

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

Incident Investigation Report

Report Date: April 24, 2023

Incident Number: E2021111-01 (Middle Fire)

Utility: Southern California Edison Company (SCE)

Date and Time of the Incident: November 11, 2021, at 1325 hours

Location of the Incident: Near Black Jack Campground (33.374249, -118.413706)
North of Middle Ranch Road, Catalina Island
Los Angeles County, California

Fatality / Injury: None/None

Property Damage: \$0 Utility, \$0 Other. SCE stated there was no damage to their facilities or to other third parties.

Utility Facilities involved: Pebbly Beach Substation Interior 12 kV Distribution Circuit

Summary of Incident:

The Middle Fire began on November 11, 2021, at approximately 1325 hours, near Black Jack Campground, north of Middle Ranch Road on Catalina Island, Los Angeles County, California (Incident Location). The Incident Location is served by the Pebbly Beach Substation Interior 12 kilovolt (kV) overhead distribution circuit. On November 11, 2021, SCE became aware of the Middle Fire because of significant media coverage, SCE reported the fire pursuant to the California Public Utilities Commission's (Commission) reporting criteria. The Middle Fire burned approximately 18 acres and was fully contained on November 13, 2021. The Safety and Enforcement Division's (SED) investigation of the Middle Fire examined SCE's operation and maintenance records related to this incident and found no violations of the Commission's General Orders or Decisions.

Statement of Pertinent General Orders, Statutory Requirements, and/or Federal Requirements:

	<i>Requirement</i>	<i>Rule</i>	<i>Violation</i>
1	Decision 06-04-055	Resolution E-4184 Appendix B	No
2	General Order 165	Distribution Inspection	No
3	General Order 95	Rule 35	No
4	Public Resources Code	Section 4293	No

Witnesses and Investigators:

	<i>Name</i>	<i>Title</i>
1.	Desmond Lew	CPUC Investigator
2.	Eric Coolidge	SCE Senior Manager
3.	Jennifer Marie Diaz	SCE Advisor

Evidence:

	<i>Source</i>	<i>Description</i>
1.	SCE	Initial Incident Report, 11/11/21
2.	SCE	20-Day Incident Report, 12/10/21
3.	CPUC	Data Request No. 1, 02/04/22
4.	SCE	Data Request Response No. 1, 03/07/22
5.	CPUC	Data Request No. 2, 06/24/22
6.	SCE	Data Request Response No. 2, 07/25/22
7.	CPUC	Data Request No. 3, 09/28/22
8.	SCE	Data Request Response No. 3, 11/02/22
9.	CPUC	Data Request No. 4, 03/03/23
10.	SCE	Data Request Response No. 4, 03/24/23
11.	Los Angeles County	Fire Department Report
12.	Los Angeles County	Sheriff's Department Fire Report

Background:

On November 11, 2021, at approximately 1325 hours, the Los Angeles County Fire Department (LACFD) was notified of a vegetation fire near Black Jack Campground, north of Middle Ranch Road on Catalina Island. The Los Angeles County Sheriff's Department (LASD) received the 911 call about the Middle Fire on November 11, 2021, at approximately 1320 hours. On the same day, the LACFD notified SCE of the Middle Fire and reported to SCE that they believed the ignition of the Middle Fire was caused by two birds perching on conductors. SCE reported that three customers lost power during the fire: (1) Federal Aviation Administration, (2) US Coast Guard, and (3) Blackjack Well. Because of the Middle Fire's remote location, approximately 125 firefighters and support workers were helicoptered from the mainland to the island (approximately 24 miles) to assist with firefighting activities. In addition, firefighting vehicles had to travel 10 miles of difficult terrain and narrow roadways to reach the fire location.

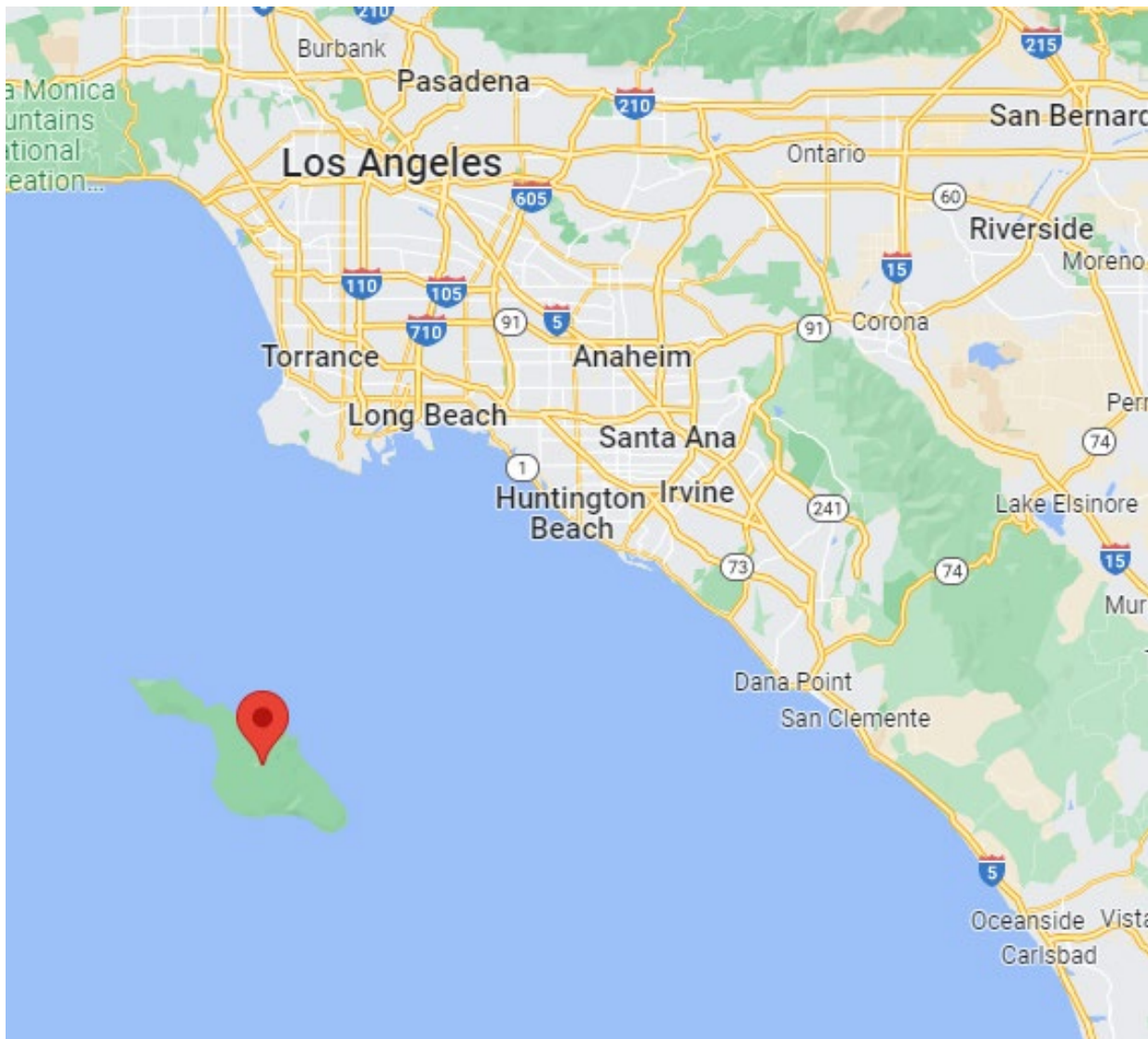


Figure 1: Vicinity Map of the Fire Location via Google Maps. Red pin designates fire location on Catalina Island.

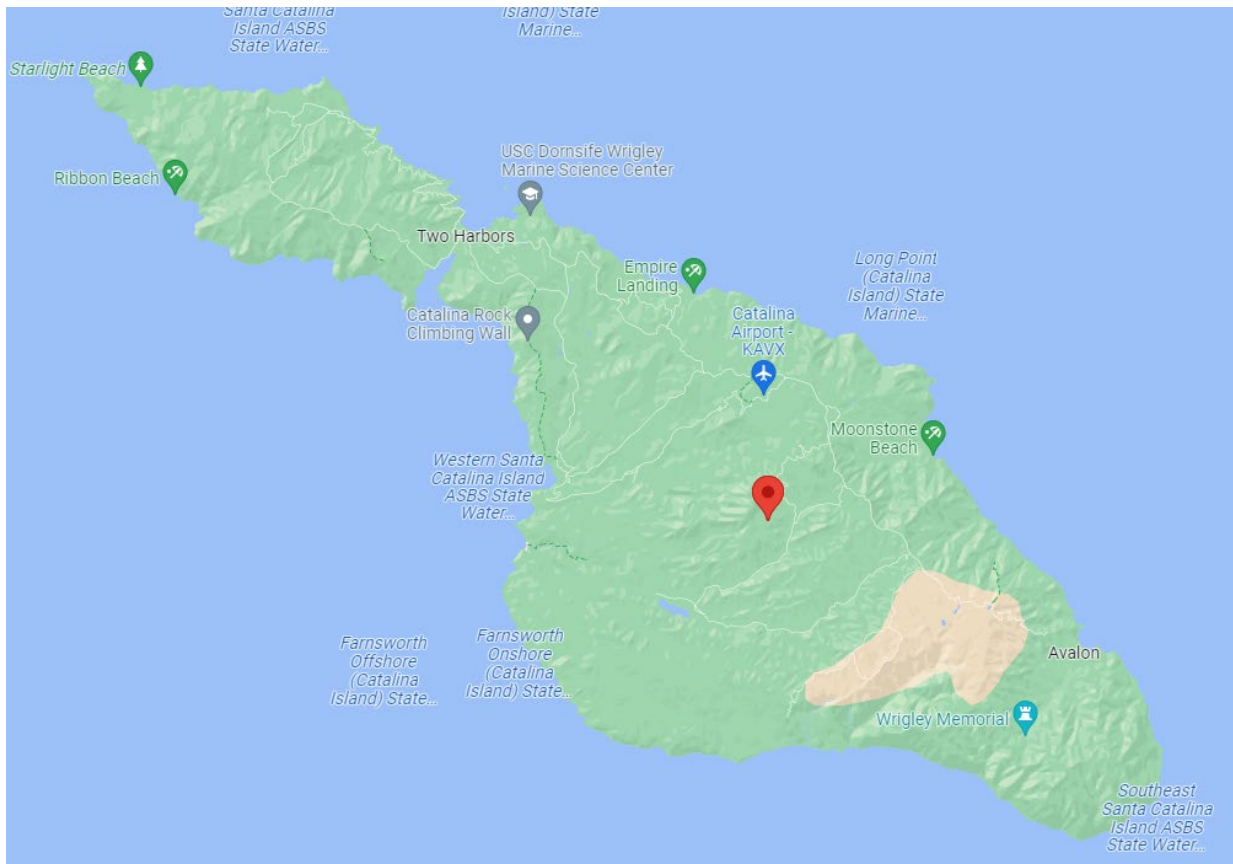


Figure 2: Proximity Map of the Fire Location via Google Maps. Red pin designates fire location.

The LACFD (the fire authority for this fire), coordinated mutual aid efforts from the City of Los Angeles Fire Department, the City of Avalon Fire Department, CAL FIRE, and the Los Angeles County Sheriff's Department. Because of the fire's remote location, initial firefighting efforts consisted of aircraft tankers dropping water. LACFD used a bulldozer to clear a large enough passage for the large fire vehicles to reach the fire. At approximately 1600 hours, the combined efforts of the air support and ground support stopped the forward progress of the fire.

SCE field personnel reported to the ignition site on the morning of November 12, 2021, and observed two burned birds, one on the conductor and one below the conductor on the ground. The conductor was supported by Pole No. X10282E and Pole No. X10703E. SCE observed no signs of damage or arcing on the overhead conductors; thus, SCE determined no repairs were needed on the overhead conductors. Two fuses operated at Branch Line Fuse No. 043653 located at Pole No. 1492675 from this incident and repairs consisted of replacing the two fuses. SCE restored power to the US Coast Guard and Blackjack Well at 1650 hours and to the Federal Aviation Administration at 1432 hours the next day (November 12, 2021). LACFD considered the Middle Fire fully contained on Saturday, November 13, 2021, at 2230 hours.¹

¹ Southern California Edison Company, "Data Request Response to DR-1", Response to Question 1. March 7, 2022.



Figure 3: Circuit Map and Protective Devices near Incident Location (Source: SCE).

SCE stated that the affected conductor was part of the Pebble Beach Substation Interior 12 kV overhead distribution.² This section of SCE’s Pebble Beach Substation Interior 12 kV overhead distribution circuit serves the area impacted by the fire. The Middle Fire did not cause any damage to the conductor or supporting structures. SCE stated there was no indication or evidence that conductors came in contact, but SCE installed line spacers as a preventative measure.³ SED noted that there was no circuit interruption experienced because of this incident.

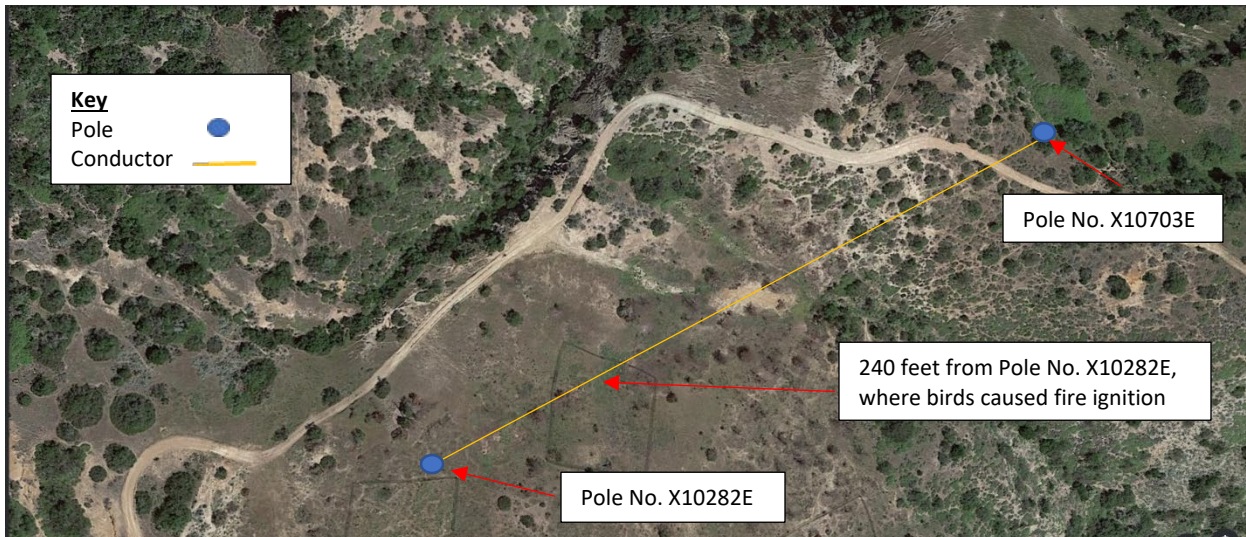


Figure 4: Incident Location between pole supports via Google Earth.

² Southern California Edison Company, “Data Request Response to DR-1”, Response to Question 3. March 7, 2022.

³ Southern California Edison Company. “CPUC 315 Letter Middle Fire” (20-Day Report for SCE Incident No: 211111-15019), Page 1, December 10, 2021.

In accordance with General Order (GO) 165, the spans related to this Incident Location were patrolled in August 2021 and no abnormal conditions were noted. Aerial images of pole supports were captured via helicopter in March 2020 and a detailed inspection was conducted in June 2020. No abnormal conditions were found.

Los Angeles County Fire Department Report:

SED requested and received the LACFD's Investigation Report (LACFD's Report) of the Middle Fire. LACFD's Report documents the events which took place as previously stated by SCE. The LACFD Report's conclusion states, "A common raven was found hanging in electrical transmission line above ignition area, another common raven found directly below on ground which caused the ignition of brush. This was 100 feet southeast off Sweetwater Utility Rd. Arcing wires was final determination of cause."⁴

Los Angeles County Sheriff's Department Report:

SED requested and received the Los Angeles County Sheriff's Department's Fire Report (LASD's Report) of the Middle Fire. LASD received the 911 call reporting the Middle Fire. LASD's Report provides a narrative of their support to the LACFD. The following firsthand observations about the cause of the fire were noted in the report: "I observed a bird hanging from a power line, above the burned area. The bird appeared to be dead...". It was later determined by LA County Fire Captain Davey; the cause of the fire was birds on the power lines."⁵

⁴ Los Angeles County Fire Department, Public Incident Report, Incident Number LAC213611.

⁵ Los Angeles County Sheriff's Department, Fire Report, File Number 921-00420-1870-445.



Figure 5: Pole No. X10282E with conductors in a vertical configuration, circled in red (Source: SCE).



Figure 6: Pole No. X10703E with conductors in a horizontal configuration, circled in red (Source: SCE).

SED’s Review and Analysis:

The Incident Location is approximately in the middle of Catalina Island. Catalina Island is a rocky island off the coast of California approximately 29 miles south of Long Beach. Most of the island is undeveloped, including the Incident Location. The entire island is a Tier 3 High Fire Threat District (HFTD) with much of the land having very little vegetation.

The conductor span between Pole No. X10282E and Pole No. X10703E is approximately 782 feet. The conductors on Pole No. X10282E are in a vertical configuration. The conductors on Pole No. X10403E are in a horizontal configuration. LiDAR data from May 14, 2020 show the closest dimension of radial clearance between any two conductors to be approximately 3.5 feet.⁶ The ignition location was

⁶ Southern California Edison Company, “Data Request Response to DR-2”, Response to Question 6. July 25, 2022.

approximately 240 feet from Pole No. X10282E measured in the direction towards Pole No. X10703E. Figure 7 shows a cross section of the clearance between conductors approximately 240 feet from Pole No. X10282E based on the LiDAR data from May 14, 2020.

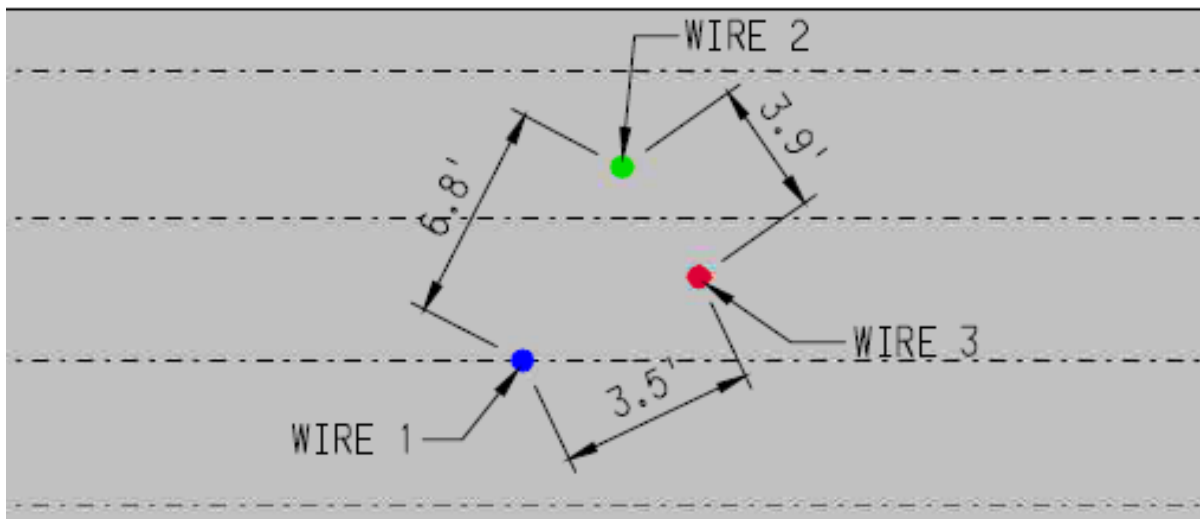


Figure 7: Conductors cross section approximately 240 feet from Pole No. X10282E (Source: SCE).

LACFD and LASD suspected two ravens were perched on two different conductors, and while simultaneously spreading their wings, potentially making contact, they were electrocuted by arcing between the two phases. The arcing caused the birds to catch fire, one fell to the ground and ignited vegetation, thus causing the fire. With the conductor cross section configuration, the birds could make wing contact by perching on any two adjacent conductors and spreading their wings.⁷

Hayfield, Middle Canyon, Santa Catalina Island Weather Station is located approximately three miles south of the Incident Location. The recorded weather conditions beginning at approximately three hours before and after the 1325 ignition time are shown in the table below:

⁷ <https://animalstime.com/raven-bird-facts/>, An adult raven is, on average, 21 inches to 26 inches long with a wingspan measuring up to 45 inches to 51 inches.

TIME [PST]	TEMPERATURE [FAHRENHEIT]	RELATIVE HUMIDITY [%]	WIND SPEED [MILES/HOUR]	WIND DIRECTION [DEGREES]	WIND GUST [MILES/HOUR]
1100	87	35	2	15	8
1200	89	33	2	356	8
1300	90	27	3	62	12
1400	89	30	3	268	11
1500	88	29	3	255	12
1600	85	33	2	243	7

Figure 8: Weather conditions three hours before and after ignition time recorded at Hayfield, Ca Weather Station via Google. Ignition time weather conditions in **bold**.

Based on the weather condition information contained in Figure 8, SED noted that the wind speed and wind gust was very low prior to the 1325 ignition time of the Middle Fire. This is consistent with the weather information in the LACFD report. Therefore, it is most probable that weather did not contribute to the cause of the fire.

SCE provided records of patrol inspections of the incident facilities which were completed on August 2019, August 2020, and August 2021, and detailed inspections on June 2020. SCE’s patrol inspections identified no abnormal conditions. SCE’s June 2020 detailed inspection identified no abnormal conditions.⁸

For the two poles on the incident span, Pole No. X10282E and Pole No. X10703E, SED requested previous Intrusive Test Records for these two poles and SCE provided 2005 and 2017 Intrusive Test Records for both Pole No. X10282E and Pole No. X10703E.⁹ SED reviewed the contents of the 2005 Intrusive Test Records and 2017 Intrusive Test Records for consistency with SCE’s Inspection and Treatment of Wood Poles and found the actions to be in conformance and in compliance with GO 165.

SCE provided records of the April 2021 Vegetation Management Inspection in the grid location containing the incident span.¹⁰ In addition, SCE provided October 2021 Pole Brushing Record of Pole No. X10282E and October 2021 Pole Brushing Record of Pole No. X10703E.¹¹ SCE’s records show corrective actions were taken, including tree removal or tree brush cutting, in accordance with SCE’s Distribution Inspection and Maintenance Program (DIMP).

⁸ Southern California Edison Company, “Data Request Response to DR-1”, Response to Question 11. March 7, 2022.

⁹ Southern California Edison Company, “Data Request Response to DR-1”, Response to Question 6. March 7, 2022.

¹⁰ Southern California Edison Company, “Data Request Response to DR-2”, Response to Question 10. July 25, 2022.

¹¹ Southern California Edison Company, “Data Request Response to DR-2”, Response to Question 10. July 25, 2022.

SED's Findings:

Based on the statements made by first responders, and the distances between conductors relative to the wingspan of a common raven, SED notes the LACFD's findings that the birds on the conductors were the cause of the ignition of the Middle Fire. SED finds that SCE maintained adequate clearances between the conductors at the Incident Location and the arcing between the two birds on the conductors does not constitute a violation of the Commission's General Orders.

SED reviewed and noted that the patrol inspection and detailed inspection records did not identify any equipment defects and/or abnormalities with the facilities that might have contributed to the incident. Furthermore, all inspection intervals were timely. GO 165 requires overhead patrol inspections to be conducted every two years in rural areas. However, this frequency is increased to once per year in Tier 3 High Fire Threat Districts. The detailed inspection of June 2020 and patrol inspections of August 2020 and August 2021 meet this interval criteria.¹²

In accordance with GO 95 (*Rules for Overhead Electric Line Construction*), SCE conducted annual vegetation patrols and completed identified vegetation work for all distribution facilities. SED noted that timely Vegetation Management Inspections in April 2021 and Pole Brushing in October 2021 show corrective action, including tree removal or tree brush cutting. For these reasons, SED finds that SCE's actions were in conformance and in compliance with the vegetation management requirements at the time of the incident.

Based on the evidence reviewed and examined, SED's investigation did not find SCE in violation of any General Order or Public Resources Code provisions. SCE reported the incident promptly after becoming aware that it met the reportable criteria of significant media coverage. SCE became aware that the incident was reportable on November 11, 2021 and reported it the same day as required by Resolution E-4184.

Conclusion:

Based on the evidence reviewed and examined in this investigation, SED did not find SCE in violation of General Order 95, General Order 165, or Public Resources Code Section 4293. Patrol and detailed inspections of the incident facilities were conducted per intervals required in GO 165. The patrol and detailed inspections did not identify any equipment defects or abnormalities with the facilities that might have attributed to the incident. Vegetation Management Inspections were conducted per interval required in GO 95 and did not identify trees or brush requiring further action.

¹² Twelve consecutive calendar months starting the first full calendar month after an inspection is performed, plus three full calendar months, not to exceed the end of the calendar year in which the next inspection is due.