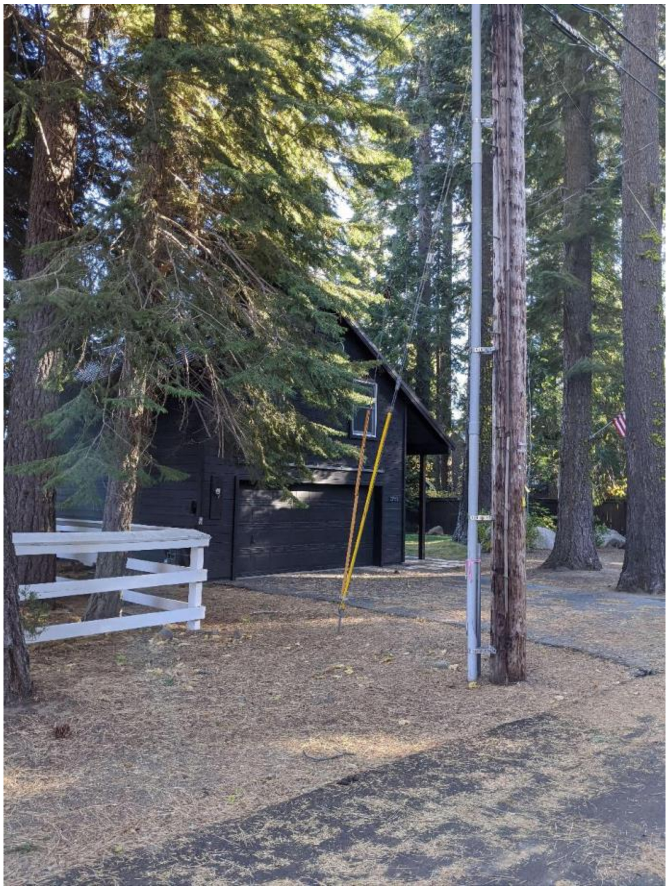
Table 5. Pole Clearing Audit Results by Specification

Work Specification	Locations Passed	Locations Failed	Score
Site Cleanliness	391	13	**96.8%**
Ground Clearing	239	165	**59.2%**
Pole clearing 0-8ft	354	50	**87.6%**
Pole clearing 8ft-conductor	370	34	**91.6%**

Where sites did not meet ground clearance specifications, three scenarios were commonly observed contributing to a site not passing:

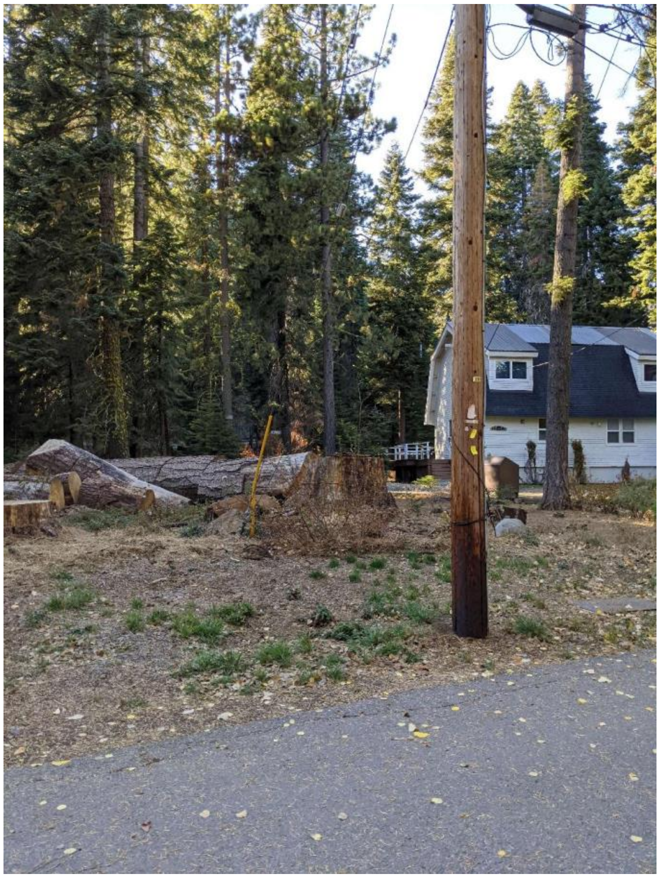
1. Dead pine needles from surrounding trees can fall and cover the ground around poles after an adequate pole clearing by the contractor.

Example 1: Pine needle site



2. Regrowth of weeds and other vegetation. It is suspected that this may be due to how the contractor clears the vegetation (possibly with a weed eater), and a result of not using herbicide to control vegetation growth around the pole.

Example 2: Vegetation regrowth



3. Landscaping around the pole; record comments indicate that certain customers requested that the contractor not remove landscaped plants and small trees. JHLC auditors did not confirm with customers that it was requested to keep landscaping around poles.

Example 3: Landscaped vegetation around pole

Tahoe City 7300 had the most violations for ground clearance work and pole clearance (0-8ft). The 8ft-Conductor pole clearing specification results were very good with Brockway 4202 showing the most violations (10 total). Figures 4, 5 and 6 show a breakdown of results by circuit.

Figure 4. Ground clearance Results by Circuit

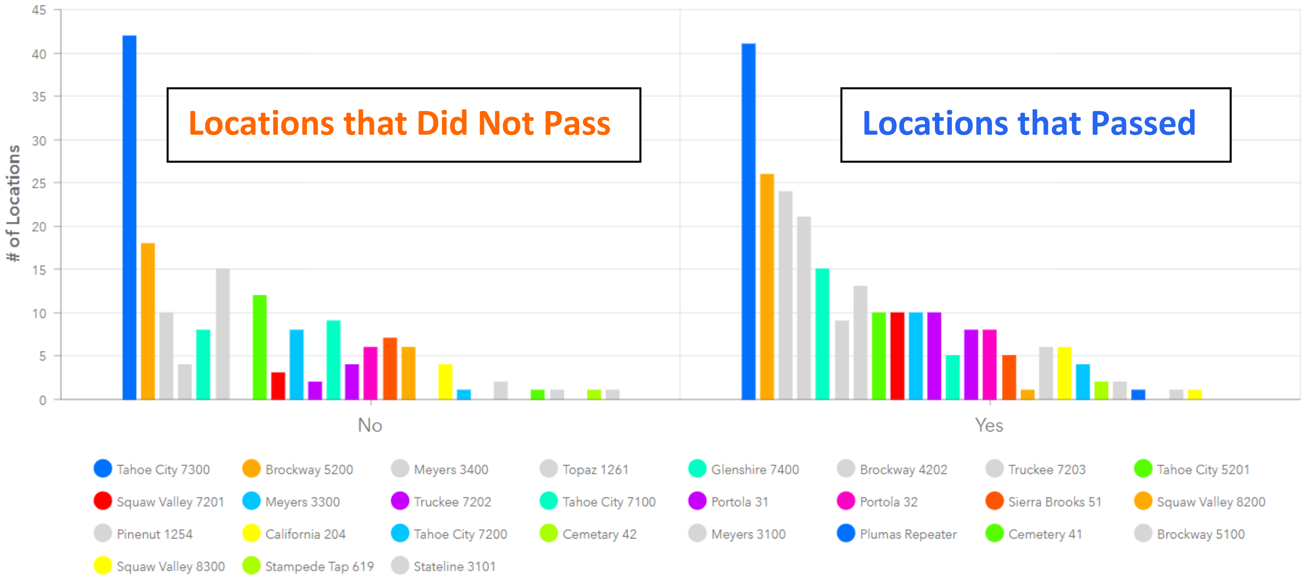


Figure 5. Pole clearance (0-8ft) Results by Circuit

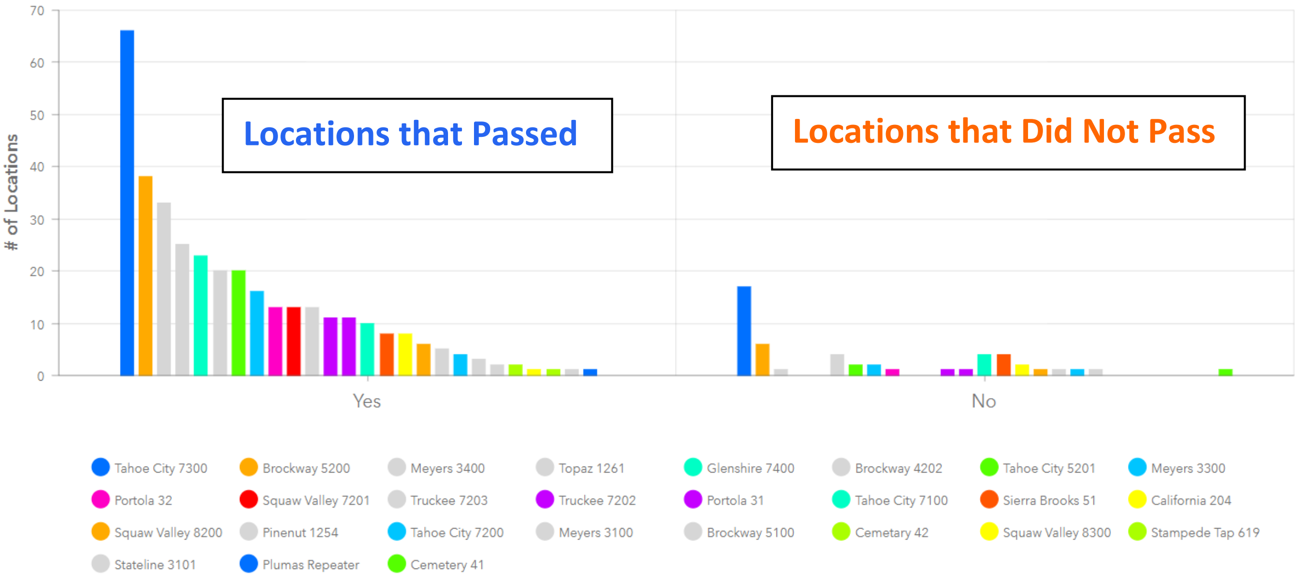
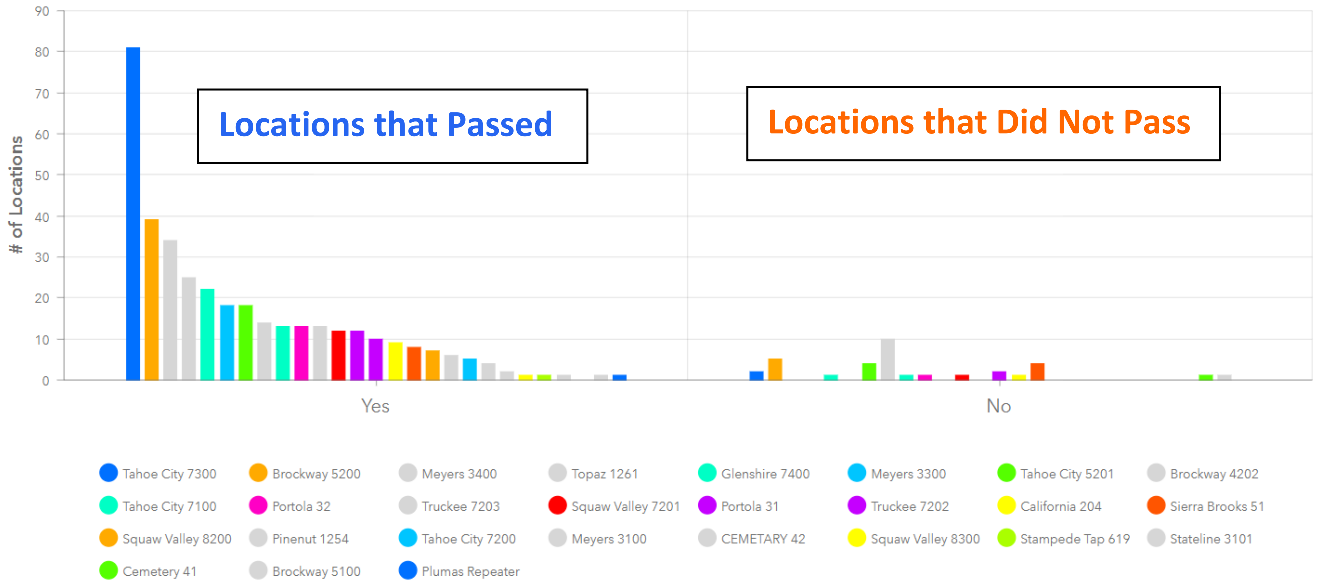


Figure 6. Pole clearance (8ft-Conductor) Results by Circuit



The work of six pole clearing contractor personnel (labeled as "Inspectors" in the data set provided by Liberty) were included in the pole clearing samples. Their respective audit scores for the four categories assessed are displayed in Table 6. The scores below reflect the percentage of locations that passed the audit.

Table 6. Pole Clearing Audit Scores per Inspector by Specification

Inspector Name	Site Cleanliness	Ground Clearing	Pole clearing 0-8ft	Pole clearing 8ft-conductor
Tristen Treadway	98%	67%	95%	96%
Leif Sandness	97%	41%	73%	86%
Sameh Elkilany	97%	56%	93%	95%
Manny Duran	95%	66%	88%	86%
Daniel Arocan	96%	61%	87%	91%
Eric Fleming	94%	66%	86%	94%

Figure 5. Site Cleanliness Results by Inspector

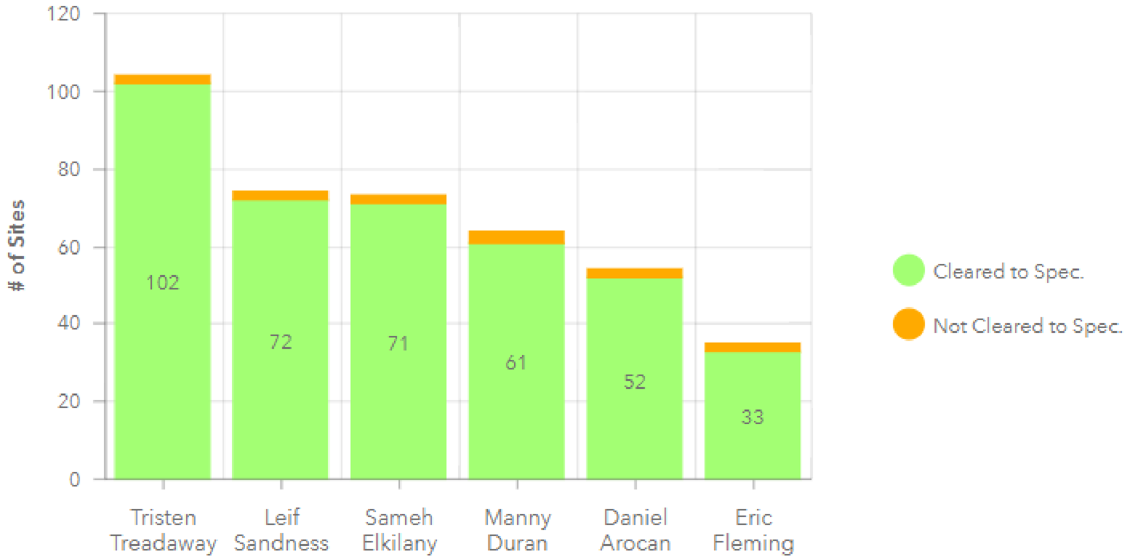


Figure 6. Ground Clearance Results by Inspector

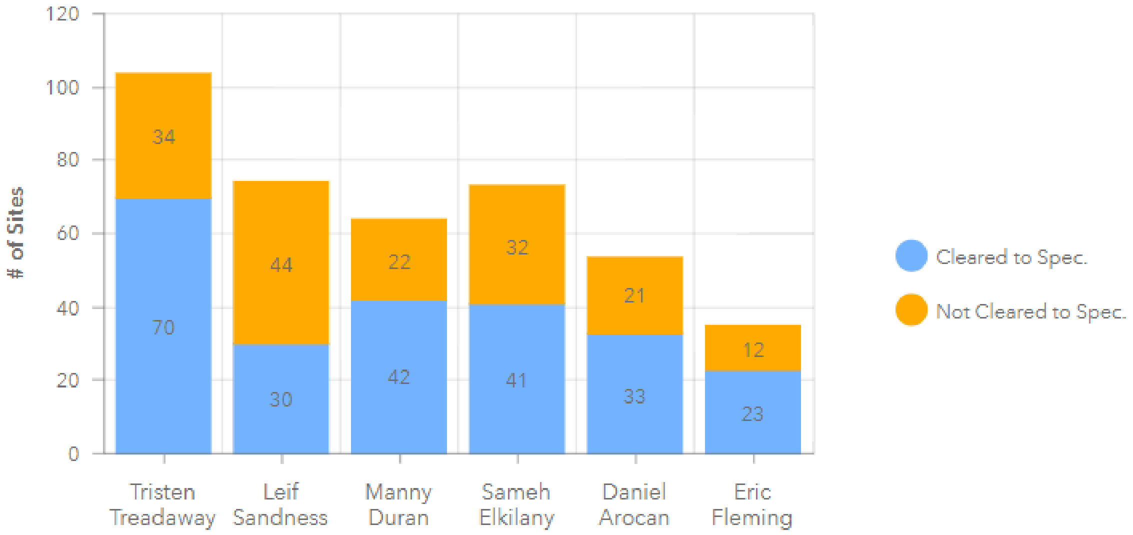


Figure 7. Pole Clearance (0-8ft) Results by Inspector

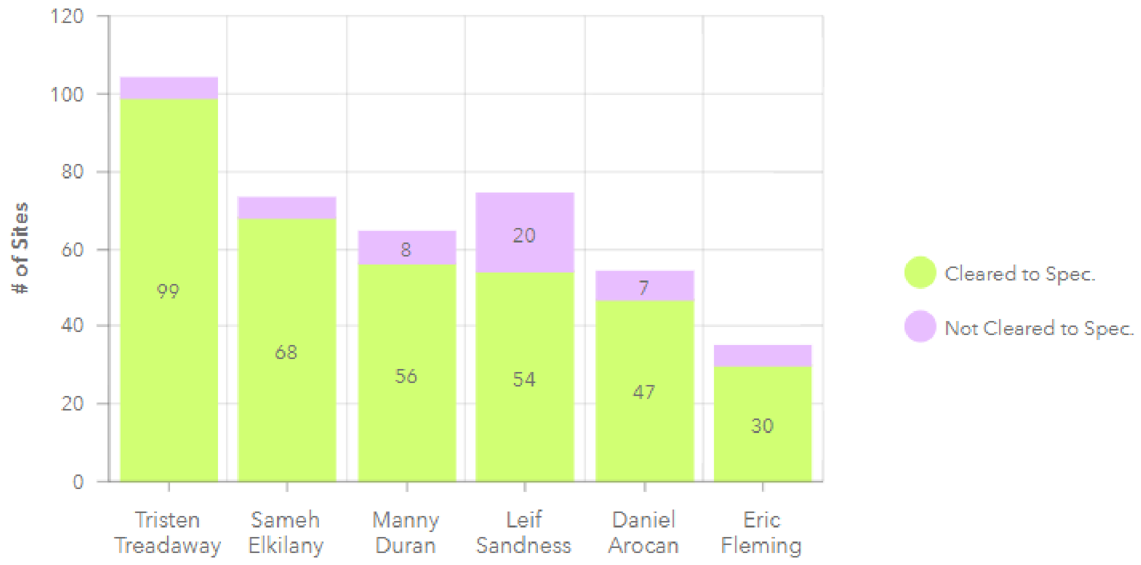
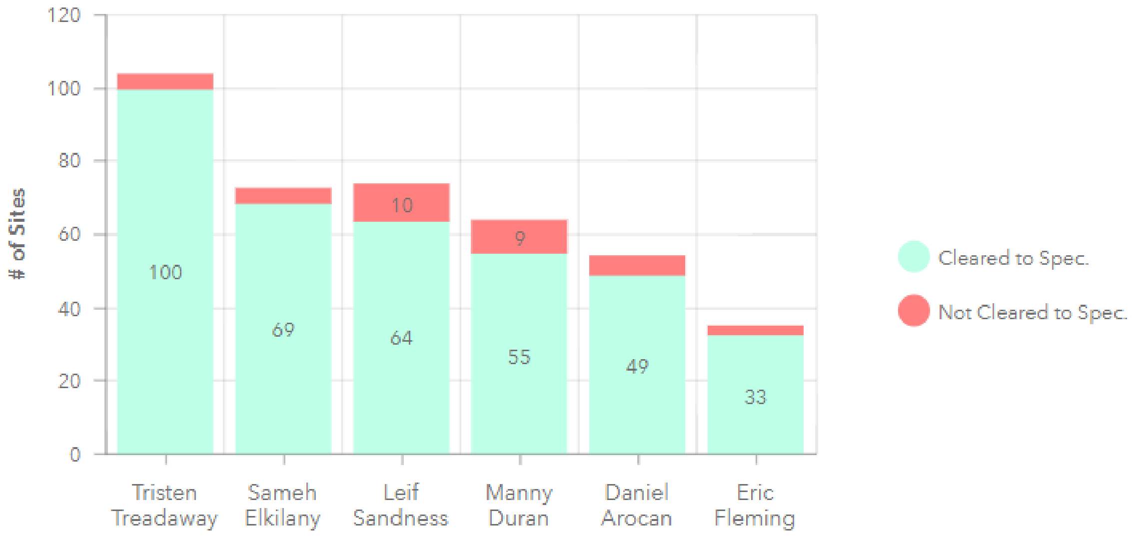


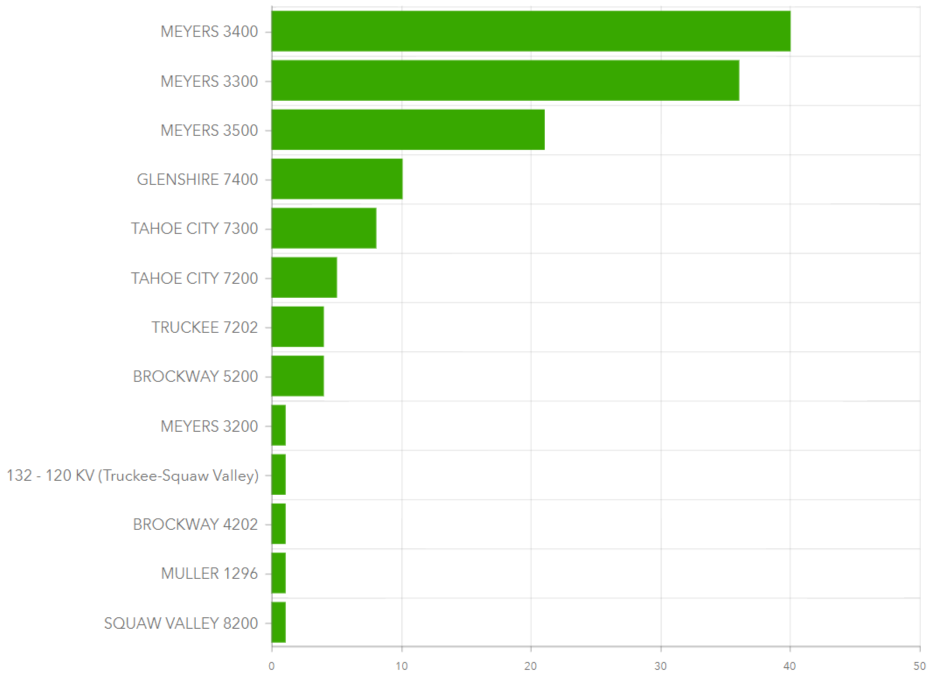
Figure 8. Pole Clearance (8ft-Conductor) Results by Inspector



3.2. Tree Work Results

134 tree work locations were randomly selected from a database record spreadsheet provided by Liberty. Figure 9 shows the breakdown of locations by circuit.

Figure 9. Tree Work Location Sample by Circuit



136 tree work sites ended up being audited, most of which passed. Sites were cleaned to the proper specification and tree work was performed appropriately.

Table 7. Tree Work Audit Results by Specification

Work Specification	Locations Passed	Locations Failed	Score
Site Cleanliness	127	9	93.4%
Tree Work	136	0	100%

At the nine sites where site cleanliness was an issue, JHLC auditor noted that branches were not chipped and instead, brush was left in piles.

Tree foreman responsible for site cleanliness issues are RR (2), AW, ME (2), JG, EV, RS (2).

4. Observations

1) Pre-inspection contractors were not included in this audit.
2) Tree locations reviewed showed very good results. All tree work was performed to the appropriate specification. Only site cleanliness was an issue at nine locations reviewed.

3) In many cases, the audit performed by JHLC was several months after the pole or tree work had been completed.

4) Pole clearing contractors are using insufficient methods for ground vegetation removal which is allowing vegetation to re-sprout after clearing.

5) Pine needles can build up quickly on the ground, especially during windy weather. The presence of sufficient pine needles on the ground around the pole contributed to many locations failing the audit.

6) Many pole locations in front of homes did not have landscaped vegetation removed by the pole clearing contractor. It is unclear if contractors discussed the removal of such vegetation with property owners at the time of their inspection.

7) Most pole location records had accurate latitude and longitude coordinates; however, a few were not accurate. It did not appear that pole clearing contractors were updating pole locations consistently, if at all.

8) Database records did not consistently have accurate addresses--street names were sometimes misspelled. This can make it difficult to find the proper location.

9) Many tree work records contained X,Y coordinates for locations of trees instead of latitude/longitude coordinates. This geospatial format was not consistent or compatible with the pole record database and required JHLC to convert the X,Y coordinates to latitude/longitude prior to creating the sample.

5. Recommendations

1) Expand the scope of future audits to include pre-inspection.

2) In the ground clearing section of the pole clearing contract specification, consider adding language to more explicitly direct the contractor to remove ground vegetation in a way that eliminates the potential for resprouting.

3) Consider additional actions like biannual inspection of poles to ensure year-round compliance with PRC 4292.

4) Implement smaller monthly independent third-party verification reviews of vegetation management contactor work instead of larger periodic reviews.

    a. Continual auditing throughout the year will provide more timely results when an audit occurs shortly after the contractors' work is completed.
    b. More frequent, routine auditing will show how the performance of contractors, specific crews or individuals are trending throughout the year.

5) Create a formal process for third party reviews.
    a. This will formally document a quality control program and provide a standardized method of performing quality control audits.

6) Database clean-up
    a. Correcting database inconsistencies like misspelled addresses and improper geospatial coordinates will improve the quality of the data and make it easier for database research, audit sampling and trend analysis.
    b. Consider adding pole location accuracy verification to the scope of work in a future pole clearing contract.

****end of report****

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-04	
				Version	2.0	
Effective Date	02/28/2025					
Supersedes	1.0					
Post Work Verification Procedure						

Post Work Verification Procedure

VM-04

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-04
				Version	2.0
	Effective Date	02/28/2025			
	Supersedes	1.0			

Post Work Verification Procedure

Table of Contents

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-04
				Version	2.0
Effective Date	02/28/2025				
Supersedes	1.0				

Post Work Verification Procedure

1 Purpose

The purpose of the Post Work Verification Procedure (“Procedure”) is to define the Vegetation Management (VM) program oversight requirements used to provide reasonable assurance Liberty is meeting the applicable requirements pertaining to VM.

Liberty VM maintains and implements a robust scheduling process to meet mandated compliance inspection requirements. Scheduled maintenance work (vegetation inspection, pruning and removal) is performed by contracted resources. This procedure is intended to provide several levels of defense-in-depth strategy to provide reasonable assurance that inspection and maintenance work is being effectively performed.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management Program

3 Definitions

Refer to Liberty the VM Glossary of Terms for other capitalized terms used in this document.

- **Acceptable Quality Level (AQL)** – Is the maximum number of nonconforming products considered acceptable in a particular sample size based on business, financial and safety levels
- **Compliance Audit (CA)** – The process of independently evaluating an organization to ensure that internal policies and procedures, external rules, regulations, and laws are being followed.
- **Confidence Level (CL)** – The confidence level is the amount of uncertainty tolerated. The higher the CL, the more certain you are of the results. With a CL of 95%, you would expect an error one in 20 times. With a CL of 99%, you would expect an error one in 100 times.
- **Judgmental Sampling** – is a type of nonrandom sample that is selected based on the opinion of an expert. Results obtained from a judgment sample are subject to some degree of bias, due to the frame and population not being identical.
- **Margin of Error (MoE)** – The margin of error is the amount of error that is tolerated.
- **Population Size** – The total number of items (trees/locations/spans) from which to choose a sample.

- **Quality Control (QC)** – Typically verifies a product by testing a sample of the product against a specification, standards, or other criteria. Quality control measures are aimed at checking, measuring, or inspecting a sample of one or more product characteristics and evaluating the results against requirements to confirm compliance.
- **Quality Assurance (QA)** – Typically assesses a process through analysis of objective evidence that supports the program or process for adherence and/or compliance with specific requirements.
- **Reasonable Assurance** – A high, but not absolute, level of assurance.
- **Sample Size** – This is the minimum recommended size for sampling.

4 Detail

4.1 Personnel Qualifications

ISA Certified Arborist with a minimum of three years of experience in Utility Vegetation Management. Additional credentials such as ISA Certified Utility Specialist and Tree Risk Assessment Qualification are preferred.

4.2 Sampling Methodology

QC inspections for VM are based on judgmental sampling and not 100% inspection. Judgment is used to prioritize QC resource allocation based on risk. The intent of QC inspections is to provide reasonable assurance that high quality work is being performed and meeting program requirements.

The sampling performed for Liberty's VM program will identify nonconforming conditions for those items subject to QC inspection.

4.3 Sample Size for Inspection Priority

Table 1 below applies CL and MoE to Inspection Priority and provides recommended sampling mileage. Liberty will use a sample size of approximately 33% of completed tree work on all lines. Liberty will also use a sample size of approximately 33% of completed detailed inspections on all lines. For Hazard Tree mitigation, 10% inspection is performed of completed work. For Pole Brushing, 12% inspection is performed of completed work.

The QC sampling mileage in Table 1 may be adjusted yearly (higher or lower) to address program improvements/concerns. Changes in the sampling mileage will be identified in the annual Quality Control Inspection Plan (Section 4.8) and may also result in revisions to this document.

Table 1: Sample Size (percentage) and Units

Work Type	Category	Annual Circuit Miles	Annual Hazard Trees[1]	Annual Poles	Statistical Sampling[2]		
					CL/MoE	%	Units
Completed Tree Work[3] [4]	T and D	700	-	-	99/7	33	228 Miles
Detailed Inspection[5]	T and D	220	-	-	N/A	33	73 Miles
Hazard Tree Work[6]	T and D	-	6,000	-	99/5	10	597 Trees
Pole Clearing[7]	T and D	-	-	4,900	99/5	12	584 Poles

Note: Circuit mileage sampled should take into consideration density of vegetation.

4.4 Acceptable Quality Level and Conformance Rate

To provide measurement of performance and facilitate trending, the results of post work verifications and quality control inspections are communicated using an Acceptable Quality Level (AQL) and Conformance Rate (CR).

- An AQL is recommended by VM management and agreed upon by the assessed contractor's management
- The CR is used to assess whether performance is meeting or is below the established AQL
- The CR is determined by the number of nonconforming assets (trees/poles) identified within the circuit mile population compared to the number of

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[1] This is an approximate number that could vary significantly from year to year

[2] See Appendix A for underlying calculations

[3] Completed tree work resulting from annual LiDAR inspections and 3-year cycle Detailed Inspections

[4] See Paragraph 4.7.1

[5] See Paragraph 4.7.2

[6] See Paragraph 4.7.3

[7] See Paragraph 4.7.4

assets inspected. An example of how the CR is determined is provided below:

- If 100 assets are inspected in one month and 19 assets are found nonconforming, the CR is 81%. If the AQL for acceptable performance is determined to be 95% CR, then a CR of 81% falls short of the performance expectation by 14%.

Note: Sufficient time is required to establish program maturity that meets VM program expectations. Therefore, establishment of the AQL, scoring criteria and performance trending will occur after sufficient time has passed to allow the program to mature.

4.5 Defense in Depth Oversight Strategy

VM work primarily consists of: (1) inspection; (2) line clearance maintenance; (3) hazard tree mitigation; and (4) pole brushing. To provide reasonable assurance the Liberty VM program is functioning at a high level of compliance, Liberty is implementing an oversight strategy which includes:

- Post Work Verification
- Quality Control Inspections
- Compliance Audit

Post Work Verifications are performed by Liberty and are the initial reviews to confirm project completion. Volume of documentation review and field work is recommended in Section 4.6.

Quality Control Inspections are performed by appropriately trained and qualified entities whose function, and organizational reporting is independent of the VM organization. Quality Control Inspections are performed using judgmental sampling with emphasis on an assigned inspection priority level and are intended to provide reasonable assurance of compliance. Details are provided in Section 4.7.

Compliance Audits are performed by appropriately trained and qualified entities whose function, and organizational reporting is independent of the VM organization. Compliance Audits are performed to monitor the effectiveness of the Liberty VM program. Program effectiveness is measured by field sampling a statistically valid number of locations to provide an objective Compliance Rate. Details are provided in Section 4.8.

4.6 Post Work Verifications – Performed by Liberty

4.6.1 Post Work Documentation Review – Desktop Review

Post Work Documentation Review is performed as follows:

- 100% of submitted work documents are reviewed for accuracy
- After satisfactory review, the work process is approved in Liberty's work management system
    - Errors identified through the review process, are communicated to the contractor, as applicable
    - Documentation errors are communicated back to the contractor for correction

4.6.2 Post Work Validation – Field Review

Post Work Field Validation is performed by Liberty System Arborists as part of their day to day duties. Field work is reviewed for adherence to work specifications, industry standards, and regulatory requirements. Any work that is determined to be unsatisfactory is reported to the contractor to be corrected.

- Errors identified through the field validation/review process, are communicated to the responsible work crew foreman, as applicable
- Inadequate work is remediated and objective evidence to support remediation is provided to Liberty VM personnel.

If unsatisfactory work reported to VM contractors after review fails to yield satisfactory performance, additional controls maybe added to correct performance deficiencies.

4.6.3 Post QC Work Validation – Field Review

A Post QC Field Validation is performed on an as-needed basis to confirm contractor QC inspections are being performed as described in Paragraph 4.7.

4.7 Quality Control Inspections – Performed by QC Inspection Contractor

4.7.1 Tree Pruning and Removal

- All transmission and distribution circuits shall be inspected as follows:
    - 33% of total system miles (see Table 1)
    - If significant inspection criteria violations are identified, the QC inspector (or their representative) must provide timely notification to Liberty Vegetation Management

- QC inspection criteria includes but is not limited to the following:
    - Work was performed to specifications detailed in the scope of work
    - MCD was achieved or work was completed as otherwise described in the work prescription
    - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
    - Complete and accurate documentation of work performed
    - Pruning was completed per ANSI standard
- Work found not performed to specifications are provided to Liberty Vegetation Management to determine if rework is required by the contractor. Once it has been reworked by the contractor, it should be verified by QC contractor as requested by Liberty.

4.7.2 Detailed Inspections

- All inspected work shall be reviewed as follows:
    - 33% of annual circuit miles (see Table 1)
    - Next annual QC inspection should not encompass the same circuit mileage sample
- QC inspection criteria includes but is not limited to the following:
    - Site location and access information are documented and accurate
    - Complete and accurate inventory (e.g., species, all other attributes as required)
    - Appropriate vegetation threat characteristics and mitigation timelines are prescribed
    - Appropriate Work Categories are assigned for Pruning, Removal, and Facility Protect (see Paragraph 'a' below)
    - Notifications are documented
    -
    - Description of slash and debris handling was provided

4.7.3 Hazard Trees

- For the purpose of selecting a sample, the population of Hazard Trees, as defined in VM-03, is comprised of trees that have been removed. To determine the annual population for sampling, a three-year average (2021-2023) was used to estimate 6,000 hazard tree removals each year.

- All hazard tree work shall be inspected as follows:
  - 10% of completed work (see Table 1)
- Hazard Trees will be inspected for the following criteria:
  - Prescription was completed (i.e., monitor, facility protect, remove)
  - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
  - Mitigation did not adversely impact other trees (e.g., adjacent trees exposed to windthrow, etc.)
  - Site conditions are stable after the completion of work

4.7.4 Pole Clearing

- All pole clearing work shall be inspected as follows:
  - 12% of poles with non-exempt equipment (see Table 1)
  - If significant inspection criteria violations are identified, the QC inspector (or their representative) must provide timely notification to Liberty Vegetation Management
- Poles that require brushing (subject poles) will be inspected for the following criteria:
  - Work was completed as required by Public Resource Code (PRC) 4292
  - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
  - ANSI standards were met if pruning was required

4.7.5 QC Planning, Inspection, and Reporting

- The VM Manager is responsible for selecting the circuit mileage to be inspected
- QC inspections are assigned to the QC contractor by Liberty Vegetation Management upon work completion or completion of a reasonable work sample size prior to the planned QC inspection
- QC inspections shall be performed within 60 days of QC work assignment or as reasonably requested by Liberty Vegetation Management
- QC inspection reports shall be provided to Liberty Vegetation Management for review in a timely manner and not to exceed 10 days after the QC work was completed

  - If significant conditions are identified that require immediate attention, the QC contractor shall notify the applicable System Arborist
  - Performance feedback is provided to the appropriate contractor by Liberty Vegetation Management to remediate noted deficiencies
- Reworked conditions are verified for completion
- QC inspection reports are filed in the West General X:Vegetation Management Folder

4.7.6 Inventory Reconciliation

If issues are identified with inventory, the issues shall be reconciled, and appropriate records updated in the inventory system of records.

4.8 Compliance Audits

A CA is a statistically valid field review of OH distribution and transmission lines for adherence to regulation clearance requirements.

- CAs are a field review performed by a QC inspection contractor.
- CAs use industry accepted protocols and calculations to determine a statistically valid sample sizes to be reviewed for both distribution and transmission line miles as part of the QC process.
- A statistically valid sample size of these spans are randomized for selection of the CAs and the tree population size at each sample location is recorded to determine the compliance and conformance rate.
- CA parameters will stay consistent to compare results year-to-year.

4.9 Annual Plans

Annual QC inspection and CA plans are required to identify the planned inspections and audits that will be performed during the calendar year.

Scope identified in the plans may be adjusted to account for any unforeseen schedule issues if the minimum sampling volume is maintained.

The plans should be developed in the 4th quarter of the year preceding the inspection year.

The plans shall be approved by the VM Manager.

5 Approvals

Approved By:	Signature	Date
Eric Oiler, Manager, Vegetation Management	Eric F. Oiler	02/28/2025

6 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1.0	05/21/2021	Peter Stoltman	Initial release for VM Program
2.0	02/28/2025	Eric Oiler	Updates to sample size table and added Compliance Audits

7 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Wildfire Sr. Manager
- VM Manager
- VM Program Administrator
- VM Supervisor
- VM Coordinator
- System Arborist

Appendix A

Sample Size Calculation Example

Common Confidence Levels:

CL	Z-Score
99%	2.576
95%	1.96
90%	1.645

Standard Deviation (Std Dev): 50% *Remains Constant*

Margin of Error (MoE): 5% *Can Vary 1-10%*

Population Size: 2,500

Sample - Underlying Calculations:

$$\text{Sample Size} = \frac{[\text{Z-Score}^2 \text{ x Standard Deviation x } (1 - \text{Standard Deviation}) / \text{Margin of Error}^2]}{[(\text{Z-Score2 x Standard Deviation x } (1 - \text{Standard Deviation}) / \text{Margin of Error2 x Population Size})) + 1]}$$

$$\text{Sample Size} = [2.576^2 \text{ x } 0.5 \text{ x } (1 - 0.5) / 0.05^2] / [(2.576^2 \text{ x } 0.5 \text{ x } (1 - 0.5) / 0.05^2 \text{ x } 2500)) + 1]$$

$$\text{Sample Size} = 663.578 / 1.2654$$

Sample Size = **524**