



Liberty Utilities (CalPeco Electric) LLC
933 Eloise Avenue
South Lake Tahoe, CA 96150

June 2, 2020

To: Utilities Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission

**Liberty Utilities (CalPeco Electric) LLC (U 933-E)
2019 Substation Inspection Program Summary**

Purpose

Pursuant to California Public Utilities Commission (“CPUC”) General Order 174 (“GO 174”), Liberty Utilities (CalPeco Electric) LLC (U 933-E) (“Liberty CalPeco”) provides this summary of its Substation Inspection Program for the **2019** calendar year.

Requirements of General Order 174

GO 174 sets forth the “requirements for substation inspection programs, the application of which will promote the safety of works and the public and enable adequacy of service”. GO 174 applies to “electric utilities subject to the jurisdiction of the [CPUC]”, but “facilities subject to the California Independent System Operator operational control and/or the FERC reliability standards and Customer Substations are exempt”.

Under GO 174, “Operators” (which includes Liberty CalPeco) must provide, no later than July 1 of each year, an Inspection Program Summary. The Inspection Program Summary will include a “report summarizing completed and past due Inspections for the prior calendar year” and describe “[c]hanges to the Inspection Program... including the effective date of the change.” Furthermore, “[s]hould no changes occur since the previous filing, the Operator shall transmit written correspondence confirming that no changes were made to the Program.”

Liberty Utilities’ Substation Inspection Program

As required by GO 174, Liberty CalPeco established its Substation Inspection Program based on accepted best utility practices. The full Substation Inspection Program is attached to this Summary and was most recently revised on **May 15, 2020**.

Staff responsibilities are described in Section 6.0 of the Substation Inspection Program. Detailed observation questions and test specifications are outlined in Sections 7.0 of the Substation Inspection Program for each type of equipment to be inspected. Criteria for general substation inspections are detailed in Section 7.1.9.

Liberty CalPeco’s inspection records include the inspector’s name, inspection date, a brief description of any identified discrepancies, and any corrective actions taken. The records also include test and observation results specific to each piece of equipment being inspected.

Inspections Performed in the Prior Calendar Year

Inspection Type	Completed in <u>2019</u>	Past Due in <u>2019</u>
GO 174 Substation Inspections	46	0

In **2019**, a total of **46** inspections were completed and **0** inspections were past due.

Substation Patrol inspections were completed on a quarterly basis for the following 11 of Liberty Utilities' 13 substations:

1. Brockway Substation
2. Cemetery Substation
3. Glenshire Substation
4. Kings Beach Substation
5. Meyers Substation
6. Northstar Substation
7. Portola Substation
8. Sierra Brooks Substation
9. Squaw Valley Substation
10. Stateline Substation
11. Tahoe City Substation

Consistent with Liberty CalPeco's Substation Inspection Program, Hobart and Stampede Substations were inspected in quarters two and three once road conditions allowed access. The Substation Inspection Program states that the Hobart and Stampede Substations will be inspected annually in quarter two or three as weather permits. Hobart Substation was accessible and inspected in May, 2019. Stampede Substation was accessible and inspected in July, 2019.

Some minor changes have been made to the Substation Inspection Program since the previous submittal in July 2019 and is included with this submittal.

Daniel W. Marsh
Manager of Rates and Regulatory Affairs
Liberty Utilities (CalPeco Electric) LLC



Liberty UtilitiesSM

Liberty Utilities (CalPeco Electric) LLC
933 Eloise Avenue
South Lake Tahoe, CA 96150

Attachment A

Liberty Utilities (CalPeco Electric) LLC
Substation Inspection Program



Approval Log for Substation Inspection Program Procedure

Date: 5/15/20

Revision: 3.0

Prepared by: Henry Hador,Melinda H. Campbell

Name	Action
Dylan Harris	Reviewed 5/21/20
Henry Hador	Finalized 5/22/20
Blaine Ladd	Approved 5/22/20



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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 	
<p>GO174 Section III 33</p>	<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. 	<p>Page 13</p>

 Liberty Utilities WATER GAS ELECTRIC		933 Eloise Avenue South Lake Tahoe, California 96150 530-543-5235		
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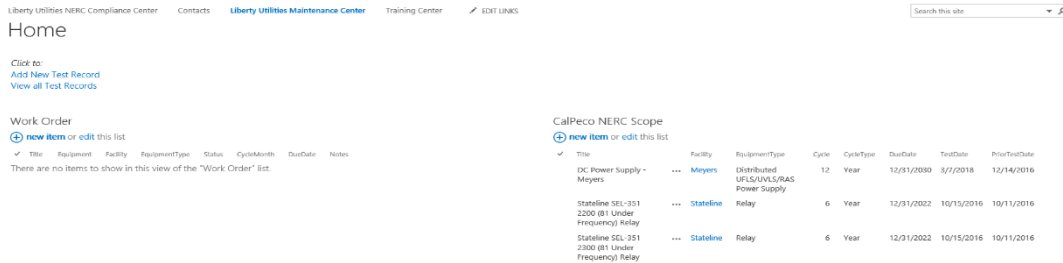
13.0 Appendix – Maintenance Log

13.1 Liberty Utilities’ Compliance SharePoint Instructions

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

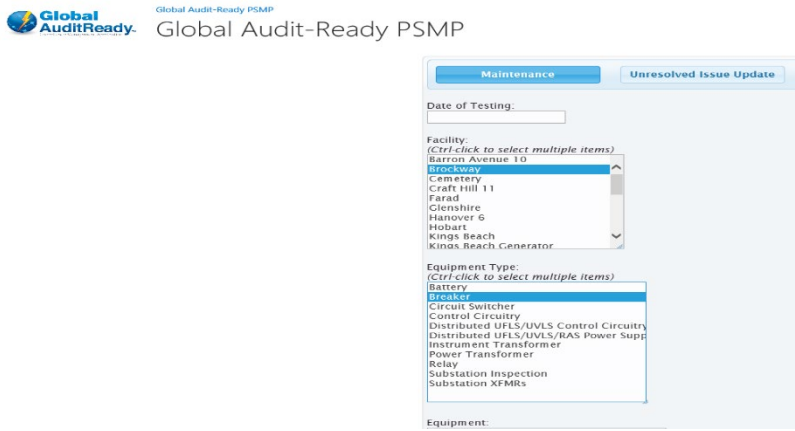


Then select [Liberty Utilities Maintenance Center](#) at the top tab.



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.