



**CITY OF VERNON**  
**VERNON PUBLIC UTILITIES**

**GENERAL ORDER 174**

**Revision Date: 2/25/2019**

**Revision 8**

# General Order 174 – Rules for Electric Utility Substations

## 1.0 Purpose and Background

California Public Utilities Commission (CPUC) General Order 174 (G.O. 174) sets forth requirements for electric substation facilities regarding inspections in order to ensure high-quality electrical service and safety to workers and the public.

City of Vernon is an industrial city primarily composed of businesses, warehouses, factories, and plants. The city, which is about five square miles, has about 100 residents and 1900 businesses.

## 2.0 Applicability

This program shall govern the inspection of substation facilities located within City of Vernon Public Utilities' (VPU) as defined in section 4.3.

## 3.0 Good Utility Practice

Substations shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service. Design, construction, and maintenance should be performed in accordance with accepted industry practices for the given local conditions known at the time by those responsible.

## 4.0 Definitions

For the purpose of this General Order,

**4.1 "Discrepancy"** shall be defined as a noteworthy anomaly, material, or structural deficiency

**4.2 "Inspection"** shall be defined as a basic evaluation generally performed using visual and auditory senses, but which could be conducted by other means

**4.3 "Substation"** shall be defined as 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 its characteristics

**4.3.1 "Customer Substation"** shall be defined as 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

**4.4 "Substation Operator"** shall be defined as the VPU personnel who, by reason of training, experience, and instruction, are responsible and qualified for inspecting Substations

## **5.0 Facility Inspection Program**

### **5.1 Facilities Subject to Substation Inspection Program**

Facilities located within a VPU Substation, including, but not limited to:

- Batteries
- Buses
- Support Structures
- Capacitor Banks
- Circuit Breakers
- Fire Detection and Suppression System (Where applicable)
- Grounding System
- Insulators/Bushing/Arrestors
- Perimeter Fences and Gates
- Transformers
- Reactors
- Voltage Regulators

### **5.2 Inspection Activities**

#### **5.2.1 Scheduled Inspections**

**5.2.1.1** Each VPU Substation shall be inspected not less than Two (2) times annually.

**5.2.1.2** The assigned Substation Lead shall inspect the Substation for Discrepancies. The Substation Lead shall report any identified discrepancies to the appropriate supervisor. Assigned VPU personnel shall prioritize identified discrepancies and shall schedule corrective actions based on this prioritization.

- 5.2.1.3** The Substation Lead performing the inspection shall record the information regarding the inspection on the appropriate recording form. Such information shall include: (1) Substation Lead identification information  
(2) Substation name or location  
(3) Date of inspection  
(4) Any discrepancies identified  
(5) Relevant action taken.

## **5.2.2 Unscheduled Inspections**

**5.2.2.1** VPU personnel may access a Substation for purposes other than a scheduled inspection, including, but not limited to, assessing substation facilities following a storm, fire, earthquake, or system event. During such an unscheduled inspection, VPU personnel shall perform an inspection of the Substation Facilities that is consistent with the personnel's experience and reasonable under the given circumstances.

**5.2.2.2** If VPU personnel identify a discrepancy during an unscheduled inspection, personnel shall report any identified discrepancies to the appropriate supervisor. Assigned VPU personnel shall prioritize identified discrepancies and shall schedule corrective actions based on this prioritization.

**5.2.2.3** The VPU personnel performing the unscheduled inspection shall record the information regarding the inspection on the appropriate recording form. Such information shall include:

- (1) VPU personnel identification information
- (2) Substation name or location
- (3) Date of inspection
- (4) Any discrepancies identified
- (5) Relevant action taken.

## **5.2.3 Electronic Monitoring System**

**5.2.3.1** Substation facilities may be monitored by electronic means (SCADA). Such electronic monitoring may notify VPU personnel of a potential Substation Discrepancy. VPU personnel shall respond to an electronic notification in an appropriate manner based upon reasonable judgment in

light of all facts known and accepted industry utility practices.

**5.2.3.2** If VPU personnel perform a Substation Inspection in response to a notification from an electronic monitoring system, personnel shall report any identified discrepancies to the appropriate supervisor. Assigned VPU personnel shall prioritize identified discrepancies and shall schedule corrective actions based on this prioritization.

**5.2.3.3** The VPU personnel performing the Inspection shall, in response to a notification from an electronic monitoring system, record the information regarding the inspection on the appropriate recording form. Such information shall include:

- (1) VPU personnel identification information
- (2) Substation name or location
- (3) Date of inspection
- (4) Any discrepancies identified
- (5) Relevant action taken.

### **5.3 Record Keeping**

VPU shall maintain all records generated for five (5) years.

### **5.4 Reporting**

By July 1<sup>ST</sup>, VPU shall make available an annual report for the previous year upon request.

### **5.5 Audit**

VPU personnel shall cooperate with audits performed by the Safety and Enforcement Division of the California Public Utilities Commission.

See Table 1 for Inspection Rating System;  
See Appendix A for inspection checklists.

# **INSPECTION RATING SYSTEM**

**Table 1**

<b>Condition Rating</b>	<b>Description of Action Response Time</b>	<b>Period of Action</b>
1	Requires immediate corrective actions	Within 90 days
2	Requires timely corrective action to mitigate existing condition	Within 1 year
3	Requires corrective action to eliminate or mitigate existing condition	Within 3 years
4	Condition of equipment contributes to safe, reliable operation	Next inspection interval

*Table 1- Inspection Rating System*