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1. Introduction

In 2023, Liberty submitted its 2023-2025 Wildfire Mitigation Plan ("WMP") to the Office of Energy Infrastructure Safety ("OEIS" or "Energy Safety"). In 2024, each electrical corporation must provide an update to its approved 2023-2025 Wildfire Mitigation Plan as outlined in the 2025 Wildfire Mitigation Plan Update Guidelines.[1]

This 2025 WMP Update provides updates and information on initiatives, objectives, and targets listed in Liberty's 2023-2025 WMP. Section 2 contains updates on the risk models used to aid the scoping of grid hardening initiatives and guide risk-based de-energization. Section 3 discusses changes in objectives, targets, or expenditures that meet the OEIS threshold. Section 4 provides updates for 2025 quarterly inspection targets. Section 5 describes new Liberty WMP-related programs. Section 6 provides progress on Areas for Continued Improvement ("ACIs").

Liberty continues to improve its wildfire mitigation planning and implementation to progress its WMP initiatives across all WMP categories. Since Liberty's 2023-2025 WMP submission, Liberty has made significant strides to enhance its risk modeling capabilities. These improvements will help inform Liberty's mitigation strategies and initiative selections and increase the ability to target specific mitigations to areas with the highest wildfire and PSPS risk. Liberty continues to advance its grid hardening efforts, including continued covered conductor installation, traditional overhead hardening, and pole replacements. Liberty continues to evaluate the integration of new technologies and is expediting the implementation of its Sensitive Relay Profile ("SRP") program in this WMP cycle. Liberty continues to prioritize its emergency preparedness and community outreach WMP initiatives to support its communities and protect customers from the risks of wildfire and PSPS impacts.

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[1] 2025 Wildfire Mitigation Plan Update Guidelines: https://energysafety.ca.gov/what-we-do/electrical-infrastructure-safety/wildfire-mitigation-and-safety/wildfire-mitigation-plans/2025-wildfire-mitigation-plans/.

2. Updates to Risk Models

2.1 Significant Updates

Energy Safety considers the following qualitative updates to risk models as significant updates:

- Introduction of a new model.
- Discontinuation of an existing model.
- Any change in existing model application or use-case. For example, newly applying an existing vegetation risk model to PSPS decision-making.
- Introduction of new data types. For example, incorporating additional risk drivers into newer versions of a model.
- Changes to data sources. For example, using a new source of data to measure vegetation moisture content.
- Changes to third-party vendors for risk modeling or inputs to risk modeling.[2]

Since its 2023 WMP submission, Liberty has made significant improvements to its risk modeling capabilities as part of the development of a new Risk-Based Decision Making ("RBDM") platform. In 2023, Liberty began foundational work for this platform, enlisting Direxyon Technologies and Technosylva Inc. to provide expertise and risk assessment tools. A modeling framework was then established in collaboration with Direxyon, utilizing its investment planning tools and expertise. Liberty contracted with Technosylva for use of its Wildfire Analyst ("WFA") product suite, which has provided the fire risk modeling outputs necessary to build Liberty's RBDM platform.

Over the last year, Liberty has prioritized the development of a Composite Risk ("CR") score that quantifies risk at the system, circuit, segment, and asset level of granularity. Composite Risk is comprised of modules for Wildfire Risk ("WR") and Asset Failure Risk ("AFR"). Within these modules, Liberty has introduced functional models for Probability of Fire ("WL"), Consequence of Fire ("WC"), Probability of Asset Failure ("APF"), and Consequence of Asset Failure ("ACF"). Refer to Section 6.2.1 of Liberty's 2025 WMP Update, and specifically Figure 6-3, for a visualization of the components within Composite Risk. During development of Liberty's improved RBDM platform, Liberty also worked with Direxyon to determine the appropriate data inputs needed to build these models. Considerations for topography, vegetation-based fuels, climatology, demographics, historic fire weather days, live and dead fuel moisture samples, and impact to the population are quantified using data provided by Liberty and

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[2] 2025 Wildfire Mitigation Plan Update Guidelines, Section 1.1.2.

Technosylva. Refer to Section 6, Table 6-1 for a summary list of the risk models Liberty has introduced, including data inputs.

The Composite Risk score that has been developed, and its sub-models, are central to Liberty's RBDM platform, which will act as a long-term planning risk model to aid in the decisions and strategies for future wildfire mitigation work, with a focus on reducing Liberty's overall risk profile. The development of this model should not be confused with the operational and short-term analysis described in Section 8. Liberty plans to put this updated version of its wildfire risk model into production for use in limited facets of its business starting in Quarter 3 of 2024. Liberty will continue to focus on implementing and utilizing the wildfire risk modeling outputs for grid hardening initiatives (*i.e.*, covered conductor, pole replacements, and fuse replacements), vegetation management initiatives, and related operations. Once put into production, the existing risk calculations that Liberty presented in its 2023 WMP submission, which were modeled for Liberty by REAX Engineering and Arup, will be discontinued.

While Liberty has introduced working modules to its RBDM platform for Wildfire Risk and Asset Failure Risk, PSPS Risk is a factor that has not yet been calculated using the Direxyon Risk Assessment Tool Suite. Liberty plans to develop a PSPS risk model, including PSPS likelihood and consequence, after Fire Risk and Asset Failure Risk modules have been put into production in 2024. For a visualization of how planned PSPS Risk modeling work will fit into Liberty's RBDM platform, refer to Section 6, Figure 6-3.

2.2 Non-Significant Updates

Energy Safety defines non-significant updates as any change or combination of changes to the risk model that does not meet the significant update criteria.[3] Based on OEIS criteria, Liberty has categorized all updates to its risk models as significant and address all the updates in Section 2.1.

[3] 2025 Wildfire Mitigation Plan Update Guidelines, Section 1.2.

3. Changes to Approved Targets, Objectives and Expenditures

3.1 Objectives

Energy Safety defines changes in objectives as any change to forecasted initiative objective completion dates in the approved 2023-2025 Wildfire Mitigation Plan that shift an objective's completion to a different compliance period.[4] This section outlines changes in objective completion dates that meet the OEIS threshold and provides justification for each change. Table 3-1 provides a summary of all changes.

Table 3-1: Changes in Objective Completion Dates

Initiative Category	**2023 3-Year or 10-Year Objective**	**Applicable Initiatives(s), Tracking ID(s)**	**2023-2025 WMP Objective Completion Date**	**Updated 2025 WMP Objective Completion Date**
Grid Design, Operations, and Maintenance	Pilot the resonant grounding or "Swedish neutral" system on one substation within three years, test its risk spend efficiency and effectiveness.	WMP-GDOM-GH-06	12/31/2025	TBD
Grid Design, Operations, and Maintenance	Continue to consider microgrids and line removal as an alternative solution to help with wildfire mitigation. Currently planning to bring a new microgrid online along with line removal in 2024.	WMP-GDOM-GH-07; WMPGDOM-GH-09	Ongoing	Ongoing (no change)
Emergency Preparedness	Update workforce training on incident command system ("ICS")	WMP-EP-01	June 2023	N/A (removed from 3-year objectives)
Emergency Preparedness	Increase granularity and customization of response plans	WMP-EP-05	January 2023	N/A (removed from 10-year objectives)

[4] 2025 Wildfire Mitigation Plan Update Guidelines, Section 2.2.

Initiative Category	2023 3-Year or 10-Year Objective	Applicable Initiatives(s), Tracking ID(s)	2023-2025 WMP Objective Completion Date	Updated 2025 WMP Objective Completion Date
Emergency Preparedness	Ongoing Maintenance of Emergency Response Plans	WMP-EP-02	June 2024 (3-year) None (10-year)	June 2025 (3-year) Ongoing (10-year)
Emergency Preparedness	Continued engagement with local stakeholders to prepare for and respond to fire-related events	WMP-EP-03	June 2024 (3-year) None (10-year)	June 2025 (3-year) Ongoing (10-year)
Emergency Preparedness	Enhanced documentation and use of lessons learned to update plans	WMP-EP-04	June 2024 (3-year) None (10-year)	June 2025 (3-year) Ongoing (10-year)

3.1.1 Resonant grounding or "Swedish neutral" system

Objective: Pilot the resonant grounding or "Swedish neutral" system on one substation within three years, and test its risk spend efficiency and effectiveness.

Change to objective: The objective completion date for piloting the Swedish neutral technology was delayed to assess future cost and resource needs. Liberty is designing its substation rebuilds with provisions to potentially install Swedish neutral systems where possible if Liberty chooses to pursue this technology at a later date.

3.1.2 Microgrids

Objective: Continue to consider microgrids and line removal as an alternative solution to help with wildfire mitigation. Currently planning to bring a new microgrid online along with line removal in 2024.

Change to objective: The objective to consider microgrids and line removal as a solution to help with wildfire mitigation remains unchanged and is still ongoing. Liberty's planned microgrid for 2024 was changed to a covered conductor project due to costs and additional information gathered during Liberty's assessment of the microgrid project. Liberty is planning a microgrid at Beckworth Peak to be completed in 2026 and is assessing other locations for microgrids for the 2026-2028 WMP cycle

3.1.3 Emergency preparedness

Objectives: Update workforce training on ICS (three-year) and increase granularity and customization of response plans (10-year).

Change to objective: Liberty removed both objectives because both objectives were a part of the Energy Safety 2023-2025 WMP template, and they were inadvertently included in Liberty's 2023-2025 WMP.

3.1.4 Emergency response plans

Objective: Ongoing maintenance of emergency response plans.

Change to objective: Liberty updated the three-year completion date for this objective to annual and included it as an ongoing objective in its 10-year plan.

3.1.5 Engagement with emergency response stakeholders

Objective: Continued engagement with local stakeholders to prepare for and responds to fire-related events.

Change to objective: Liberty updated the three-year completion date for this objective to annual and included it as an ongoing objective in its 10-year plan.

3.1.6 Enhanced documentation and use of lessons learned to update emergency preparedness plans

Objective: Enhanced documentation and use of lessons learned to update plans.

Change to objective: Liberty updated the three-year completion date for this objective to annual and included it as an ongoing objective in its 10-year plan.

3.2 Targets and Expenditures

Energy Safety defines qualified target changes as a change in 10% or more for large volume work (equal to or greater than 100 units) or a change of 20% or more for small volume work (less than 100 units). Energy Safety defines qualified changes in expenditures as an increase or decrease of more than $10 million or an increase or decrease that constitutes a greater than 20% change.[5] This section outlines changes in targets and expenditures that meet the OEIS threshold. Table 3-2 provides initiatives with qualifying changes to targets and expenditures.

Table 3-2: Qualifying WMP Initiative Changes in Targets and Expenditures

WMP Initiative	2025 Original Target	2025 Updated Target	2025 Original Expenditures ($ thousands)	2025 Updated Expenditures ($ thousands)
WMP-GDOM-GH-02: Undergrounding of electric lines and/or equipment	1.3 miles	0.4 miles	$7,000	$9,100
WMP-GDOM-GH-05: Traditional overhead hardening	2.0 miles	0 miles	$2,500	$0
WMP-GDOM-GH-12a: Tree attachment removal	60 tree attachments	60 tree attachments	$740	$1,102
WMP-GDOM-GH-12b: Expulsion fuse replacement	TBD	500 expulsion fuses	TBD	$2,000
WMP-GDOM-GH-12e: Open wire/grey wire	-	-	$2,055	$3,000
WMP-GDOM-GH-12f: Substation equipment replacement	TBD	1 substation	TBD	$608
WMP-GDOM-AI-01: Detailed inspections of distribution electric lines and equipment	260.9 miles	260.4 miles	$75	$500

[5] 2025 Wildfire Mitigation Plan Update Guidelines, Section 2.1 and 2.3.

WMP Initiative	2025 Original Target	2025 Updated Target	2025 Original Expenditures ($ thousands)	2025 Updated Expenditures ($ thousands)
WMP-GDOM-AI-02: Intrusive pole inspections	2,411 poles	2,411 poles	-	$175
WMP-GDOM-AI-03: Patrol inspections of distribution electric lines and equipment	540.9 miles	540.9 miles	$15	$150
WMP-GDOM-AI-04: Other discretionary inspections of distribution electric lines and equipment	TBD	1.0 miles	$1,000	$150
WMP-GDOM-AI-05: Quality assurance / quality control of inspections	3% of detailed inspections	12% of detailed inspections	$10	$30
WMP-GDOM-AI-06: Substation inspections	42 substations	42 substations	$10	$45
WMP-GDOM-GO-01: Equipment settings to reduce wildfire risk	-	7 circuits with SRP	$150	$500
WMP-VM-INSP-02: VM Inspection Program - Patrol	-	-	$265	$330
WMP-VM-VFM-03: Substation Defensible Space	-	12 substations	$21	$84
WMP-VM-VFM-04: Fire-Resilient-Right-of-Ways	-	-	$271	$577
WMP-VM-VFM-05: Clearance	-	700 miles	$941	$1,406
WMP-VM-VFM-06: Fall-in Mitigation	220 miles	220 miles	$8,222	$4,810
WMP-VM-ESG-01: VM Enterprise Management System	-	-	$431	$844

WMP Initiative	2025 Original Target	2025 Updated Target	2025 Original Expenditures ($ thousands)	2025 Updated Expenditures ($ thousands)
WMP-SA-02: Grid monitoring systems	10 fault indicators	7 fault indicators	$150	$300
WMP-EP-01: Wildfire and PSPS Emergency Preparedness Plan	-	-	-	$35

3.2.1 WMP-GDOM-GH-02: Undergrounding of electric lines and/or equipment

3.2.1.1 Targets

The 2025 target for undergrounding decreased from 1.3 miles to 0.4 miles.

3.2.1.2 Projected Expenditures

The 2025 projected expenditures for undergrounding increased from $7,000,000 to $9,100,000.

3.2.1.3 Change Justification

The 2025 projected expenditures for undergrounding increased due to cost uncertainties with the Tahoe Vista Rule 20 project. Liberty will issue a request for proposals for this project in Quarter 4 of 2024, which will determine updated projected expenditures for the project.

3.2.2 WMP-GDOM-GH-05: Traditional overhead hardening

3.2.2.1 Targets

The 2025 target for traditional overhead hardening decreased from 2.0 miles to 0.0 miles.

3.2.2.2 Projected Expenditures

The 2025 projected expenditures for traditional overhead hardening decreased from $2,500,000 to $0.

3.2.2.3 Change Justification

The 2025 target and projected expenditures for traditional overhead hardening decreased because Liberty significantly exceeded its 2023 target for this initiative and will shift resources

to other grid hardening projects in 2025. Specifically, Liberty completed 9.2 miles of traditional overhead hardening compared to 4.0 miles targeted in 2023.

3.2.3 WMP-GDOM-GH-12a: Tree attachment removal

3.2.3.1 Targets

The 2025 target for tree attachment removals did not change. The target remains at 60 tree attachment removals.

3.2.3.2 Projected Expenditures

The 2025 projected expenditures for tree attachment removals increased from $740,000 to $1,101,673.

3.2.3.3 Change Justification

The 2025 projected expenditures for tree attachment removals increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.4 WMP-GDOM-GH-12b: Expulsion fuse replacement

3.2.4.1 Targets

The 2025 target for expulsion fuse replacement was established at 500 expulsion fuse replacements.

3.2.4.2 Projected Expenditures

The 2025 projected expenditures for expulsion fuse replacement was established at $2,000,000.

3.2.4.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not have a 2025 target or 2025 projected expenditures established for its expulsion fuse replacement WMP initiative. Refer to Liberty's response to Area of Improvement LU-23-14: Expulsion fuse replacement targets.

3.2.5 WMP-GDOM-GH-12e: Open wire/grey wire

3.2.5.1 Targets

The 2025 target for open wire/grey wire did not change. The target remains at 5.2 miles.

3.2.5.2 Projected Expenditures

The 2025 projected expenditures for open wire/grey wire increased from $2,055,000 to $3,000,000.

3.2.5.3 Change Justification

The 2025 projected expenditures for open wire/grey wire increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.6 WMP-GDOM-GH-12f: Substation equipment replacement

3.2.6.1 Targets

The 2025 target for substation equipment replacement was established at 1 substation.

3.2.6.2 Projected Expenditures

The 2025 projected expenditures for substation equipment replacement was established at $6,087,584.

3.2.6.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not have a 2025 target or 2025 projected expenditures established for its Substation Equipment Replacement WMP initiative.

3.2.7 WMP-GDOM-AI-01: Detailed inspections of distribution electric lines and equipment

3.2.7.1 Targets

The 2025 target for detailed inspections of distribution electric lines and equipment did not change. The target remains at 260.4 miles.

3.2.7.2 Projected Expenditures

The 2025 projected expenditures for detailed inspections of distribution electric lines and equipment increased from $75,000 to $500,000.

3.2.7.3 Change Justification

The 2025 projected expenditures for detailed inspections of distribution electric lines and equipment increased due to improved accuracy of Liberty's cost projection based on year-to-date actual spend for this initiative as well as an adjustment for increased labor costs.

3.2.8 WMP-GDOM-AI-02: Intrusive pole inspections

3.2.8.1 Targets

The 2025 target for intrusive pole inspections did not change. The target remains at 2,411 poles.

3.2.8.2 Projected Expenditures

The 2025 projected expenditures for intrusive pole inspections was established at $175,000.

3.2.8.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not provide 2025 projected expenditures for its intrusive pole inspections WMP initiative.

3.2.9 WMP-GDOM-AI-03: Patrol inspections of distribution electric lines and equipment

3.2.9.1 Targets

The 2025 target for patrol inspections of distribution electric lines and equipment did not change. The target remains at 540.9 miles.

3.2.9.2 Projected Expenditures

The 2025 projected expenditures for patrol inspections of distribution electric lines and equipment increased from $15,000 to $75,000.

3.2.9.3 Change Justification

The 2025 projected expenditures for patrol inspections of distribution electric lines and equipment increased due to improved accuracy of Liberty's cost projection based on year-to-date actual spend for this initiative as well as an adjustment for increased labor costs.

3.2.10 WMP-GDOM-AI-04: Other discretionary inspections of distribution electric lines and equipment

3.2.10.1 Targets

The 2025 target for other discretionary inspections of distribution electric lines and equipment was established at 1.0 miles.

3.2.10.2 Projected Expenditures

The 2025 projected expenditures for other discretionary inspections of distribution electric lines and equipment decreased from $1,000,000 to $150,000.

3.2.10.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not have a 2025 target established for its other discretionary inspections of distribution electric lines and equipment WMP initiative. The 2025 projected expenditures for other discretionary inspections of distribution electric lines and equipment decreased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.11 WMP-GDOM-AI-05: Quality assurance / quality control of inspections

3.2.11.1 Targets

The 2025 target for quality assurance/quality control (QA/QC) of asset inspections increased from 3% to 12%.

3.2.11.2 Projected Expenditures

The 2025 projected expenditures for QA/QC of asset inspections increased from $10,000 to $30,000.

3.2.11.3 Change Justification

The 2025 target for QA/QC of asset inspections increased due to the establishment of a formal QA/QC program for asset inspections. The 2025 projected expenditures for QA/QC of asset inspections increased due to adjustments made based on the implementation of Liberty's formal QA/QC program for asset inspections.

3.2.12 WMP-GDOM-AI-06: Substation inspections

3.2.12.1 Targets

The 2025 target for substation inspections did not change. The target remains at 42 substations.

3.2.12.2 Projected Expenditures

The 2025 projected expenditures for substation inspections increased from $10,000 to $45,000.

3.2.12.3 Change Justification

The 2025 projected expenditures for substation inspections increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.13 WMP-GDOM-GO-01: Equipment settings to reduce wildfire risk

3.2.13.1 Targets

The 2025 target for equipment settings to reduce wildfire risk was established at seven circuits with Sensitive Relay Profile ("SRP") settings implemented.

3.2.13.2 Projected Expenditures

The 2025 projected expenditures for equipment settings to reduce wildfire risk increased from $150,000 to $500,000.

3.2.13.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not have a 2025 target established for the equipment settings to reduce wildfire risk WMP initiative. Liberty's 2025 target aligns with its target for WMP-SA-02: Grid monitoring systems. The 2025 projected expenditures for equipment settings to reduce wildfire risk increased due to additional experience developing Liberty's SRP program.

3.2.14 WMP-VM-INSP-02: VM Inspection Program – Patrol

3.2.14.1 Targets

The 2025 target for VM patrol inspections did not change. Liberty does not establish targets for its VM patrol inspections WMP initiative.

3.2.14.2 Projected Expenditures

The 2025 projected expenditures for VM patrol inspections increased from $265,225 to $330,173.

3.2.14.3 Change Justification

The 2025 projected expenditures for VM patrol inspections increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.15 WMP-VM-VFM-03: Substation Defensible Space

3.2.15.1 Targets

The 2025 target for substation defensible space did not change. Liberty does not establish targets for its VM substation defensible space WMP initiative.

3.2.15.2 Projected Expenditures

The 2025 projected expenditures for substation defensible space increased from $21,218 to $84,365.

3.2.15.3 Change Justification

The 2025 projected expenditures for substation defensible space increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.16 WMP-VM-VFM-04: Fire-Resilient-Right-of-Ways

3.2.16.1 Targets

The 2025 target for fire-resilient-right-of-way did not change. Liberty does not establish targets for its VM Fire-Resilient-Right-of-Way WMP initiative.

3.2.16.2 Projected Expenditures

The 2025 projected expenditures for fire-resilient-right-of-way increased from $270,530 $577,360.

3.2.16.3 Change Justification

The 2025 projected expenditures for fire-resilient-rights-of-way increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.17 WMP-VM-VFM-05: Clearance

3.2.17.1 Targets

The 2025 target for clearance was established at 700 miles.

3.2.17.2 Projected Expenditures

The 2025 projected expenditures for clearance increased from $940,912 to $1,405,502.

3.2.17.3 Change Justification

The 2025 projected expenditures for clearance increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.18 WMP-VM-VFM-06: Fall-in Mitigation

3.2.18.1 Targets

The 2025 target for fall-in mitigation did not change. The target remains at 220 miles.

3.2.18.2 Projected Expenditures

The 2025 projected expenditures for fall-in-mitigation decreased from $8,221,975 to $4,810,059.

3.2.18.3 Change Justification

The 2025 projected expenditures for fall-in-mitigation decreased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.19 WMP-VM-ESG-01: VM Enterprise Management System

3.2.19.1 Targets

The 2025 target for VM enterprise management system did not change. Liberty does not establish targets for its VM Enterprise Management System WMP initiative.

3.2.19.2 Projected Expenditures

The 2025 projected expenditures for VM enterprise management system increased from $430,731 to $843,648.

3.2.19.3 Change Justification

The 2025 projected expenditures for VM enterprise management system increased due to adjustments made to align 2025 expenditures with historical spend data.

3.2.20 WMP-SA-02: Grid monitoring systems

3.2.20.1 Targets

The 2025 target for grid monitoring systems decreased from 10 fault indicators to 7 fault indicators.

3.2.20.2 Projected Expenditures

The 2025 projected expenditures for grid monitoring systems increased from $150,000 to $300,000.

3.2.20.3 Change Justification

The 2025 target for grid monitoring systems decreased due to adjustments made based on additional experience developing Liberty's SRP program. Liberty's 2025 target aligns with its target for WMP-GDOM-GO-01: Equipment settings to reduce wildfire risk. The 2025 projected expenditures for grid monitoring systems increased due to additional experience developing Liberty's SRP program.

3.2.21 WMP-EP-01: Wildfire and PSPS Emergency Preparedness Plan

3.2.21.1 Targets

The 2025 target for wildfire and PSPS emergency preparedness plan did not change. Liberty does not establish targets for its Wildfire and PSPS Emergency Preparedness Plan WMP initiative.

3.2.21.2 Projected Expenditures

The 2025 projected expenditures for wildfire and PSPS emergency preparedness plan was established at $35,000.

3.2.21.3 Change Justification

At the time of its 2023 WMP submission, Liberty did not have 2025 projected expenditures established for its Wildfire and PSPS Emergency Preparedness Plan WMP initiative. The 2025 projected expenditures for wildfire and PSPS emergency preparedness planning were established based on relevant historical spend data.

4. Quarterly Inpsection Targets for 2025

Table 4-1 lists quarterly targets for 2025 asset and vegetation inspections. If 2025 end-of-year targets were adjusted from what was reported in the 2023-2025 WMP, a change justification has been provided in Section 3.2.

Table 4-1: Asset Inspection and Vegetation Management Targets for 2025

WMP Initiative	Target End of Q2 2025	Target End of Q3 2025	End of Year Target 2025
WMP-GDOM-AI-01: Detailed inspections of distribution electric lines and equipment	65 miles	195 miles	260.4 miles
WMP-GDOM-AI-02: Intrusive pole inspections	0 poles	500 poles	2,652 poles
WMP-GDOM-AI-03: Patrol inspections of distribution electric lines and equipment	270 miles	540.9 miles	540.9 miles
WMP-GDOM-AI-04: Other discretionary inspections of distribution electric lines and equipment	0.5 miles	0.75 miles	1.0 miles
WMP-GDOM-AI-05: Quality assurance / quality control of inspections	0% of detailed inspections	0% of detailed inspections	12% of detailed inspections
WMP-GDOM-AI-06: Substation inspections	10 substations	22 substations	42 substations
WMP-VM-INSP-01: Vegetation Management Inspection Program – Detailed	110 miles	165 miles	220 miles
WMP-VM-INSP-03: Vegetation Management Inspection Program - LiDAR	0 miles	700 miles	700 miles
WMP-VM-QAQC-01: VM QA/QC	120 miles	229 miles	229 miles

5. New or Discontinued Programs

Liberty includes information on one new WMP-related program in Section 4.1.

5.1 New Programs

In July 2023, Liberty initiated a new component of its Vegetation Management QA/QC program. This includes a QA inspection of vegetation in vicinity of its power lines for adherence to regulatory minimum clearance requirements and conformance to Liberty standards. The QA assessment is composed of a random statistical sample of distribution and transmission line segments from its entire system. The QA assessment sets a baseline for future audits and ability to measure compliance and conformance over time. At 95% confidence, 99% estimate of compliance and a 3% error rate, a sample size of 41 miles was audited. Liberty intends to continue to implement QA assessments on its system on a similar timeframe and before fire season. Liberty found that it was 98.87% compliant by span and 99.48% compliant by number of trees assessed within the sample spans.

5.2 Discontinued Programs

Liberty does not plan to discontinue any WMP programs in 2025.

6. Progress on Areas for Continued Improvement

This section provides required progress on the Areas of Continued Improvement identified by Energy Safety.[6]

6.1 LU-23-01: Cross-Utility Collaboration on Risk Model Development

Description: Liberty and the other IOUs have participated in past Energy Safety-sponsored risk model working group meetings. The risk model working group meetings facilitate collaboration among the IOUs on complex technical issues related to risk modeling. The risk model working group meetings are ongoing.

Required Progress: Liberty and the other IOUs must continue to participate in all Energy Safety-organized risk model working group meetings.

Liberty Response: Liberty looks forward to continued participation in Energy Safety-sponsored risk modeling working group ("RMWG") meetings. These meetings have allowed Liberty to learn from and benchmark against the other IOUs when discussing risk modeling best practices and identifying potential areas of improvement related to the technical aspects of wildfire and PSPS risk modeling for planning and operational purposes. The RMWG provides valuable perspectives from various stakeholders, including utilities, state agencies, and intervening parties.

6.2 LU-23-02: PSPS and Wildfire Risk Trade-Off Transparency

Description: Liberty does not provide adequate transparency regarding PSPS and wildfire risk trade-offs, or how it uses risk ranking and risk buy-down to determine risk mitigation selection.

Required Progress: In its 2025 Update, Liberty must describe:

- How it prioritizes PSPS risk in its risk-based decisions, including trade-offs between wildfire risk and PSPS risk.
- How the rank order of its planned mitigation initiatives compares to the rank order of mitigation initiatives ranked by risk buy-down estimate, along with an explanation for any instances where the order differs.

Liberty Response: Liberty does not currently calculate trade-offs between wildfire risk and PSPS risk. Liberty prioritizes mitigation initiatives based on wildfire risk and asset failure risk. Liberty

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[6] Decision on 2023-2025 Wildfire Mitigation Plan; Liberty, Section 11.

has implemented zero PSPS events and considers the risk of PSPS to be low compared to that of wildfire risk. Liberty's PSPS Risk Model, currently in development, will allow for additional analysis of wildfire and PSPS risk trade-offs. Liberty provides updated descriptions of wildfire and PSPS risk in Sections 6 and 7 of its updated 2023-2025 WMP.

6.3 LU-23-03: Collaboration Between Vendor and Utility Risk Teams

Description: Liberty has not shown how its internal team and risk model vendor will share risk modeling and mitigation related duties.

Required Progress: In its 2025 Update, Liberty must:

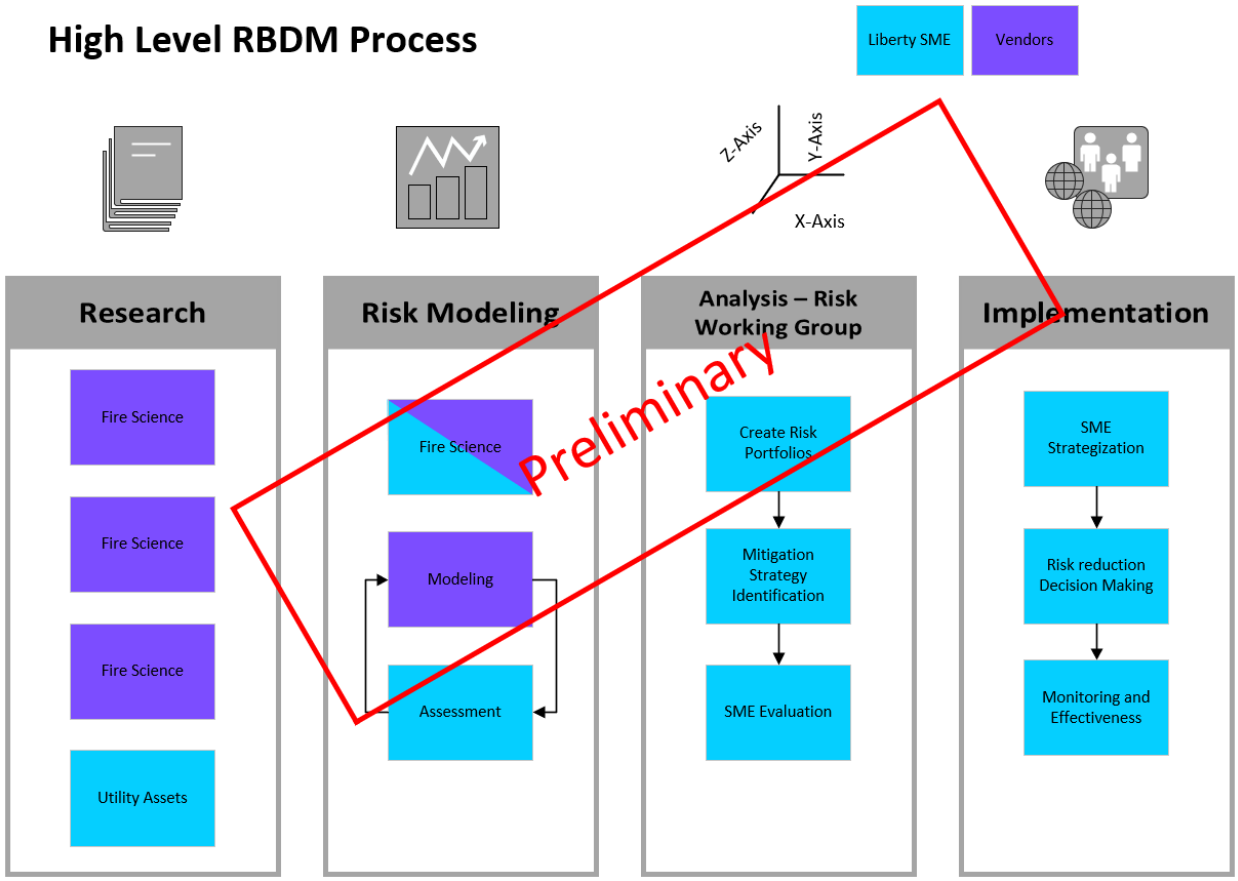
- Demonstrate how Liberty differentiates between activities completed by the internal staff and vendor staff throughout risk modeling narratives. This includes processes, procedures, methodologies, flow charts, schematics, and any explanations that describe collaboration with a risk modeling vendor.
- Demonstrate how Liberty identifies activities that require vendor discretion and state whether final approval from the Liberty risk team is required. This includes any decisions that need to be made, such as mitigation selection.
- Indicate the source of the data where a description of data is required, specifically indicating whether the data are internally generated or vendor generated. If Liberty cannot indicate the source of the data, it must explain why.

Liberty Response: Liberty collaborates with vendors to develop its overall risk models and relies on vendors to provide a platform for running simulations and analyzing different scenarios. Liberty is responsible for producing simulations, analysis, and resulting mitigation decision-making.

Liberty employees meet with vendors regularly to discuss progress on risk model development. Aside from the technical aspects of the model, such as underlying infrastructure, code, and maintenance, all decisions require approval from Liberty. Liberty subject matter experts review preliminary results from model outputs to approve the methodology and to provide input on how to improve the model.

Liberty describes the data sources used for the wildfire risk model in Section 6.5 and its risk modeling approach in Section 7.1 of its updated 2023-2025 WMP. Refer to Figure 6-1 for a high level summary of how Liberty's SMEs and Liberty's risk model vendors will share risk modeling and mitigation related duties.

Figure 6-1: Liberty High Level Risk-Based Decision-Making Framework Process



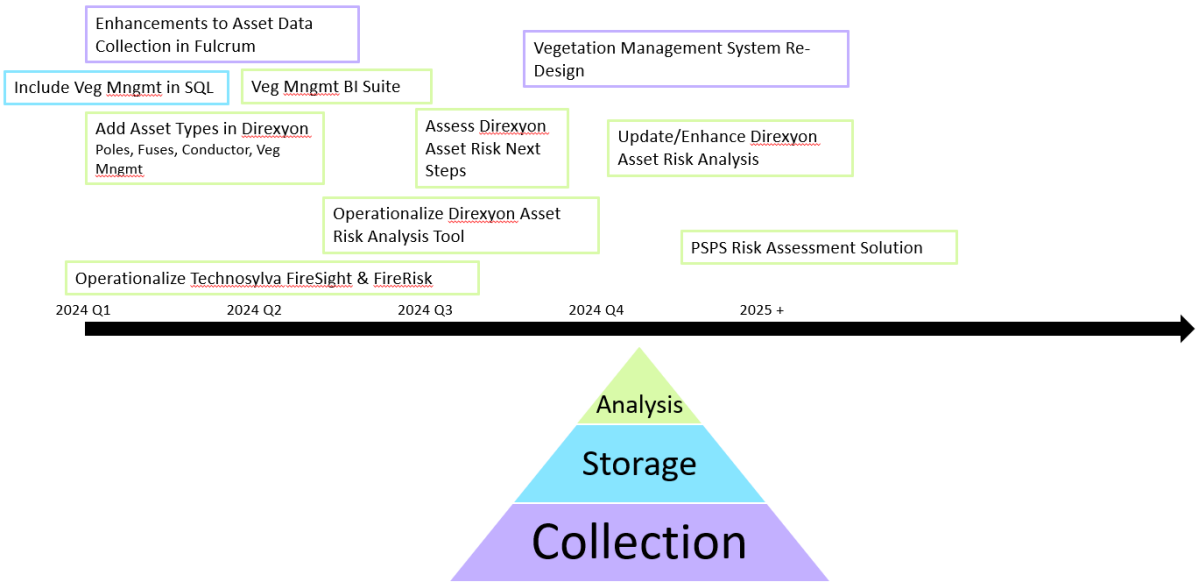
6.4 LU-23-04: Vendor Fire Risk Model Implementation Milestones and Dates

Description: Liberty's operational and planning models may experience many changes once the vendor model implementation is complete. Energy Safety needs more information regarding improvements Liberty expects in its operational and planning models along with expected milestones and dates to ensure Liberty is being transparent about the state of its model maturity.

Required Progress: In its 2025 Update, Liberty must describe how it will use the new vendor risk modeling software to improve operational and/or planning risk analysis and provide a plan with milestones and dates for achieving those improvements.

Liberty Response: Liberty provides additional information regarding improvements to Liberty's wildfire risk models, along with expected milestones and dates throughout Section 6 of its updated 2023-2025 WMP. Also refer to Figure 6-2 below.

Figure 6-2: Timeline of Liberty's Risk Modeling Plan



6.5 LU-23-05: Cross-Utility Collaboration on Best Practices for Inclusion of Climate Change Forecasts in Consequence Modeling, Inclusion of Community Vulnerability in Consequence Modeling, and Utility Vegetation Management for Wildfire Safety

Description: Liberty and the other IOUs have participated in past Energy Safety-sponsored scoping meetings on these topics but have not reported other collaboration efforts.

Required Progress: Liberty and the other IOUs must participate in all Energy Safety-organized activities related to best practices for:

- Inclusion of climate change forecasts in consequence modeling.
- Inclusion of community vulnerability in consequence modeling.
- Utility vegetation management for wildfire safety.

Liberty must collaborate with the other IOUs on developing the above-mentioned best practices. In their 2025 Updates, the IOUs (not including independent transmission operators) must provide a status update on any collaboration with each other that has taken place, including a list of any resulting changes made to their WMPs since the 2023-2025 WMP submission.

Liberty Response: Liberty looks forward to continued participation in Energy Safety-sponsored scoping meetings on topics related to inclusion of climate change forecasts in consequence

modeling, inclusion of community vulnerability in consequence modeling, and utility vegetation management for wildfire safety. As of its 2025 WMP Update submission, Liberty has no changes to report as a result of collaboration with other IOUs on these topics in 2024.

6.6 LU-23-06: Effectiveness of SRP and Traditional Hardening

Description: Liberty states that it is not pursuing more installation of covered conductor due to implementation of SRP and the use of traditional hardening, but does not adequately demonstrate the effectiveness or comparability of SRP versus covered conductor.

Required Progress: In its 2025 Update, Liberty must:

- Provide its calculations for ignition reduction effectiveness for covered conductor compared to SRP, traditional hardening, and SRP in combination with traditional hardening. This must demonstrate considerations of various ignition risk drivers, deployment time and resources, performance comparison in forested versus non-forested areas, and risk model output of riskiest areas.
- Adjust its covered conductor targets accordingly based on the analysis provided.

Liberty Response: Liberty is pursuing more installation of covered conductor as part of its Wildfire Mitigation Plan. SRP is being implemented as an expedited mitigation strategy to provide additional risk reduction with covered conductor and is not being implemented as an alternative to covered conductor. Liberty has experienced delays in permitting covered conductor projects, and SRP is being used to provide expedited risk reduction while covered conductor projects continue to be planned and permitted. Traditional hardening is also selected for circuits in high fire risk areas. Due to its limited history of utility-caused ignitions, reliability data is used as a proxy for ignition reduction effectiveness. Circuits where traditional hardening and covered conductor has been installed show significant improvement in reliability metrics. Refer to Figure 6-3 for a summary table of Liberty SAIFI and SAIDI metrics on select circuits from 2021-2024. SRP has not been implemented on the system or included in the risk model to allow for calculations on its effectiveness. In selecting SRP for its ignition reduction effectiveness, Liberty relied on data from other utilities that have been using it as a mitigation strategy. Specifically, San Diego Gas and Electric has been using SRP for over a decade with no ignitions downstream of SRP-enabled devices while maintaining system reliability.[7]

[7] https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-and-enforcement-division/fast-trip/sdge--fast-trip-unplanned-outages-and-distribution-reliability-workshop-presentation.pdf.

When comparing SRP to traditional overhead hardening and covered conductor, Liberty considers cost, time, and resource requirements for implementing as well as ignition reduction effectiveness. Refer to Table 6-1 for a summary of Liberty's evaluation of these three WMP initiatives. Liberty's evaluation determined that they are all effective and will all be used as part of Liberty's overall risk mitigation strategy.

Figure 6-3: Liberty SAIFI and SAIDI Summary (2021-2024)

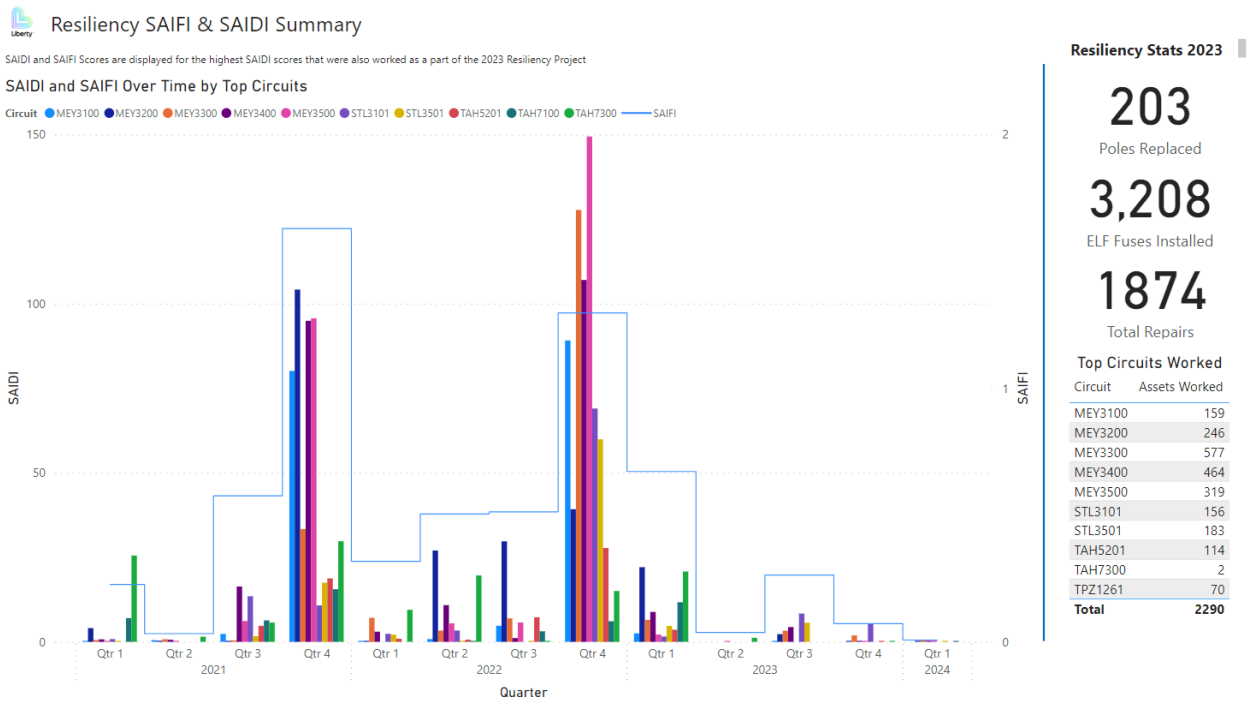


Table 6-1: Summary of Liberty's Evaluation of SRP, Traditional Overhead Hardening, and Covered Conductor WMP Initiatives

Initiative	Cost Per Mile	Time to Implement	Resource Needs	Effectiveness
Sensitive Relay Profile	Low	Low	Low	High
Traditional Overhead Hardening	Moderate	Moderate	Moderate	High
Covered Conductor	High	High	Moderate	High

6.7 LU-23-07: Further Design Considerations

Description: Liberty's maturity for the grid design and resiliency capability does not project comparable growth when compared to its peers.

Required Progress: In its 2025 Update, Liberty must provide a plan demonstrating how it will progress in maturity for the grid design and resiliency capability by 2026. This must include advancements in considering grid localization features as well as non-electrical corporation equipment as part of its grid design, design evaluation, and grid impact evaluation. If Liberty does not find that it is necessary to advance in these areas, Liberty must justify why these considerations are not necessary as part of its wildfire risk evaluations.

Liberty Response: Liberty considers both grid localization features as well as non-electrical corporation equipment as part of its grid design, design evaluation, and grid impact evaluations. If Liberty's responses to the WMP Maturity Survey indicated a lack of maturity in these areas, it is likely due to a misunderstanding of the question as presented in the WMP Maturity Survey. Upon further review of Liberty's responses to the 2023 WMP Maturity Survey, Liberty's SMEs would have revised its responses to demonstrate higher maturity. Liberty will continue to look for ways to advance both issues.

Liberty considers grid localization features in the establishment of its PSPS zones, SRP implementation, and outage management system. For instance, Liberty's SRP program will allow Liberty's operations teams to increase relay sensitivity on select lines using weather forecasting and situational awareness to decrease fire risk. Liberty also plans to install fault detectors as part of its SRP implementation to decrease restoration times.

Liberty considers non-electrical corporation equipment, including communications equipment, in pole loading calculations to current standards. Through the Joint Pole Association process, Liberty will reach out to other pole attachment holders to review whether Liberty's calculations for pole loading meets their needs or whether a request to increase pole size is necessary.

6.8 LU-23-08: Halting Detailed Distribution Inspections

Description: Liberty elected to halt its Detailed Distribution inspections in 2023 to focus on reducing its work order backlog. Liberty did not explain how it will continue to manage its backlog after resuming detailed distribution inspections.

Required Progress: Required Progress: In its 2025 Update, Liberty must:

- Update Energy Safety on the effectiveness of its decision to halt detailed inspections to address its work order backlog. Liberty must provide an analysis comparing the number

of work orders closed in 2021, 2022, and 2023 to the number of work orders created in 2021, 2022, and 2023.

- Explain how it will continue to reduce its backlog after resuming detailed inspections on January 1, 2024. This discussion must include a forecast of the number of tags Liberty expects to open in 2024 and 2025 that accounts for a potential increase in findings resulting from incorporating LiDAR, infrared, and drone technologies into its inspection portfolio. Liberty must provide the number of tags it expects to close in 2024 and 2025. If the utility expects to close ten percent or more tags in either 2024 or 2025 than the average annual tags closed from 2020-2022, it must provide its reasoning.

Liberty Response: Liberty did not elect to halt detailed distribution inspections in 2023. Liberty initially targeted 156.4 miles of detailed inspections for 2023 (See Liberty_2022_Q4_Tables1-15_R1, Table 12). After an analysis of open work orders, Liberty considered halting detailed inspections and subsequently revised its 2023 target to 40.3 miles of detailed inspections (See Liberty_2023_Q4_Tables1-15_RO, Table 12) to reduce the backlog of open work orders. Liberty later determined that it should not halt or reduce detailed inspections and completed 181.4 miles for this initiative in 2023, exceeding the initial target of 156.4 miles, which was reported in Q4 2022.

When comparing work orders created to the number of work orders closed in 2021, 2022, and 2023, Liberty closed an average of 1,376 work orders per year. Using a three-year average of number of work orders closed and average number of work orders created per mile of line inspected, Liberty calculates that it would close approximately 444 work orders more than will be created in 2024 and 2025. To eliminate the current backlog of 604 work orders, Liberty will need to increase the number of closed work orders to 1,456 (6% increase over three-year average) for the next two years. Refer to Figure 6-4.

Figure 6-4: Liberty Asset Inspection Work Orders by Year, 2021-2025

Liberty's target of 264.2 miles of detailed inspections in 2024 is not a substantial increase over previous years. Based on the analysis conducted, an increase in findings from inspections over previous years is not expected to constrain Liberty's ability to eliminate its backlog of open work orders.

Due to its decision not to halt or reduce detailed inspections in 2023 and the ability to consistently close more work orders than is projected to be created in 2024 and 2025, Liberty's current approach to performing inspections and repairs will allow for the elimination of the work order backlog by the end of 2025.

6.9 LU-23-09: Covered Conductor Inspections and Maintenance

Description: Liberty does not incorporate checks in its inspection programs that address failures specific to covered conductor. Liberty must tailor its inspection practices to address failure modes specifically related to covered conductor.

Required Progress: In its 2025 Update, Liberty must explain how failure modes unique to covered conductor will be accounted for in its inspections, including water intrusion, splice covers, and surface damage. If Liberty determines any or all the preceding changes are unnecessary, then it must provide how its current inspection and maintenance processes address covered conductor failure modes.

Liberty Response: Liberty's current inspection and maintenance activities address covered conductor failure modes. Upon installation, a post-construction inspection is conducted to assess the covered conductor for adherence to construction standards, and manufacturer specifications. Refer to Appendix A the Spacer Cable Inspection Checklist.

Liberty follows General Order (GO) 95 overhead electric line construction standards and GO 165 minimum timing requirements for inspections. Detailed inspections include common or known failure modes for all construction types including covered conductor. To account for specific issues related to covered conductor, Liberty is adding water intrusion, splice covers, surface damage/bulging, and bracket placement to its detailed inspection checklist.

6.10 LU-23-10: Distribution detailed inspection frequency

Description: Liberty performs the minimum frequency of detailed inspections required by GOs 95 and 165. Liberty must strive to adopt a risk-based approach by increasing the frequency of detailed inspections on assets that have the highest risk according to its risk model.

Required Progress: In its 2025 Update, Liberty must either:

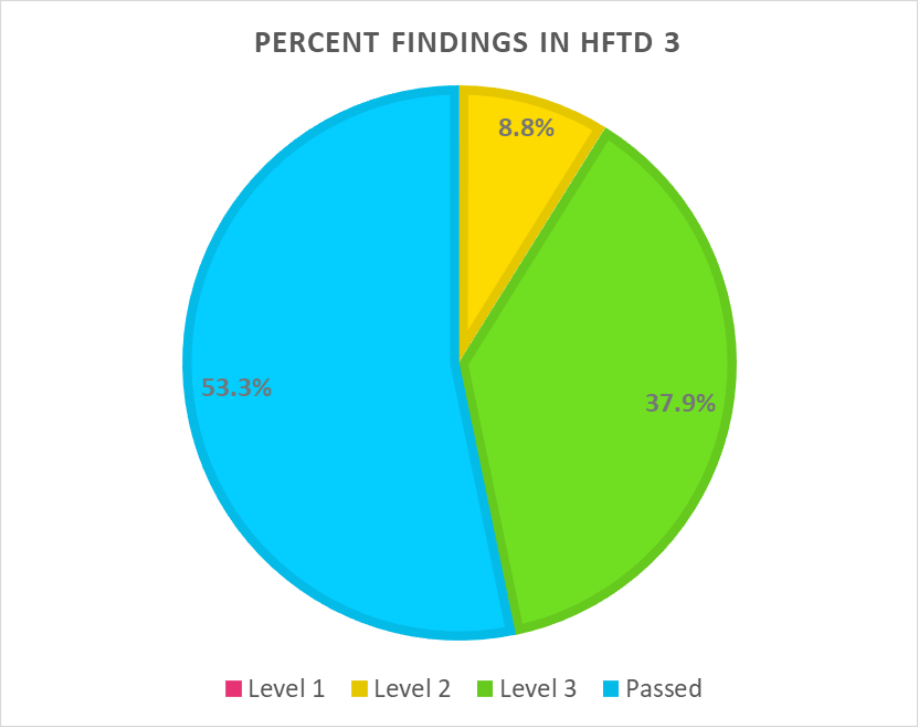
- Outline a plan to update its detailed inspections in higher risk areas, including:
    - An analysis for determining the updated frequency for performing detailed inspections.
    - Prioritization of higher risk areas based on risk analysis and risk model output, including HFTD Tier 3 lands.
    - Updates to inspection checklists to account for equipment or configurations that may pose greater wildfire risk.
    - A plan to obtain any needed workforce for performing more frequent inspections; OR
- Demonstrate that its existing inspection program adequately addresses risk. This must include analysis of the following:
    - Number of Level 1 or critical issues found during detailed inspections.

Liberty Response: Liberty's existing program adequately addresses risk and would not significantly reduce risk by increasing inspection frequency. An analysis of 2,290 detailed inspection records in Liberty's database show that 0.04% of inspections in HFTD Tier 3 resulted in a Level 1 issue found. When examining non-critical issues, 53.28% inspections were passed, and 37.86% Level 3 issues were found. This equates to 91.14% of inspections being no or low risk findings in HFTD Tier 3 lands. The remaining 8.82% of inspections resulted in a Level 2 finding, which Liberty follows the corrective action timeline established in General Order 95, Rule 18 of six months to address the risk. Refer to Table 6-2 and Figure 6-5.

Table 6-2: Liberty Findings from Detailed Asset Inspections

Findings from Detailed Inspections					
HFTD	Level 1	Level 2	Level 3	Passed	Grand Total
3	1	202	867	1220	2290
	0.04%	8.82%	37.86%	53.28%	100.00%

Figure 6-5: Liberty Findings from Detailed Asset Inspections



6.11 LU-23-11: QA/QC sample size and pass rates

Description: Liberty has created asset inspection QA/QC targets for 2023, but not for 2024 or 2025. Instead, Liberty explained it did not provide the 2024 and 2025 targets given the infancy of its program, and its intention to set these targets based on prior year experience. In its 2025 Update, Liberty must provide QA/QC pass rate targets for 2025.

Required Progress: Liberty must establish asset inspection QA/QC targets for 2025. The 2025 targets must demonstrate Liberty's progress toward industry standards in asset inspection QA/QC pass rates, and account for an appropriate increase in 2024. Liberty must strive to reach industry standard QA/QC pass rates by the end of 2025, such as SCE's target of 95 percent, SDG&E's target of 100 percent, and PG&E's target of 95 percent for distribution detailed inspections.

Liberty Response: Liberty has established an asset inspection QA/QC target of 90% for 2024 and 2025.

6.12 LU-23-12: Additional Inspection Practices

Description: Liberty states that it plans to incorporate three technologies, LiDAR, infrared, and drone inspections, during the 2023-2025 WMP cycle. Liberty must provide more information on these programs.

Required Progress: In its 2025 Update, Liberty must:

- Define the pilot program scope for each technology.
- Provide a project milestone timeline for each technology.

Liberty Response:

- Infrared inspections: In 2023, Liberty piloted and completed 0.1 miles of fixed wing drone infrared inspections on its transmission assets. The inspections were performed on 120kV and 60kV riser poles to identify hot spots on the potheads, cable and other associated hardware at the riser locations. No discrepancies were noted during these inspections. Liberty's assessment of this technology is still ongoing.
- Drone inspections: Liberty plans to pilot one mile of drone inspections in 2024, utilizing an internal drone and pilot. Liberty will target these drone inspections for outage management.
- LiDAR inspections: Liberty will be performing a one-time LiDAR inspection of Liberty's system, with a focus on gaining increased visibility and data for mapping tree attachments and secondary wires. The LiDAR inspection is scheduled for late-July – early-August 2024.

6.13 LU-23-13: Lightning arrester replacement

Description: Liberty states that it is evaluating CAL FIRE-exempt arresters for the replacement of installed non-exempt arresters. Liberty has not provided a timeline for the evaluation and pilot process or a plan for identifying and tracking installed, non-exempt arresters.

Required Progress: In its 2025 Update, Liberty must provide:

- A timeline for the evaluation and pilot phase of exempt lightning arrester installation.
- A plan to identify and track currently installed non-exempt arresters.

Liberty Response:

Liberty's evaluation timeline is as follows:

- Q3 2024 evaluation and selection of exempt lightning arrester to be piloted,
- Q4 2024 – Q1 2025 engineering standards committee review and engineering/construction standards development,
- Q1-Q2 2025 selected lightning arrester procurement,
- Q3-Q4 2025 lightning arrestor installation/pilot implementation.

Regarding the currently installed non-exempt arresters, Liberty's asset tracking application will be utilized to identify and track arresters in the field. When an exempt arrester is selected, Liberty will use the asset tracking application for project tracking.

6.14 LU-23-14: Expulsion fuse replacement targets

Description: Liberty has not provided expulsion fuse replacement targets for 2024 or 2025. Instead, Liberty explained it did not provide targets due to project delays resulting from a high rate of field failures associated with replacement fuses and its intended transition to a new type of expulsion fuse.

Required Progress: In its 2025 Update, Liberty must provide an expulsion fuse replacement target for 2025 that encompasses fuses to be replaced in both 2024 and 2025.

Liberty Response: Liberty is targeting 500 expulsion fuse replacements in 2024 and 500 expulsion fuse replacements in 2025. Liberty has updated Table 8-3 and Section 8.12.12 of its 2023-2025 WMP to reflect these targets.

6.15 LU-23-15: Reliability Impacts of SRP

Description: Liberty has not demonstrated an understanding of the reliability impacts of using SRP.

Required Progress: In its 2025 Update, Liberty must:

- Provide the following information for 2023 outages that occurred while SRP settings were enabled in a spreadsheet format:
    - Circuit impacted by outage.
    - Circuit segment impacted by outage.
    - Cause of outage (in line with QDR Table 6 drivers).
    - Number of customers impacted.
    - Number of customers impacted belonging to vulnerable populations (such as customers with access and functional needs and Medical Baseline customers).
    - Duration of outage.
    - Response time to outage.

    - Customer minutes of interruption.
- Provide Liberty's calculations on the effectiveness of the SRP implementation. This must demonstrate calculations of avoided ignitions based on outages that occurred.
- Discussion of any expected changes in SRP implementation based on the above, including percentages of coverage across Liberty's territory and SRP enablement thresholds used by Liberty.

Liberty Response: Liberty did not implement its SRP program in 2023 and did not enable fast-trip settings throughout 2023. Thus, there were zero outages that occurred in 2023 while SRP settings were enabled. Additionally, Liberty does not have calculations on the effectiveness of SRP implementation, including calculations of avoided ignitions based on outages that occurred. Liberty monitors the implementation of similar settings at other IOUs in California, including review of other IOU WMPs and associated filings, participating in WMP workshops and public meetings, and through Joint IOU groups discussing the implementation of wildfire mitigation technologies. Liberty plans to implement its SRP program on 15 circuits in 2024 and seven circuits in 2025, which will result in 67.45% of Liberty's primary distribution conductor being covered by SRP by the end of 2025. Liberty will enable SRP settings on its system when a Red Flag Warning is issued by the National Weather Service or when the Severe Fire Danger Index ("SFDI") reaches a rating of "Severe". Based on an analysis of historical weather data for the system, Liberty estimates approximately 10-12 days per year when SRP will be enabled.

6.16 LU-23-16: Evaluation of High Impedance Fault Detection

Description: Liberty does not provide adequate justification as to why it is not moving forward with HIFD technology.

Required Progress: In its 2025 Update, Liberty must provide:

- A list of the types of faults covered and not covered by HIFD showing 70 percent effectiveness as discussed in its WMP.
- Evaluation of the effectiveness of HIFD in preventing ignitions, both independently and when used in combination with SRP.
- Analysis demonstrating the percentage of unnecessary faults caused by HIFD. This should include qualitative as well as quantitative analysis in the form of results from implementation along the Liberty's Meyers 3400 circuit, including a spreadsheet of the faults and associated causes experienced during enablement.
- Discussion of Liberty's coordination with other utilities on implementation of HIFD, including observed effectiveness.
- Adjustment of its HIFD implementation targets accordingly given the above analysis.

Liberty Response: The University of Nevada Reno ("UNR") completed a Fire Mitigation Protection System Study for Liberty. Liberty provides this study in Appendix B. This report recommends that Liberty should no longer pursue HIFD and should pursue a fast trip or SRP scheme to reduce fire risk. The relevant findings of the UNR study include the following:

- The SEL relay detected 67.6% of the HIF test cases (998 HIFs were detected out of 1,476 HIF cases).
- The average detection time of HIF detection methods is around 50 seconds. Therefore, even though the relay can reduce human safety risks, the high detection time makes it less effective for mitigating wildfire hazards.
- The SEL relay detection performance is independent from arc resistance uncertainty. The relay shows approximately the same detection rate for different values of uncertainty. Also, the relay HIF detection time is independent from uncertainty levels.
- The dependability rate and detection time of the HIF methods of the relay are independent of the fault positions along the feeder.
- The dependability rate for SEL 451 is better for high sensitivity setting of 1 as opposed to 0 for low sensitivity. However, increasing sensitivity may compromise the security rate of the method by detecting no-fault scenarios as fault scenarios. Because utilities cannot tolerate trips for no-fault scenarios, a residual overcurrent element, 67G, can be used to improve the security. The element 67G is asserted if 3I0 is higher than a specified pickup. Therefore, the high sensitivity can be used only if the 67G pickup is met.
- In general, the relay phase determination accuracy is almost 63% and 55% for arcing sensitivity level equals to 1 and 0, respectively.
- In Section 5, fast tripping scheme and settings for several utilities are discussed as a practical technique to reduce the fault clearing time in distribution networks. Fast tripping lowers the released energy and in turn mitigates the fire risk in distribution networks. Based on the extensive RTDS simulations and results shown in this report, UNR strongly recommends that a fast-tripping scheme be implemented in high fire risk areas to reduce the fault clearing time; thereby significantly mitigating the fire risk.

6.17 LU-23-17: Progress toward eliminating vegetation management work order backlog

In its Final Decision on Liberty's 2023-2025 WMP, Energy Safety removed LU-23-17 and left the identification numbering for the remaining areas for continued improvement unchanged.

6.18 LU-23-18: Weather Station Optimization

Description: In 2023, Liberty plans to use a weather station optimization tool to identify spatial gaps in its weather station network and determine if additional weather stations are needed. Liberty must report on its progress as it completes the assessment.

Required Progress: In its 2025 Update, Liberty must:

- Describe how the weather optimization tool was used to assess the density of weather stations in its service territory.
- Provide any locations identified for additional weather stations installations.
- Include the number of weather stations planned for future installations of weather stations, based on its assessment.

Liberty Response: Liberty engaged Eagle Rock Analytics to perform a weather station optimization analysis for its system to evaluate how well the network captures the diversity of climate conditions within Liberty's territory. After the analysis was performed, Liberty installed four additional weather stations at recommended locations. Liberty has since provided the updated location data of its weather station network, and Eagle Rock Analytics is using the data to determine the potential utility of re-running the analysis. There are no additional weather stations currently planned for installation. Refer to Appendix C for the analysis performed by Eagle Rock Analytics.

6.19 LU-23-19: Weather Station Maintenance, and Calibration

Description: Liberty reports having 35 weather stations in its network but no maintenance or calibrations on those weather stations in three years. Frequent calibration and maintenance of weather stations is crucial for ensuring accurate, reliable, and high-quality data. As Liberty performs its annual weather station and maintenance and calibration, Energy Safety will need Liberty to report on the following to verify the integrity of the data collected from its weather station network.

Required Progress: Liberty must:

- Maintain and keep a log of all the annual maintenance and calibration for each weather station, including the station name, location, conducted maintenance, in compliance with Liberty's weather station installation document, as well as document the annual replacement of any sensors. The log must also include the length of time from initiation of a repair ticket to completion and the corrective maintenance performed to bring the station back into functioning condition.

- In its 2025 Update, provide documentation indicating the number of weather stations that received their annual calibration and the number of weather stations that were unable to undergo annual maintenance and/or calibration due to factors such as remote location, weather conditions, customer refusals, environmental concerns, and safety issues. This documentation must include:
    - The station name and location.
    - The reason for the inability to conduct maintenance and/or calibration.
    - The length of time since the last maintenance and calibration.
    - The number of attempted but incomplete maintenance or calibration events for these stations in each calendar year.

Liberty Response:

Liberty commenced its weather station maintenance and calibration program in January 2024. Before this, none of the weather stations in the network received annual maintenance or calibration. Maintenance and calibration logs will be available after the project is completed in 2024. Refer to Appendix D for the scope of work for the annual maintenance and calibration program.

6.20 LU-23-20: Early detection of Ignitions with HD Cameras

Description: Since its 2021 WMP update, Liberty has continually reported that it would partner/adopt HD wildfire cameras each year for early detection of wildfires. However, Liberty still does not have any equipment installed that can detect or monitor ignitions on the grid.

Required Progress: In its 2025 Update, Liberty must:

- Provide a plan for the adoption of the targeted eight HD cameras, including what factors caused the delay and how Liberty is working to resolve the delay. Liberty must also provide an outline on the development and implementation of policy and procedures for HD cameras in its service territory.
- Include the number and locations of all the HD cameras that have been adopted.
- Provide an explanation, including any challenges, or roadblocks if the adoption, operationalization, or development of policies and procedures for HD cameras do not get implemented by the time of the submission of Liberty's 2025 Update.

Liberty Response:

Liberty is working with University of Nevada Reno ("UNR") to execute an agreement to provide funding for the maintenance of existing cameras, through the ALERT Wildfire program, within the view shed of Liberty's service territory. There was a delay in executing this agreement, due

to UNR exploring the privatization of this program. UNR ultimately decided not to proceed with the privatization of the ALERT Wildfire program ,and Liberty is awaiting an updated proposal from UNR that will inform the future development of policy and procedures for the cameras.

The initial proposal included the adoption of eight cameras. As part of the new agreement, UNR is performing a view shed analysis to propose locations of existing cameras for Liberty to adopt or potentially install new cameras where current coverage is lacking for the service territory. The number and locations of cameras is not currently available.

7. Appendix A: Spacer Cable Inspection Checklist

8. Appendix B: Fire Mitigation Protection System Study for Liberty Utilities

9. Appendix C: Eagle Rock Analytics Analysis on Weather Stations

10. Appendix D: Scope of Work for Weather Station Maintenance and Calibration