

**CALIFORNIA PUBLIC UTILITIES COMMISSION**  
**Safety and Enforcement Division**  
**Wildfire Safety and Enforcement Branch**

**Incident Investigation Report**

**Report Date:** March 6, 2024

**Incident Number:** E20220819-01 (Ridge Fire)

**Regulated Utility Involved:** Southern California Edison (SCE)

**Date and Time of the Incident:** August 19, 2022, approximately at 1515 hours

**Location of Incident:** Intersection of San Gabriel Canyon Road (State Highway 39) and Old San Gabriel Canyon Road, Azusa, Los Angeles County, CA

**Fatality/Injury:** None/None

**Property Damage:** \$26,197.41 for SCE equipment

**Regulated Utility Facilities Involved:** Jarvis 12kV Distribution Circuit

**Summary**

The Ridge Fire began at approximately 1519 hours on August 19, 2022, at the ridge located just south of the intersection of San Gabriel Canyon Road (State Highway 39) and Old San Gabriel Canyon Road, Azusa, Los Angeles County. On August 19, 2022, SCE reported this wildfire incident to the California Public Utilities Commission (CPUC) under the significant public attention criteria. The Ridge Fire burned approximately six acres and was fully contained on the same day. The Los Angeles County Fire Department (LACoFD) was the lead agency in the investigation of the fire. LACoFD’s investigation report identified the Ridge Fire’s specific area of origin but did not determine its definitive cause.

Based on the Safety Enforcement Division’s (SED) investigation of the incident, SED found that SCE violated a requirement in General Order (GO) 95 Rules for Overhead Electric Line Construction. The violation identified is listed below.

**A. Rules and Requirements Violated**

	Rule	Violation
1.	GO 95, Rule 31.1	SCE failed to follow its own internal procedures for the validation of accurate asset information.

**General Order 95 Rule 31.1 – Design, Construction and Maintenance** states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment.

**B. Witnesses**

	Name	Title
1.	Chris Lee	CPUC Lead Investigator
2.	James Crawford	LACoFD Lead Investigator
3.	Lynette Rodriguez	SCE Claims Advisor
4.	[REDACTED]	SCE District Manager

**C. Evidence**

	Source	Title
1.	SCE	Initial Incident Report, 08/19/2022
2.	SCE	20-Day Report, 09/19/2022
3.	LACoFD	Los Angeles County Fire Department Investigation Report, 10/17/2022
4.	CPUC	Data Request SED-01 (DR-1), 10/25/2022
5.	SCE	Data Request Responses to DR-1, 12/07/2022 (Tranche 1)
6.	SCE	Data Request Responses to DR-1, 12/19/2022 (Tranche 2)
7.	CPUC	Data Request SED-02 (DR-2), 02/06/2023
8.	SCE	Data Request Responses to DR-2, 04/06/2023
9.	CPUC	Data Request SED-03 (DR-3), 05/30/2023
10.	SCE	Data Request Responses to DR-3, 06/11/2023
11.	CPUC	Clarification Questions for DR-1 Responses, 6/23/2023
12.	SCE	Responses to the Clarification Questions, 7/3/2023
13.	CPUC	Clarification Questions for DR-1 and DR-2 Responses, 7/17/2023
14.	SCE	Responses to the Clarification Questions, 7/26/2023
15.	CPUC	Data Request SED-04 (DR-4), 08/24/2023
16.	SCE	Data Request Responses to DR-4, 09/01/2023
17.	CPUC	Data Request SED-05 (DR-5), 09/26/2023
18.	SCE	Data Request Responses to DR-5, 10/03/2023
19.	CPUC	Data Request SED-06 (DR-6), 11/16/2023
20.	SCE	Data Request Responses to DR-6, 12/01/2023
21.	CPUC	Clarification Questions for DR-6 Responses, 12/15/2023
22.	SCE	Responses to the Clarification Questions, 12/22/2023

**Background**

The Ridge Fire occurred on August 19, 2022, at 1519 hours just south of the intersection of San Gabriel Canyon Road (State Highway 39) and Old San Gabriel Canyon Road in Azusa, CA (the Incident Location). The incident originated near Pole 4160275E (the Incident Pole) on the Jarvis

12kV circuit. This area is in a Tier 2 High Fire Threat District (HFTD). Figure 1 shows a satellite view of the incident area. According to the LACoFD investigation report, the Ridge Fire burned six acres of brush hillside. The Ridge Fire did not impact any structures and was contained and cleared by the LACoFD investigators by 1700 hours on August 19, 2022. A total of 95 SCE customers sustained a power outage starting August 19, 2022, at 1510 hours.<sup>1, 2</sup> Power was restored by August 20, 2022, at 1400 hours.<sup>3</sup>



**Figure 1.** Map of the incident area.

<sup>1</sup> SCE-SEDRIDGE00000589.pdf (Bates SCE-SEDRIDGE00000589).

<sup>2</sup> SCE-SEDRIDGE0000052\_CONFIDENTIAL DURING PENDENCY OF INVESTIGATION.xlsx (Bates SCE-SEDRIDGE0000052).

<sup>3</sup> SCE-SEDRIDGE0000052\_CONFIDENTIAL DURING PENDENCY OF INVESTIGATION.xlsx (Bates SCE-SEDRIDGE0000052).





**Figure 2.** A close-up view of the burned area from north of San Gabriel Canyon Road.

## **Fire Authority Report**

The LACoFD was the fire authority that responded to the Ridge Fire. The fire was reported to have started on August 19, 2022, at 1519 hours.<sup>4</sup> The LACoFD investigators arrived at the scene at 1620 hours<sup>5</sup> and observed a fire at the brush hillside in Azusa Canyon. Fire crews stopped the forward expansion of the fire and extinguished hot spots. Hand crews continued to put perimeter lines all the way around the fire. On August 19, 2022, at 1700 hours, after the fire had been contained, LACoFD investigators cleared the scene.<sup>6</sup> The Ridge Fire was contained to six acres.<sup>7</sup>

The LACoFD investigators identified the area of origin as a plateau area stretching approximately 50 by 300 feet. Within the area of origin, there was one power pole in service.

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<sup>4</sup> Los Angeles County Fire Department Investigation Report, 10/17/2022, Case Number 22-197 (LACoFD Report), Incident Initiation Report, page 1 of 2.

<sup>5</sup> LACoFD Report, Case Initiation Report, page 1 of 3.

<sup>6</sup> LACoFD Report, Case Initiation Report, page 1 of 3.

<sup>7</sup> LACoFD Report, Incident Initiation Report, page 2 of 2.



(See Figure 3.) A closer examination led investigators to the specific area of origin, approximately four to five feet northwest of the power pole.<sup>8</sup>

The LACoFD report determined where the specific area of origin was located but did not determine a definitive cause of the fire. The lead investigator was not able to rule out human involvement or the involvement of electrical equipment from the pole or power lines.<sup>9</sup> The LACoFD filed its investigation report on October 19, 2022.



**Figure 3.** The plateau area was identified by the LACoFD as the area of origin. The specific area of origin was determined to be four to five feet northwest of the pole in the area, Pole 4160275E.

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<sup>8</sup> LACoFD Report, Narrative Report, page 2 of 3.

<sup>9</sup> LACoFD Report, Narrative Report, page 2 of 3.

## **SED Review and Analysis**

### **D. Review of Event Timeline**

SED reviewed the timeline of events reported by SCE.<sup>10, 11</sup>

#### **Incident Timeline**

On August 19, 2022, at 1510 hours, the relay for the remote auto recloser (RAR) 0990<sup>12</sup> indicated that the recloser opened. At 1512 hours, SCE received alarms from remote fault indicator (RFI) 02401 for phases “A” and “B.” Fault indicators, installed on distribution system lines to detect fault conditions, are monitoring devices used by troublemen to locate the cause of fault conditions.<sup>13</sup> According to SCE, at 1515 hours<sup>14</sup>, the LACoFD reported to SCE that the Ridge Fire was burning near the area of San Gabriel Canyon Road and Old San Gabriel Canyon Road, and had consumed approximately six acres of medium to heavy brush. Around 1706 hours, an SCE troubleman reported that the relay indicated recloser RAR 0990 was found open. Around 1800 hours, the fire was extinguished and the scene was released by the LACoFD investigators. The SCE troubleman reported around 1929 hours that he found mylar balloons that had made contact with electrical equipment west of Pole 4160275E, located at the northern tip of the Ridge Fire burn area. In the report, the troubleman also noted regarding the conductors that, “Map says 1/0 ATW but is actually 336 wire. Crew will be out Saturday to make repairs and put in covered conductor.”<sup>15</sup> 336 wire is 336 ACSR (Aluminum Conductor Steel Reinforced) bare wire.<sup>16</sup> 1/0 ATW (Aluminum Tree Wire), on the other hand, is a covered conductor that is protected by layers of insulating material.<sup>17</sup> On August 20, 2022, SCE replaced the damaged insulators, the associated hardware, and the jumper wires. SCE also replaced one span of 336 bare conductors between Pole 4160275E and Pole 4366589E with insulated 1/0 ATW conductors on August 20, 2022.<sup>18</sup>

Approximately two hours after RAR 0990 tripped, the troubleman verified the recloser was open and checked the equipment. Shortly thereafter, the troubleman found the apparent cause of the fault. The troubleman found remnants of mylar balloons that appeared to have made contact with the electrical equipment near Pole 4160275E.

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<sup>10</sup> SCE-SEDRIDGE00000054.pdf (Bates SCE-SEDRIDGE00000054, SCE-SEDRIDGE00000055).

<sup>11</sup> SCE-SEDRIDGE00000001.pdf (Bates SCE-SEDRIDGE00000001, SCE-SEDRIDGE00000002).

<sup>12</sup> RAR 0990 was not set to reclose, as reclosers typically are, due to Standard Operating Bulletin No. 322 being in effect. This restriction was put into effect on May 12, 2022, based on fire seasonality: SCE-SEDRIDGE00000588.pdf (Bates SCE-SEDRIDGE00000588).

<sup>13</sup> SCE-SEDRIDGE00000505.pdf (Bates SCE-SEDRIDGE00000505).

<sup>14</sup> SCE-SEDRIDGE00000001.pdf (Bates SCE-SEDRIDGE00000002).

<sup>15</sup> SCE-SEDRIDGE00000054.pdf (Bates SCE-SEDRIDGE00000054).

<sup>16</sup> SCE-SEDRIDGE00000598.pdf (Bates SCE-SEDRIDGE00000598).

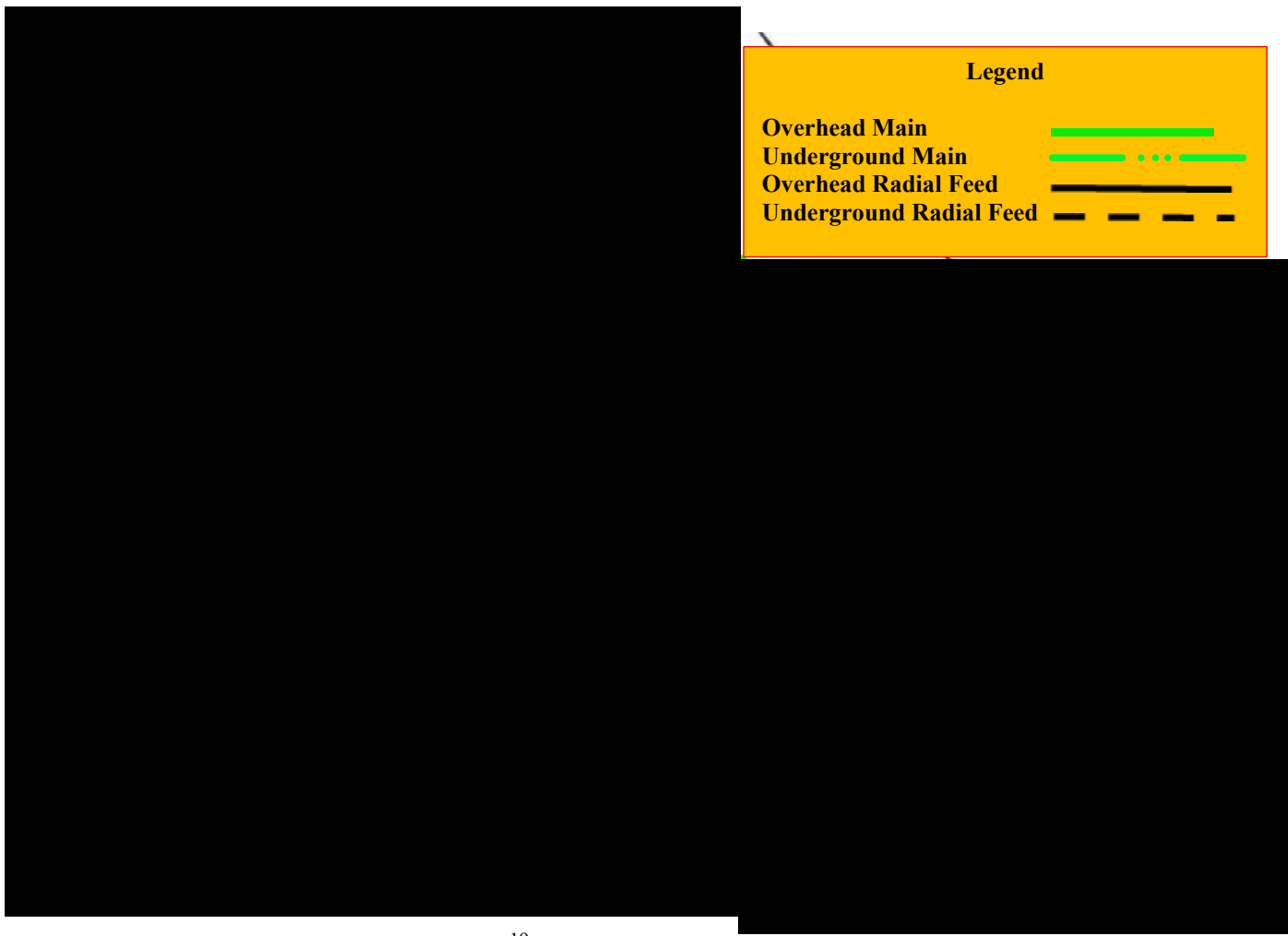
<sup>17</sup> SCE-SEDRIDGE00000596.pdf (Bates SCE-SEDRIDGE00000596).

<sup>18</sup> SCE-SEDRIDGE00000620.pdf (Bates SCE-SEDRIDGE00000620).





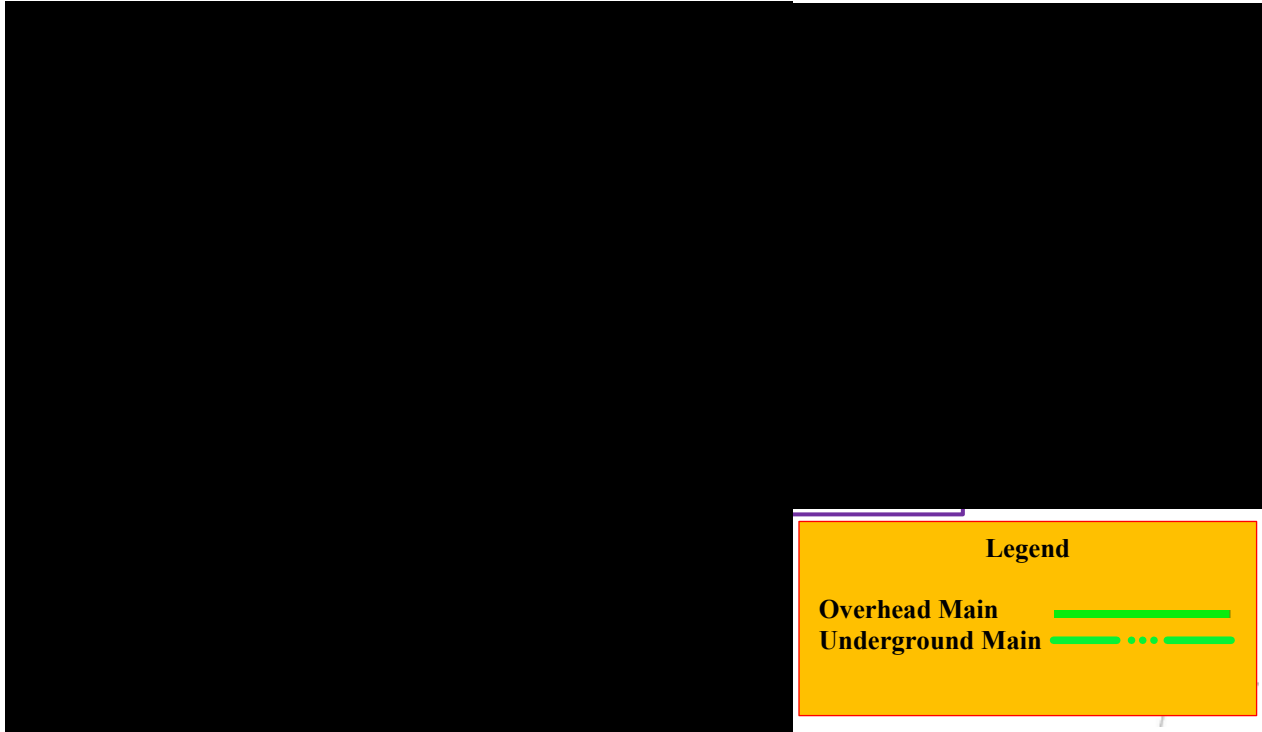
**Figure 4.** Map showing the location of RAR 0990 with respect to Pole 4160275E.



**Figure 5.** A portion of Circuit Map M3<sup>19</sup> shows Pole 4160275E and the surrounding area. The red arrow in the lower left corner indicates the direction of normal current flow. The green oval does not represent a power line. SCE drew it on the map to highlight the feed line damaged in the incident.

<sup>19</sup> SCE-SEDRIDGE00000513.pdf (Bates SCE-SEDRIDGE00000026, SCE-SEDRIDGE00000513).





**Figure 6.** A portion of Circuit Map N2<sup>20</sup> shows RAR 0990 and the surrounding area. Ranch Road in Figure 4 is labeled as Azusa and San Gabriel Canyon Road on this map. The red arrows indicate the direction of normal current flow. The green circle does not represent a power line. SCE drew it on the map to highlight equipment.

## **E. SED Field Observations**

SED conducted a single site visit to the Incident Location on August 26, 2022.

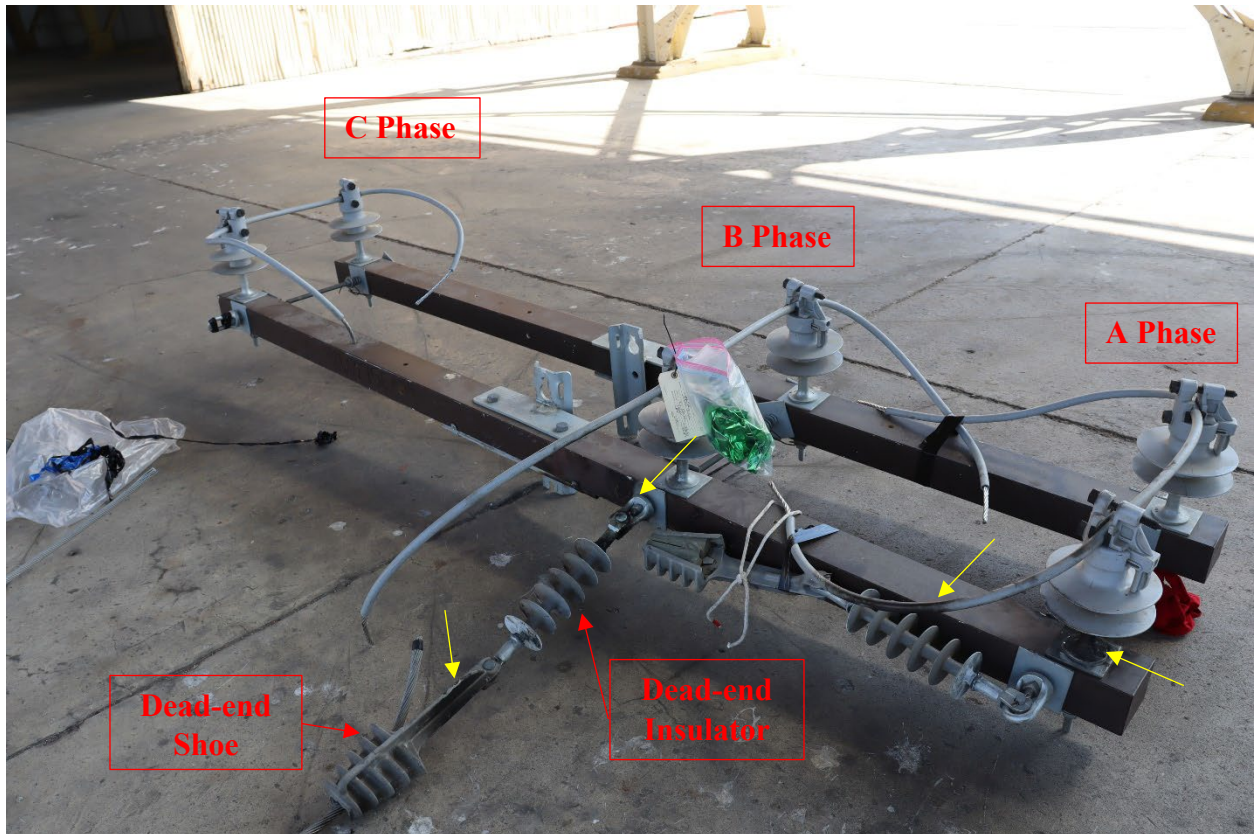
### **Site Visit at Incident Location**

On Friday, August 26, 2022, at 0850 hours, SED met with the SCE Claims Advisor and SCE District Manager who responded to the Ridge Fire Incident at the intersection of San Gabriel Canyon Road (State Highway 39) and Old San Gabriel Canyon Road, Azusa, CA to observe the Incident Location. SED observed the burned area on the eastern side of the ridge. Pole 4160275E was located on the northern tip of the burned area, just south of San Gabriel Canyon Road. No other electrical equipment was in the burned area, other than the conductors on the pole. The District Manager said the cross arm and all the associated hardware were replaced after the incident. The pole and the conductors were not damaged, but SCE replaced the span of bare conductors between the pole and the adjacent pole across San Gabriel Canyon Road with covered conductors. The District Manager explained that on August 19, 2022, he responded to the report of the incident. When the Incident Location was deemed safe, SCE personnel climbed to the top of Pole 4160275E using a lift. At the cross arm, he saw flash burn marks on parts of a dead-end insulator and shoe assembly. He also found a balloon ribbon hanging from a dead-end

<sup>20</sup> SCE-RIDGE00000514.pdf (Bates SCE-SEDRIDGE00000027, SCE-RIDGE00000514).

shoe and recovered remnants of two mylar balloons. The District Manager said no conductors were damaged and no electrical equipment or conductors came down because of the incident.

During the site visit, SED also visited an SCE facility in Alhambra, California, to view the evidence SCE collected. SCE brought out the composite cross arm that had been removed from Pole 4160275E, with the jumpers, dead-end insulators, dead-end shoes still attached, and remnants of mylar balloons. See Figure 7.



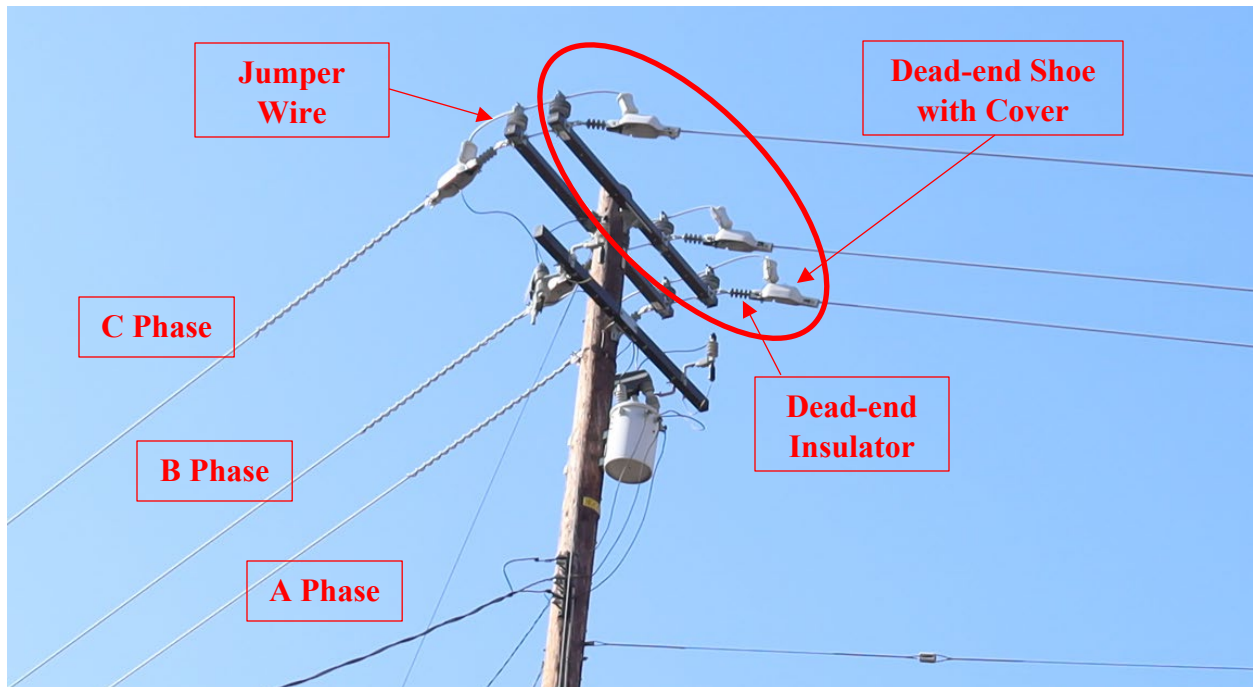
**Figure 7.** This figure shows the cross arm removed from Pole 4160275E with the associated insulator hardware and jumper wires displaying burn marks, as indicated by yellow arrows in the photo. Remnants of mylar balloons can be seen on the ground and in the Ziploc bag attached to the “B” phase jumper wire.



**Figure 8.** Mylar balloon marks on the B phase dead-end insulator/shoe assembly.

The burn marks on the insulator hardware on the “A” and “B” phases and the “A” phase jumper wire appear to be an indication of an arc flash between the two phases. Mylar balloons have the capability of conducting electricity due to their metallic coating.





**Figure 9.** Figure 9 shows the various hardware and jumper wires at Pole 4160275E after the repair. The jumper wires are connected to the conductors at the dead-end shoes. The red ellipse shows the location of the section damaged in the incident.

## F. SED Document Review and Investigation

This section will discuss SED’s review of utility standards, procedures, and inspection documents which were obtained through SCE’s 20-Day Report and subsequent Data Requests (DR) sent to the utility by SED.

Prior to the start of the fire, no circuit within SCE’s service territory, including Jarvis, was forecasted to meet or exceed SCE’s Public Safety Power Shutoffs (PSPS) criteria.<sup>21</sup>

SCE stated that the fault event of August 19, 2022, was a phase-to-phase fault involving “A” and “B” phases,<sup>22</sup> which is consistent with SED’s observation of burn marks on the “A” and “B” phase equipment at Pole 4160275E during the site visit. The recorded fault current for “A” and “B” phases were 1380 amps and 1401 amps, respectively.<sup>23</sup> Just prior to the fault event, the recorded current for “A” and “B” phases were 263 amps and 170 amps, respectively.<sup>24</sup> RAR

<sup>21</sup> SCE-SEDRIDGE00000414.pdf (Bates SCE-SEDRIDGE00000414).

<sup>22</sup> SCE-SEDRIDGE00000171.pdf, page 2. (Bates SCE-SEDRIDGE00000171, SCE-SEDRIDGE00000172).

<sup>23</sup> SCE-SEDRIDGE00000171.pdf, page 1. (Bates SCE-SEDRIDGE00000171, SCE-SEDRIDGE00000172).

<sup>24</sup> SCE-SEDRIDGE00000077\_CONFIDENTIAL DURING PENDENCY OF INVESTIGATION.XLSX (Bates SCE-SEDRIDGE00000077).

0990 is the nearest protective device upstream of the incident location. RAR 0990 has two elements that can trip the recloser. One is the high current element. If the current reaches 1700 amps, the device opens up immediately. The other element is the phase time overcurrent setting at 340 amps. If the current reaches 340 amps and remains at that level for a specified length of time, the device then opens up. In this incident, RAR 0990 opened up due to the phase time overcurrent element.<sup>25</sup> Accordingly, the protective system for the Incident Location appears to have worked as designed.

During the investigation of the cause of the fault event of August 19, 2022, SCE found remnants of mylar balloons on Pole 4160275E that had made contact with the electrical equipment on the pole.

At the pole, the troubleman also noted the following regarding the conductors:

Map says 1/0 ATW but is actually 336 wire. Crew will be out Saturday to make repairs and put in covered conductor.<sup>26</sup>

At the time of the incident, the Circuit Map M3 showed that the conductors between Pole 4160275E and Pole 4366589E were 1/0 ATW, covered conductors<sup>27</sup>, as shown in Figure 5. However, contrary to that information, these conductors were 336 wires which are bare wires, not covered conductors<sup>28</sup>. This span had been erroneously labeled as 1/0 ATW on the map by a contractor who performed the installation of covered conductors on the circuit in the adjacent span as part of wildfire mitigation project. On June 7, 2022, the contractor submitted a Circuit Map Revision Request Form<sup>29</sup> to reflect the changes from the project. But the revision mistakenly included the span between Pole 4160275E and Pole 4366589E as having been part of the project when it was not.<sup>30</sup>

## **Violations**

SED reviewed and analyzed inspection and maintenance records and investigation reports related to this incident to determine compliance with Commission regulations. SED's investigation discovered one violation.

**General Order 95 Rule 31.1 – Design, Construction and Maintenance** states in part:

*For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice for the*

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<sup>25</sup> SCE-SEDRIDGE00000502.pdf (Bates SCE-SEDRIDGE00000502).

<sup>26</sup> SCE-SEDRIDGE00000054.pdf (Bates SCE-SEDRIDGE00000054, SCE-SEDRIDGE00000055).

<sup>27</sup> SCE-SEDRIDGE00000596.pdf (Bates SCE-SEDRIDGE00000596).

<sup>28</sup> SCE-SEDRIDGE00000598.pdf (Bates SCE-SEDRIDGE00000598).

<sup>29</sup> SCE-SEDRIDGE00000623.pdf (Bates SCE-SEDRIDGE00000623).

<sup>30</sup> SCE-SEDRIDGE00000630.pdf (Bates SCE-SEDRIDGE00000630).

*given local conditions known at the time by those responsible for the design, construction, or maintenance of communication or supply lines and equipment.*

GO 95 Rule 31.1 states that CPUC-regulated utilities must conduct construction of their facilities in accordance with accepted good practices. When contractors perform work on behalf of the utilities, it is an accepted good practice for the utilities to ensure that the work is done correctly. SCE approved its contractor's request for a map revision which included a span of conductors that was outside the scope of the wildfire mitigation project.<sup>31</sup> By failing to recognize the incorrect revision of the Circuit Map M3 by the contractor during the revision approval process, SCE did not follow accepted good practice in violation of General Order 95 Rule 31.1.

## **Conclusion**

SED's investigation found a GO 95 violation in SCE's construction program regarding the Ridge Fire incident. GO 95 Rule 31.1 mandates utilities to conduct construction in accordance with accepted good practices for the local given conditions. When projects are performed by contractors, it is an accepted good practice for the utilities to ensure that the work is done correctly. SCE failed to recognize the incorrect map revision submitted by its contractor. When approving the map revision request, SCE should have checked the revision against the scope of the project.

If SED becomes aware of additional information that could modify the findings in this report, the investigation may be re-opened. If so, SED may modify the report and take further action as appropriate.

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<sup>31</sup> Circuit Map M3 (Bates SCE-SEDRIDGE00000026, SCE-SEDRIDGE00000513) shows revision in the span between Pole 4160275E and Pole 4366589E, which was not part of the project. See SCE-SEDRIDGE00000623.pdf (Bates SCE-SEDRIDGE00000623), page 4 of 7 for the project description.