



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

July 1, 2019

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

**Liberty Utilities (CalPeco Electric) LLC (U 933-E)
2018 Substation Inspection Program Summary**

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 2018 calendar year.

Inspection Type	Completed in 2018	Past Due in 2018
GO 174 Substation Inspections	13	33

All past due 2018 inspections were brought up to date in Q1 2019, except the Hobart and Stampede Substations which were inspected in Q2 2019.

As stated in the Substation Inspection Program (Attachment A), Hobart and Stampede Substations will be inspected annually in quarter two or three as weather permits.

A minor update to the Substation Inspection Program document was made on June 28, 2019 to reflect modifications to SharePoint site for maintaining documents.

Please do not hesitate to contact me at Dan.Marsh@libertyutilities.com with any questions regarding this Substation Inspections Program Summary.

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

Attachment A

Liberty Utilities (CalPeco Electric) LLC
Substation Inspection Program

		933 Eloise Avenue South Lake Tahoe, California 96150 530-541-1949		
GENERAL PROCEDURE		Proc. #:	8800-150-200-0001	
Description:	Substation Inspection Program	Revision #:	2.1	Page: 1 of 10

Table of Contents

- 1.0 Purpose 2
- 2.0 Scope/Applicability 2
- 3.0 Definitions 3
- 4.0 References 3
- 5.0 Responsibilities 3
- 6.0 Procedures - Substation Inspections 4
 - 6.1 Oil Breakers 4
 - 6.2 Vacuum Breakers 5
 - 6.3 Gas/Air Breakers 5
 - 6.4 Load Tap Changer (LTC) 5
 - 6.5 Transformers 6
 - 6.6 Regulators 6
 - 6.7 Reclosers 6
 - 6.8 Oil Reclosers 7
 - 6.9 Substation General Inspections 7
- 7.0 Training Requirements 8
- 8.0 Personal Protective Equipment (PPE) 8
- 9.0 Documentation & Recordkeeping 8
- 10.0 Related Documents and Forms 8
- 11.0 Appendix, Tables, Illustrations 8
 - 11.1 Liberty Utilities Compliance SharePoint Instructions 8
- 12.0 Revision History 9

		933 Eloise Avenue South Lake Tahoe, California 96150 530-541-1949		
GENERAL PROCEDURE		Proc. #:	8800-150-200-0001	
Description:	Substation Inspection Program	Revision #:	2.1	Page: 2 of 10

1.0 Purpose

This procedure documents the California Pacific Electric Company’s (CalPECo’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.

2.0 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 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 CalPECo Compliance SharePoint website. The link is shown below.

<https://libertyenergy.sharepoint.com/Maintenance%20Log> 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.

		933 Eloise Avenue South Lake Tahoe, California 96150 530-541-1949		
GENERAL PROCEDURE		Proc. #:	8800-150-200-0001	
Description:	Substation Inspection Program	Revision #:	2.1	Page: 3 of 10

3.0 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.

4.0 References

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

5.0 Responsibilities

Person	Responsibility
Business Manager	<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.
Supervisor, Substation Operations (NV Energy)	<ul style="list-style-type: none"> Schedule substation inspections using the Cascade system to ensure requirements specified in the subsections below are maintained. Oversee or perform all maintenance inspections in accordance with the schedule as described in Sections 6.0 through 6.9. Review inspection results to ensure discrepancies and degradation are addressed in a timely manner.

		933 Eloise Avenue South Lake Tahoe, California 96150 530-541-1949		
GENERAL PROCEDURE		Proc. #:	8800-150-200-0001	
Description:	Substation Inspection Program	Revision #:	2.1	Page: 4 of 10

	<ul style="list-style-type: none"> • Provide inspection data and records to the Business Manager.
Operator/Technician	<ul style="list-style-type: none"> • Report to the Supervisor any observations of equipment degradation during substation visits. • Perform inspections described in Subsections 6.1 through 6.9 below. • Record results in the Cascade system 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 CalPECo Compliance SharePoint website. • Enter inspection data in the website as specified in Section 11.0 below. • Assist Business Manager in preparing annual filing to the CPUC by July 1st.

6.0 Procedures - 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 2.0.

Substation Patrol Inspections are to be performed quarterly based on NV Energy's many years of past experience with substation equipment. 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 CalPECo Compliance SharePoint website in the Substation Inspection Form Document Library. The following inspections are to be performed and the conditions recorded for each type of equipment as specified below:

6.1 Oil Breakers

- 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 logged?
- Non-fault operations to subtract logged?



933 Eloise Avenue
 South Lake Tahoe, California 96150
 530-541-1949

GENERAL PROCEDURE

Proc. #: **8800-150-200-0001**

Description: **Substation Inspection Program**

Revision #: 2.1 Page: 5 of 10

- Actual operations since last read are logged?
- Compressor hours/motor starts are logged?

6.2 Vacuum Breakers

- 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 logged?
- Non-fault operations to subtract logged?
- Faults since last read are logged?

6.3 Gas/Air Breakers

- 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 logged?
- Non-fault operations to subtract are logged?
- Faults since last read are logged?

6.4 Load Tap Changer (LTC)

- 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?



GENERAL PROCEDURE

Proc. #:

8800-150-200-0001

Description:

Substation Inspection Program

Revision #:

2.1

Page: 6 of 10

- LTC counter is logged?
- LTC position max is logged?
- LTC position min is logged?
- LTC oil level is okay?
- Nitrogen tank pressure is okay?

6.5 Transformers

- 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?

6.6 Regulators

- 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?

6.7 Vacuum Reclosers

- Porcelain condition is good?
- High voltage and ground connections are okay?
- Recloser status indication is good?
- Indicator lights are good?



GENERAL PROCEDURE

Proc. #:

8800-150-200-0001

Description:

Substation Inspection Program

Revision #:

2.1

Page: 7 of 10

- Relay targets logged and reset?
- Mechanism is okay?
- Counter operations 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?

6.8 Oil Reclosers

- 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 logged and reset?
- Cabinet is good?
- Auto setting is set?
- Ground trip normal is set?
- Misc. switches are good?
- Counter operations logged?
- Non-fault operations to subtract are logged?
- Actual operations since last read are logged?

6.9 Substation General Inspections

- Insulator condition is good?
- All airbreak switches are okay?
- All ATS systems operational?
- Station/control house lights are good?
- Air conditioners/heaters 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?



933 Eloise Avenue
South Lake Tahoe, California 96150
530-541-1949

GENERAL PROCEDURE

Proc. #:

8800-150-200-0001

Description:

Substation Inspection Program

Revision #:

2.1

Page: 8 of 10

- 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?

7.0 Training Requirements

Inspections will be performed by persons who, by reason of training, experience and instruction, are qualified to perform the task. Currently NV Energy performs the Patrol Inspections for CalPECO under contract. The contract specifies that the inspectors have a minimum of two years' experience as electricians. NV Energy inspectors have received on the job training by NV Energy and have been approved to perform these inspections by the NV Energy Management Team

8.0 Personal Protective Equipment (PPE)

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

9.0 Documentation & Recordkeeping

Electronic or hard copy records of completed inspections will be retained for not less than five (5) years in CalPECO's Compliance SharePoint website. The procedure for entering inspection data in the website is specified in Section 11.0 below.

10.0 Related Documents and Forms

- NV Energy Patrol Inspection Work Sheets

11.0 Appendix, Tables, Illustrations

11.1 Liberty Utilities Compliance SharePoint Instructions

- 1) Log in to <http://LibertyEnergy.SharePoint.com> using the appropriate credentials.
- 2) Select Liberty Utilities Maintenance Center on the top tab.
- 3) Click on Add New Test Record
- 4) Select the Facility(ies) included in the inspection report.
- 5) Select Equipment Type: Substation Inspection
- 6) Upload document



933 Eloise Avenue
 South Lake Tahoe, California 96150
 530-541-1949

GENERAL PROCEDURE

Proc. #: **8800-150-200-0001**

Description: **Substation Inspection Program**

Revision #: 2.1 Page: 9 of 10

12.0 Revision History

Date	Rev #	Description	Sponsor
7/25/2013	1.0	Original	MJ Cooper
6/17/2014	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
6/28/2019	2.1	Updates to reflect modifications to SharePoint site for maintaining documents.	MJ Cooper

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



Liberty Utilities
WATER | GAS | ELECTRIC

933 Eloise Avenue
South Lake Tahoe, California 96150
530-541-1949

GENERAL PROCEDURE

Proc. #: **8800-150-200-0001**

Description: **Substation Inspection Program**

Revision #: 2.1 Page: 10 of 10

X

Blaine Ladd
Regional Engineer