



Liberty Utilities (CalPeco Electric) LLC
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June 2, 2022

DATA REQUEST RESPONSE

LIBERTY UTILITIES (CALPECO ELECTRIC) LLC 2022 WMP

Data Request No.: CalAdvocates-Liberty-2022WMP-09
Subject Matter: 2022 Wildfire Mitigation Plan
Originator: Aaron Louie
Due Date: June 2, 2022

REQUEST NO. 1:

Regarding Table 12 in Liberty's Excel file titled "Liberty_2022__Q1_Performance_Metrics_Data_FINAL" Row 38, under WMP Initiative #7.3.4.1 (Detailed inspections of distribution electric lines and equipment):

- a) Please explain how 2021 resulted in \$409,000 OPEX for 20 circuit miles inspected but will yield 308 circuit miles inspected in 2022 for \$400,000 OPEX.
- b) The goal to inspect 20% of the system annually was not met in 2021 and is not projected to be met in 2022; please explain how the entire system territory will be inspected by the five-year cycle required by GO 165 when it is next due?
- c) Please provide the projected number of circuit miles to be detail inspected in 2023, Row 38, Column BB.
- d) How many individual inspections did Liberty have that occurred in the 20 circuit miles that occurred in 2021?
- e) How many individual inspections does Liberty project will occur in the 308 circuit miles that is projected for 2022?
- f) What is the average number of spans and poles per circuit mile?

RESPONSE TO REQUEST NO. 1:

- a) Liberty erroneously reported 20 circuit miles for detailed inspections in 2021. The actual number is 59.8 circuit miles completed for detailed inspections in 2021. The forecasted amount of \$400,000 for detailed inspections in 2022 is an ongoing average of annual spend on general GO165 inspections and repairs for Liberty.
- b) Liberty completed a full system survey of its overhead assets in 2020. In 2021, Liberty only inspected underground assets since the full system survey was completed on the overhead in 2020. Liberty's 2021-2025 schedule will meet GO 165 requirements.

- c) 156.5 circuit miles.
- d) 618 locations.
- e) 5,285 locations.
- f) 35.03 poles per circuit mile.

REQUEST NO. 2:

Regarding Table 12, in Liberty's Excel file titled "Liberty_2022__Q1_Performance_Metrics_Data_FINAL" Row 43 WMP Initiative #7.3.4.6 (Intrusive pole inspections):

- a) Please provide the projected number of poles to be inspected for 2023, Row 43, Column BB.

RESPONSE TO REQUEST NO. 2:

- a) 3,046 poles.

REQUEST NO. 3:

Regarding Table 12, in Liberty's Excel file titled "Liberty_2022__Q1_Performance_Metrics_Data_FINAL" Row 46, WMP Initiative #7.3.4.9 (Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations):

- a) Please explain the cost breakdown for the 2021 actual, 2022 projection and 2023 projection.

RESPONSE TO REQUEST NO. 3

- a) The actual 2021 costs for WMP initiative 7.3.4.9 include repairs completed in 2021. Most repairs in 2021 were GO 165 Level 2 and Level 3 repairs in response to the total system inspection done in 2020. Forecasted 2022 and 2023 costs for WMP initiative 7.3.4.9 are based on actual spend in Quarter 1 of 2022 extrapolated over the next two years, factoring in seasonal variations. Actual spend in Q1 2022 includes GO 165 Level 2 and Level 3 repairs and represents comparable repair spend forecasted for 2022 and 2023.

REQUEST NO. 4:

Regarding Table 12, in Liberty's Excel file titled "Liberty_2022__Q1_Performance_Metrics_Data_FINAL" Row 48 WMP Initiative #7.3.4.11 (Patrol inspections of distribution electric lines and equipment):

- a) Please provide the projected number of circuit miles to be inspected for 2023, Row 48, Column BB.

- b) Please provide an explanation why Liberty inspected 2,500 circuit miles in 2021, but only projects to inspect 70 circuit miles in 2022.

RESPONSE TO REQUEST NO. 4

- a) 592 circuit miles.
- b) Liberty erroneously reported 2,500 circuit miles for patrol inspections in 2021. The actual number is 662 circuit miles completed for patrol inspections in 2021. Liberty also erroneously projected 706 circuit miles for patrol inspections as stated in Section 5.3 and Table 5.3-1 of Liberty's 2022 WMP Update and 70 circuit miles as stated in Table 12 of Attachment A to Liberty's 2022 WMP Update. The actual projection is 502.9 circuit miles for patrol inspections in 2022. Liberty's errors are attributed to data entry errors.

REQUEST NO. 5:

Regarding Table 12, in Liberty's Excel file titled "Liberty_2022_Q1_Performance_Metrics_Data_FINAL" Row 52 WMP Initiative #7.3.4.15 (Substation inspections):

- a) Please explain how the number 46 is obtained for the number of substations inspected in 2021.
- b) Please explain how the number 42 is obtained for the number of substations projected to be inspected in 2022.
- c) Please provide a copy of the GO 174 Substation Inspection Plan.
- d) Please provide a copy of five of the most recent Inspections completed.

RESPONSE TO REQUEST NO. 5

- a) In 2021, Liberty inspected 11 substations quarterly and two substations annually. This equates to 46 inspections total for 2021.
- b) Brockway substation was decommissioned and will no longer be inspected quarterly. This yields 42 substation inspections projected for 2022.
- c) Refer to Attachment: Substation Inspection Program Procedure.
- d) Refer to Attachment: Substation Inspection Report Q1 2022.

REQUEST NO. 6:

Please provide an estimate for how many man-hours it takes in order to conduct and complete an asset inspection from start to finish.

RESPONSE TO REQUEST NO. 6

Liberty estimates the following for inspection times:

- Substation inspections: approximately 1.0 hours per substation;
- Pole location, detailed overhead inspection: approximately 0.25 hours per location;

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- Padmount equipment, detailed underground inspection: approximately 0.25 hours per location;
- Submersible equipment/vault, detailed underground inspection: approximately 0.5 hours per location.

REQUEST NO. 7:

Please explain why Liberty is not using LiDAR to conduct inspections on distribution electric lines and equipment.

RESPONSE TO REQUEST NO. 7

Liberty has recently piloted and is currently using LiDAR for vegetation management inspections. Cost estimates for electric line inspections in the original proposals from vendors were prohibitive.

If you have any questions or require any additional information, please contact me at:

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GENERAL PROCEDURE

Proc. #: **8800-0000-15-09**

Description: **Substation Inspection Program**

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Title: CalPeco Substation Inspection Program	Rev. 3.0 05/15/2020	Author: Cooper Compliance
Director, Operations:		
Electrical Engineer II:		
General Order 174 CPUC Standard(S)		

1.0 Revision History

Date	Rev #	Description	Sponsor
7/25/2013	1.0	Original	MJ Cooper
6/25/2014	2.0	Deleted Substations no longer used, deleted table of equipment not relevant, added or corrected references and links, made minor grammar corrections and clarifications, updated screen shots of the SharePoint website.	MJ Cooper
5/15/20	3.0	Add reference section (GO 174), format, update SharePoint links, removed manual approval section and used review and approval tracking system,	Cooper Compliance (Henry Hadjor)

This procedure complies with the requirements described in the California Public Utilities Commission’s General Order 174, effective at the date the revision was signed. This procedure will be revised as necessary.

Each revision of this procedure shall be reviewed and approved by the authorized senior manager or delegate.



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2.0 Purpose

This procedure documents Liberty Utilities (CalPeco Electric) LLC's Substation Inspection Program. This Program focuses on inspecting equipment and support structures while patrolling through a substation. These inspections are separate from scheduled preventative maintenance and corrective maintenance activities performed at substations as required to satisfy NERC Reliability Standards.

3.0 Scope/Applicability

The substation equipment includes, but is not limited to, batteries, buses, support structure, capacitor banks, circuit breakers, fire detection and suppression systems, grounding systems, insulators/bushings, arrestors, perimeter fences and gates, transformers, reactors, and voltage regulators. The CalPeco's substations included in this program are:

- Brockway
- Cemetery
- Glenshire
- Hobart
- Kings Beach
- Meyers
- Northstar
- Portola
- Sierra Brooks
- Squaw Valley
- Stampede
- Stateline
- Tahoe City

The inspection records are maintained on the Liberty Utilities' Compliance SharePoint [Maintenance Center](#).

Protection equipment maintenance and test requirements applicable to the NERC Reliability Standards are defined and controlled through Procedure 8800-150-200-006, Protection System Maintenance, and are not repeated in this procedure.



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4.0 Definitions

Term	Definition
Customer Substation	A Substation that functions as the main source of electric power supply for a single customer, including those that provide feed through for additional customers.
Discrepancy	A noteworthy anomaly, material, or structural deficiency.
Inspection	A basic evaluation, generally performed using visual and auditory senses, but which could be conducted by other means.
Operator	An electric utility subject to General Order 174
Substation	An assemblage of equipment (e.g., switches, circuit breakers, buses, and transformers) under the control of qualified persons, through which electric energy is passed for the purpose of switching or modifying characteristics.
Substation Operator	The personnel who, by reason of training, experience, and instruction, are responsible for inspecting and maintaining substation equipment.

5.0 Other References

California Public Utility Commission [General Order 174](#), Rules for Electric Utility Substations, Adopted October 25, 2012 by Decision 12-10-029.

6.0 Responsibilities

Person	Responsibility
Director, Operations	<ul style="list-style-type: none"> Monitor the maintenance intervals to ensure maintenance cycles are met. Review contractor maintenance records for completeness and accuracy. No later than July 1st of each year, provide an Inspection Program Summary to the Utilities Safety and Reliability Branch (USRB) of the California Public Utilities Commission (CPUC). The report should include the total number of completed and past due inspections for the prior calendar year.
Engineer, Substation	<ul style="list-style-type: none"> Ensure all inspections are carried out in accordance with the schedule as described in Section 7.0. Review inspection results to ensure discrepancies and degradation are addressed in a timely manner. Provide inspection data and records to Operations Director. Upload Inspection files to the Liberty Utilities SharePoint site.



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Operator/Technician	<ul style="list-style-type: none"> • Report to the Director of Operations any observations of equipment degradation during substation visits through the Substation Inspection Report. • Perform inspections described in Subsections 7.1 through 7.9 below. • Record results in the Substation Inspection Report including the following information at a minimum: <ul style="list-style-type: none"> ○ Inspector name or identification number / code ○ Inspection date ○ Inspection results ○ Discrepancies identified ○ Corrective actions, completion date, and / or reference
Compliance Administrator (Cooper Compliance)	<ul style="list-style-type: none"> • Upload inspection files to the Liberty Utilities' Compliance SharePoint site. • Enter inspection data in the website as specified in Section 13.0 below. • Assist Operations Director in preparing annual filing to the CPUC by July 1st.

7.0 Procedures

7.1 Substation Inspections

Maintenance and inspection of substation equipment are necessary to promote the safety of workers and the public and to ensure adequacy of service. The sections below define the routine inspections performed on the substation equipment identified in the scope of this procedure, Section 3.0.

Substation Patrol Inspections are to be performed quarterly with the exception of Hobart and Stampede, which can only be inspected once per year due to access issues. When scheduling does not permit inspections every three months, they must be conducted no longer than four months from the previous inspection.

The inspection records are maintained in the Liberty Utilities' Compliance SharePoint site in the Maintenance Log Library. The following inspections are to be performed and the conditions recorded for each type of equipment as specified below:



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7.1.1 Oil Breakers

Step	Test
Verify	<ul style="list-style-type: none"> • Tank oil level is okay • Bushing oil level is okay • Tank oil leaks do not exist • Porcelain condition is good • High voltage and ground connections are okay • Spring charge – hydraulic/air pressure are okay • Hydraulic/air leaks do not exist • Mechanism is okay • Counter operations are logged • Non-fault operations to subtract are logged • Actual operations since last read are logged • Compressor hours/motor starts are logged

7.1.2 Vacuum Breakers

Step	Test
Verify	<ul style="list-style-type: none"> • Porcelain condition is good • High voltage and ground connections are okay • Spring charge – hydraulic/air pressure are okay • Hydraulic/air leaks do not exist • Indicator lights are good • Mechanism is okay • Counter operations are logged • Non-fault operations to subtract are logged • Faults since last read are logged

7.1.3 Gas/Air Breakers

Step	Test
Verify	<ul style="list-style-type: none"> • Porcelain condition is good • High voltage and ground connections are okay • Spring charge – gas/air pressure are okay • Gas/air leaks do not exist • Mechanism is okay • Counter operations are logged



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Step	Test
	<ul style="list-style-type: none"> Non-fault operations to subtract are logged Faults since last read are logged

7.1.4 Load Tap Changer (LTC)

Step	Test
Verify	<ul style="list-style-type: none"> Porcelain condition is good Bushing oil level is good Tank oil leaks do not exist N2 cylinder pressure is okay High voltage and ground connections are okay All cooling is operational Present top oil temperature is okay Peak top oil temperature is okay Present low voltage winding temperature is okay Peak low voltage winding temperature is okay Present high voltage winding temperature is okay Peak high voltage winding temperature is okay Oil level is okay Oil filtration is okay LTC counter is logged LTC position max is logged LTC position min is logged LTC oil level is okay Nitrogen tank pressure is okay



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7.1.5 Transformers

Step	Test
Verify	<ul style="list-style-type: none">• Porcelain condition is good• Bushing oil level is okay• Tank oil leaks do not exist• N2 cylinder pressure is okay• High voltage and ground connections are okay• All cooling is operational• Present top oil temperature is okay• Peak top oil temperature is okay• Present low voltage winding temperature is okay• Peak low voltage winding temperature is okay• Present high voltage winding temperature is okay• Peak high voltage winding temperature is okay• Oil level is okay• Nitrogen tank pressure is okay

7.1.6 Regulators

Step	Test
Verify	<ul style="list-style-type: none">• Porcelain condition is good• Tank oil leaks do not exist• High voltage and ground connections are okay• All cooling operational• Present top oil temperature is okay• Peak top oil temperature is okay• Regulator counter is logged• Regulator max is logged• Regulator min is logged• Oil level is good



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7.1.7 Vacuum Reclosers

Step	Test
Verify	<ul style="list-style-type: none">• Porcelain condition is good• High voltage and ground connections are okay• Recloser status indication is good• Indicator lights are good• Relay targets are logged and reset• Mechanism is okay• Counter operations are logged• Non-fault operations to subtract are logged• Actual operations since last read are logged• Battery is good• Cabinet is good• Auto setting is set• Ground trip normal is set• Misc. switches are good• Oil Level is good• Tank oil leaks do not exist

7.1.8 Oil Reclosers

Step	Test
Verify	<ul style="list-style-type: none">• Porcelain condition is good• Oil Level is good• Tank oil leaks do not exist• High voltage and ground connections are okay• Battery is good• Relay targets are logged and reset• Cabinet is good• Auto setting is set• Ground trip normal is set• Misc. switches are good• Counter operations are logged• Non-fault operations to subtract are logged• Actual operations since last read are logged



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7.1.9 Substation General Inspections

Step	Test
Verify	<ul style="list-style-type: none"> • Insulator condition is good • All air break switches are okay • All ATS systems are operational • Station/control house lights are good • Air conditioners/heaters are functional • Eye wash station is good • Fire extinguisher is good • Indicator lights are good • Batteries and chargers are good • Relay targets are logged and reset • Check and sign log book • Fence or gate condition is good • Weeds are maintained • Buses are good • Support structures are good • Capacitor banks are good • Reactors are good

8.0 Training Requirements

Inspections shall be performed by persons who, by reason of training, experience and instruction, are qualified to perform the task.

9.0 Personal Protective Equipment (PPE)

Appropriate PPE will be worn by personnel performing maintenance or working on or around the associated electrical equipment.

10.0 Documentation / Recordkeeping

Electronic or hard copy records of completed inspections shall be retained for not less than five (5) years in Liberty Utilities' Compliance SharePoint site.

11.0 Related Documents and Forms

Substation Inspection Template



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12.0 References

Requirement	Description	Page and Paragraph
GO174 Section III 30	<p>General 30</p> <ul style="list-style-type: none"> • 30.1 Each Operator shall establish, update as needed, and follow an Inspection Program. At a minimum, this Program shall specify for each piece of equipment and system listed in Rule 32.1: <ul style="list-style-type: none"> ○ Inspection activities ○ Frequency of Inspections ○ Record keeping and retention • 30.2 Inspections shall be performed by persons who, by reason of training, experience and instruction, are qualified to perform the task. 	Page 5
GO174 Section III 31	<p>31 Frequency</p> <ul style="list-style-type: none"> • 31.1 Substations shall be inspected as frequently as necessary. <ul style="list-style-type: none"> ○ Time intervals or other bases shall be specified in the Inspection Program. 	Page 5
GO174 Section III 32	<p>32 Facilities</p> <ul style="list-style-type: none"> • 32.1 Facilities subject to Inspection shall include, but are not limited to: <ul style="list-style-type: none"> ○ Batteries ○ Buses ○ Support Structures ○ Capacitor Banks ○ Circuit Breakers ○ Fire Detection and Suppression System (Where applicable) 	This document



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Requirement	Description	Page and Paragraph
	<ul style="list-style-type: none">○ Grounding System○ Insulators/Bushing/Arrestors○ Perimeter Fences and Gates○ Transformers○ Reactors○ Voltage Regulators	
GO174 Section III 33	<p>33 Records</p> <ul style="list-style-type: none">● 33.1 Electronic or hard copy records of completed Inspections shall include, at a minimum:<ul style="list-style-type: none">○ Inspector name or identification○ Inspection date○ Brief description of identified discrepancies○ Condition rating (where applicable)○ Scheduled date of corrective action (where applicable)● 33.2 Electronic or hard copy records of completed Inspections shall be retained for not less than five (5) years.	Page 13

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13.0 Appendix – Maintenance Log

13.1 Liberty Utilities’ Compliance SharePoint Instructions

Log in to [Liberty Utilities Compliance Center](#) using the appropriate credentials.



Then select [Liberty Utilities Maintenance Center](#) at the top tab.



Select Add New Test Record (Global Audit-Ready PSMP) shown in the screen shot below.

Select the Facility, Equipment Type and Equipment. Then select all the check box before uploading the document. See the screen shot below for illustration.



Enter the actual inspection data corresponding to the form questions. Select the Submit button at the top to complete the process. See the screen shot below for illustration.

The last step is to upload the inspection records into the “Global Audit-Ready Maintenance Log” Document Library.

