

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

**Incident Investigation Report**

**Report Date:** March 29, 2023

**Incident Number:** E20210120-02 (Freedom Fire)

**Utility:** Pacific Gas and Electric Company (PG&E)

**Date and Time of the Incident:** January 19, 2021, at 0800 hours

**Location of the Incident:** 4607 Freedom Boulevard  
Aptos, California  
Santa Cruz County

**Fatality / Injury:** None/None

**Property Damage:** Utility - \$5,650.00 (Estimated), Other - None

**Utility Facilities involved:** Rob Roy 2104 12 kV Distribution Circuit

**Summary of Incident:**

The Freedom Fire began on January 19, 2021, at approximately 0800 hours, at 4607 Freedom Boulevard, between Daisy Lane and La Vida Drive in Aptos, Santa Cruz County, California (Incident Location). The Incident Location is served by the Rob Roy 2104 12 kilovolt (kV) overhead distribution circuit. On January 20, 2021, PG&E became aware of the Freedom Fire because of significant media coverage. On January 20, 2021, PG&E reported the fire pursuant to the California Public Utilities Commission's (Commission) reporting criteria. The Freedom Fire burned approximately 37 acres and was fully contained on January 22, 2021. The Safety and Enforcement Division's (SED) investigation examined PG&E'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 Order, 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 Lead Investigator
2.	Joan Weber	CPUC Investigator
3.	Raymond Cho	CPUC Investigator
4.	Meredith Allen	PG&E Senior Director
5.	Michael Barnum	PG&E Manager, Incident Investigations
6.	Richard Knoeber	PG&E Compliance and Risk Consultant
7.	Heidi Ramos	PG&E Compliance and Risk Consultant

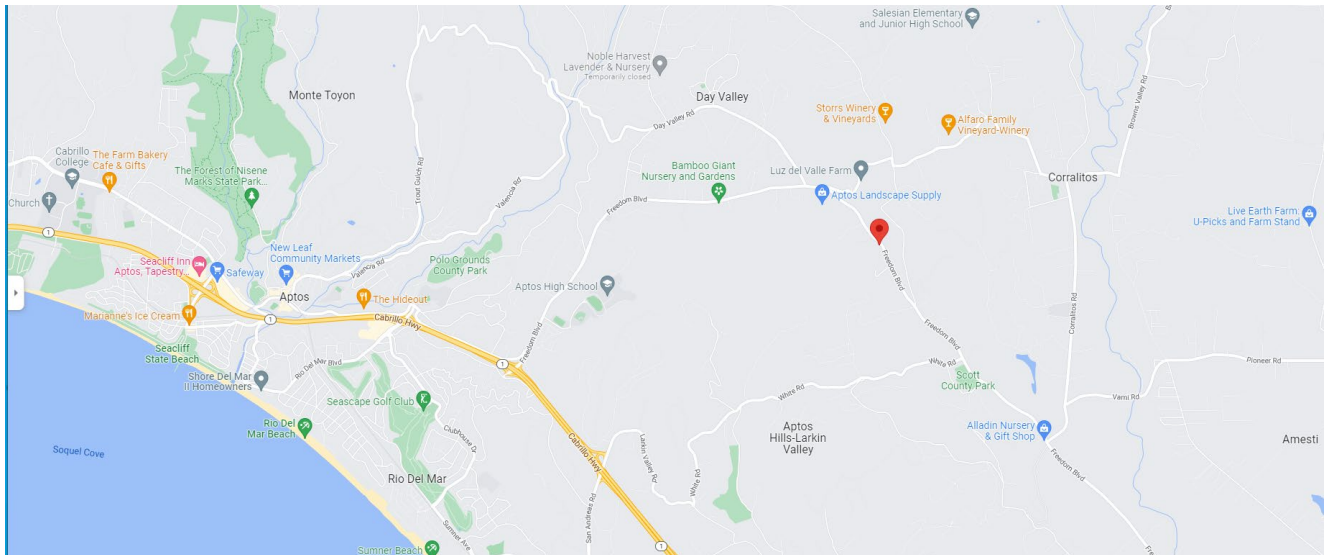
**Evidence:**

	<i>Source</i>	<i>Description</i>
1.	PG&E	Initial Incident Report, 01/20/21 (From Witness No. 4)
2.	PG&E	20-Day Incident Report, 02/18/21 (From Witness No. 5)
3.	CPUC	Data Request No. 1, 04/23/21
4.	PG&E	Data Request Response No. 1, 05/24/21 (From Witness No. 6)
5.	CPUC	Data Request No. 2, 10/05/21
6.	PG&E	Data Request Response No. 2, 01/28/21 (From Witness No. 6)
7.	CPUC	Data Request No. 3, 01/31/22
8.	PG&E	Data Request Response No. 3, 02/28/21 (From Witness No. 6)
9.	CPUC	Data Request No. 4, 04/14/22
10.	PG&E	Data Request Response No. 4, 05/12/22 (From Witness No. 7)
11.	CPUC	Data Request No. 5, 02/28/23
12.	PG&E	Data Request Response No.5, 03/24/23 (From Witness No. 6)
13.	CAL FIRE	CAL FIRE Investigation Report, 03/10/22

**Observations:**

On January 19, 2021, at 0915 hours, California Department of Forestry and Fire Protection (CAL FIRE) Dispatch notified a PG&E Dispatch and Scheduling Supervisor of a wildfire near 4607 Freedom Boulevard in Aptos. The Dispatch and Scheduling Supervisor sent a PG&E Utility Worker to the Incident Location as an emergency standby. The PG&E Utility Worker arrived near the vicinity of the Incident Location and observed smoke. He requested a PG&E Troublemaker for additional support. The Utility Worker was unable to access the Incident

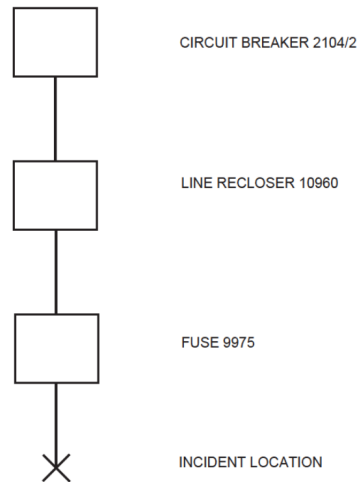
Location and was advised by CAL FIRE to standby at the intersection of Willow Heights and Freedom Boulevard, a distance of approximately one-half of a mile south of the Incident Location.



**Figure 1:** The origin of the fire via Google Maps.

At 1200 hours, the PG&E Troublemaker arrived at the Cal FIRE Incident Command Post at Larkin Valley Road where he met with a PG&E Public Safety Specialist and a CAL FIRE Battalion Chief. The CAL FIRE Battalion Chief informed the PG&E Troublemaker of the Freedom Fire and requested PG&E to send additional support to the Incident Location to clear debris from the roadway to establish safe ingress to the Incident Location.

At 1515 hours, the PG&E Troublemaker gained access to the Incident Location and observed a fallen tree (Incident Tree) which took down an overhead conductor between two PG&E poles. Upstream Fuse 9975 was open, causing three PG&E customers to lose power. The PG&E Troublemaker observed burned vegetation in the area near the downed conductor, consistent with CAL FIRE's described location of the fire.



**Figure 2:** Circuit Map and Protective Devices near Incident Location (Source: PG&E).

The PG&E Troubleman reported his findings and actions to the PG&E Distribution Control Center as stated in the 20-Day Report. The 20-Day Report’s findings indicate the downed conductor was a 12 kV single-phase one-way tap off the Rob Roy 2104 12 kV overhead distribution. A section of PG&E’s Rob Roy 2104 12 kilovolt (kV) overhead distribution circuit serves the area impacted by the fire. The PG&E Troubleman’s actions included cutting out a portion of the downed conductor and creating a repair tag for a restoration crew. PG&E collected a portion of the downed conductor into evidence.

On January 20, 2021, a PG&E Contract Restoration Crew arrived at the Incident Location to repair or replace the broken conductor and return the line to service. The PG&E Contract Restoration Crew completed the repairs on the broken conductor and Fuse 9975 was closed at 1950 hours, restoring power to the three impacted customers.

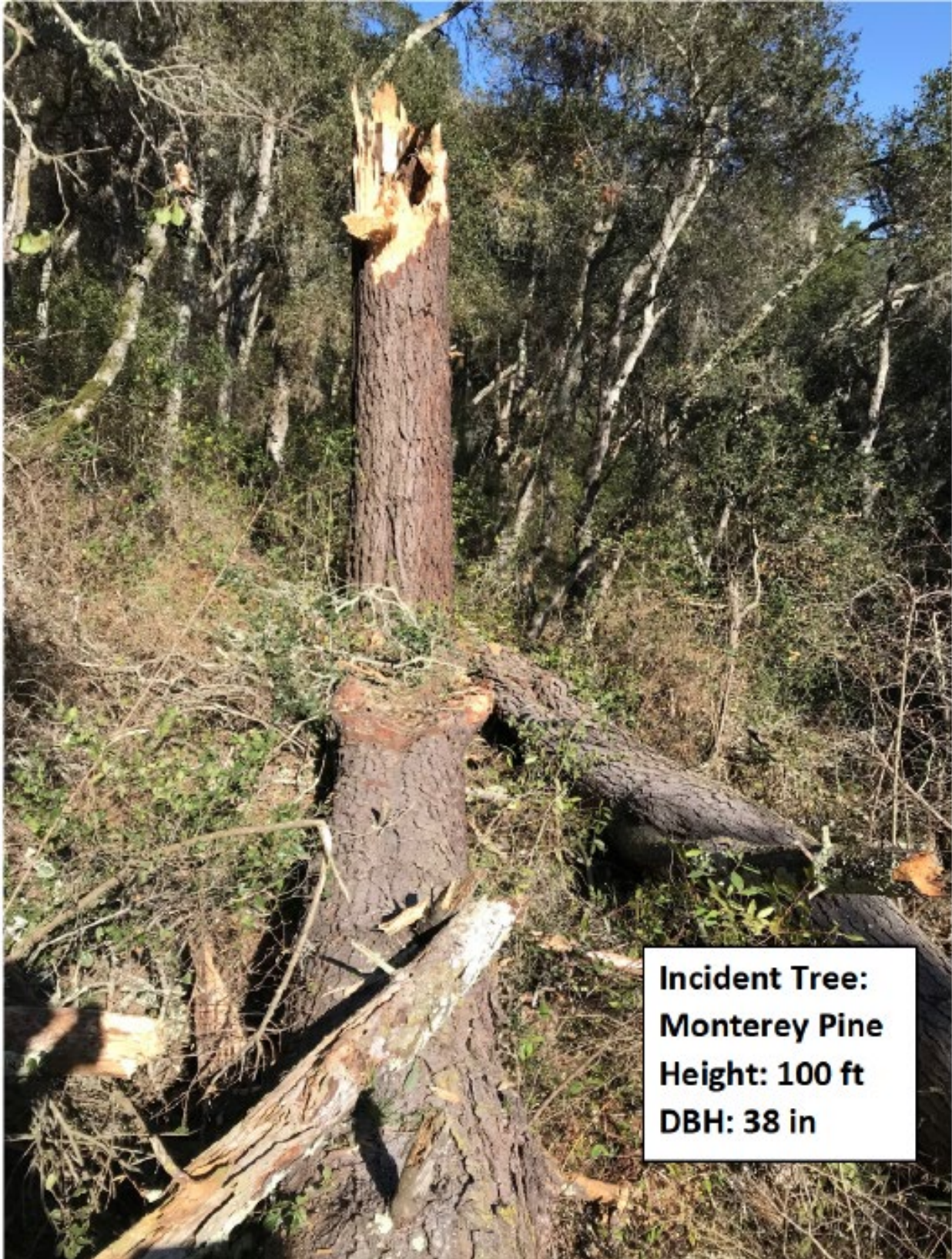
On January 20, 2021, at approximately 1300 hours, prior to completion of the repair of the broken conductors, a PG&E Vegetation Management Team, including a supervisor, went to the Incident Location to access the Incident Tree. The Vegetation Management Team Report stated, “observed the Incident Tree to be 100-foot tall, 38-inch diameter,<sup>1</sup> live, healthy, green Monterey Pine that failed at a forked top 20 feet above ground.” The Incident Tree was located mid-span on the second span of a two-span tap. The base of the Incident Tree was about 25 to 30 feet to the side of the conductors.

<sup>1</sup> A common term used in arboriculture is “Diameter at Breast Height,” commonly abbreviated as DBH. DBH is the calculated diameter based on a measured circumference at the height of an adult’s breast. See Figure 4 showing the DBH of the Incident Tree.



**Figure 3:** Incident Tree fallen into Rob Roy 2104 Circuit (Source: PG&E).

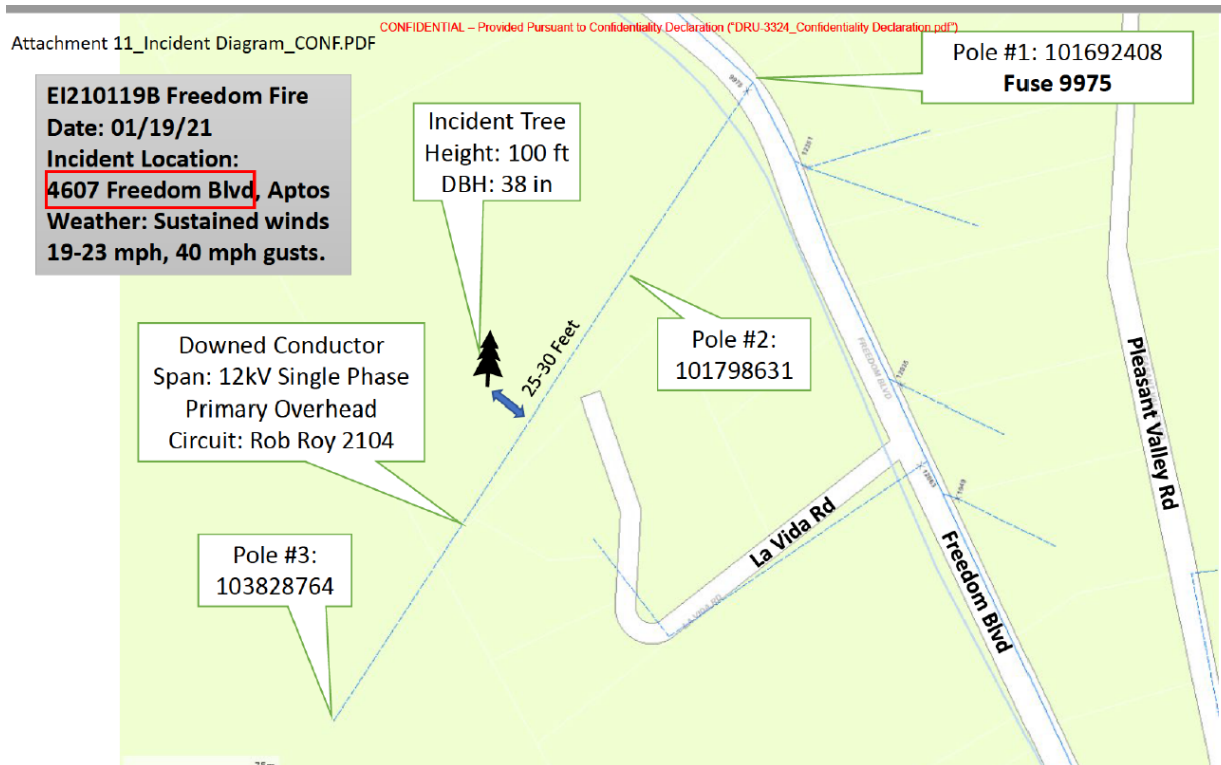
The PG&E Vegetation Management team observed an electrical wire down which was crossing a PG&E customer's driveway. The driveway is about 100 feet past the fallen tree. The span where the Incident Tree fell was last inspected by PG&E's Vegetation Management team on March 25, 2020. The Incident Tree was not included in the PG&E Vegetation Management Database Inventory because the tree did not require work to comply with regulatory guidelines. The spans related to this Incident Tree were patrolled in accordance with General Order (GO) 165 on or around March 2020 and no abnormal conditions were noted.



**Figure 4:** Incident Tree failure at fork top 20 feet above ground (Source: PG&E).

### SED's Findings:

The Incident Location is a residential suburban area at 4607 Freedom Boulevard in the City of Aptos in Santa Cruz County. The area is Tier 2 High Fire Threat District (HFTD) in a mountainous region with tall trees. At the Incident Location, a 100-foot-tall, 40-inch diameter, live, healthy, green Monterey Pine Tree failed at a forked top 20 feet above ground. The base of the Incident Tree was about 25 to 30 feet to the side of the conductors. The tree fell on a conductor between Pole # SAP ID 101798631 and Pole # SAP ID 103828764. The tree was approximately at mid-span with the circuit at this location running in the northeast-southwest direction.



**Figure 5:** Incident Diagram showing the Incident Tree relative to Poles (Source: PG&E).

To repair the damage caused by the tree, PG&E created EC Notification #120447914 to replace the downed conductor which was a 12 kV single-phase one way tap off the Rob Roy 2104 21 kV Overhead Distribution Circuit. PG&E completed the repairs on January 20, 2021, at 1950 hours.

Weather Station CT0C1 Corralitos is located approximately three miles east of the Incident Location. The recorded weather conditions beginning at approximately four hours before the 0800 ignition time are shown in the table below:

TIME [PST]	TEMPERATURE [FAHRENHEIT]	RELATIVE HUMIDITY [%]	WIND SPEED [MILES/HOUR]	WIND DIRECTION [DEGREES]	WIND GUST [MILES/HOUR]
0327	57	18	8	60	24
0427	56	18	7	49	22
0527	56	17	10	56	25
0627	56	16	10	57	28
<b>0727</b>	<b>56</b>	<b>15</b>	<b>11</b>	<b>57</b>	<b>34</b>
<b>0827</b>	<b>56</b>	<b>16</b>	<b>11</b>	<b>56</b>	<b>30</b>
0927	57	18	9	58	32

**Figure 6:** Weather conditions four hours leading up to ignition time recorded at Weather Station CT0C1 (Source: PG&E). Ignition time weather conditions in bold.

SED noted that the wind speed prior to the 0800 ignition time of the fire was increasing. However, the wind gust varied widely up to 34 miles per hour. This may have contributed to the falling of the Incident Tree. Weather station records at two other weather stations, both approximately four miles from the Incident Location, provided similar data.

PG&E provided records of patrol inspections of the incident facilities from January 2018 and April 2020, and detailed inspections from February 2014 and March 2019. PG&E's January 2018 and April 2020 patrol inspections identified no abnormal conditions. PG&E's February 2014 detailed inspection included 140 poles and identified several abnormal conditions. SED noted that none of the abnormal conditions occurred within the incident span. PG&E's March 2019 detailed inspection included 141 poles and identified several abnormal conditions. SED noted that none of the abnormal conditions occurred within the incident span.

For the two poles on the incident span, Pole # SAP ID 101798631 and Pole # SAP ID 103828764, SED requested previous inspection records for these two poles and PG&E provided 2010 and 2017 Pole Test and Treat (PTT) Inspection Records for both Pole # SAP ID 101798631 and Pole # SAP ID 103828764. SED reviewed the content of the two PTT Inspection Records for consistency with PG&E's Electrical Distribution Preventative Manual and found the action to be in conformance and in compliance with GO 165.

PG&E's June 2019 Vegetation Management Inspection identified 20 trees failing to meet the criteria of radial clearance, minimum distance requirements, or hazard trees having the potential to strike conductors. None of the 20 trees identified include the Incident Tree. PG&E's March 2020 Vegetation Management Inspection identified 10 trees failing to meet the criteria of radial clearance, minimum distance requirements, or hazard trees having the potential to strike conductors. None of the 10 trees identified include the Incident Tree. Records show corrective action, including tree removal or tree brush cutting, in accordance with PG&E Distribution Vegetation Management Utility Standard TD-7102S.



PG&E stated that Vegetation Management Inspections document those trees needing corrective action. Inspection Records do not list or include healthy trees. PG&E's contention that the Incident Tree was healthy is based on the fact it was inspected in June 2019 and March 2020, and no identification was noted for corrective action.

The Incident Tree was assessed by PG&E Vegetation Management Supervisor and staff on January 20, 2021. They observed a live, healthy, green Monterey Pine failed at forked top approximately 18 feet above ground. The Incident Tree was not included in the PG&E Vegetation Management Database inventory because the tree did not require work to comply with regulatory guidelines.

### **CAL FIRE Investigation Report:**

SED requested and received CAL FIRE's Investigation Report (CAL FIRE's Report) of the Freedom Fire. CAL FIRE's Report documents the events which took place as previously stated by PG&E. The CAL FIRE Report's conclusion states, "the probable ignition source causing the Freedom Fire was electrical power. The series of events causing the fire to be strong winds generated by a storm, causing a large Monterey Pine tree to fail, resulting in the branches of the tree to contact powerlines, resulting in the powerlines breaking and contacting vegetation. The contact between the broken powerlines and the vegetation having caused the 37-acre Freedom Fire."<sup>2</sup>

### **SED's Analysis:**

SED has 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 2 High Fire Threat Districts. The March 2019 detailed inspection and April 2020 patrol inspection meet this interval criteria. (**12 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**).

In accordance with GO 95 (*Rules for Overhead Electric Line Construction*), PG&E conducted annual vegetation patrols and completed identified vegetation work for all distribution facilities. SED noted that timely Vegetation Management Inspections in June 2019 and March 2020 did not identify the Incident Tree for remedial work. Furthermore, post-incident inspection of the Incident Tree provides an appearance of a healthy tree from outside appearance. For these

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<sup>2</sup> State of California Department of Forestry and Fire Protection, Supplementary Investigation Report, Incident Number 21CACZU00489, Case Name Freedom Fire, page 11.

reasons, PG&E'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 PG&E in violation of any General Order or Public Resources Code provisions. PG&E reported the incident promptly after becoming aware that it met the reportable criteria of significant media coverage. PG&E became aware the incident was reportable on January 20, 2021, and reported it the same day.

**Conclusion:**

Based on the evidence reviewed and examined in this investigation, SED did not find PG&E 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 and 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 identified the Subject Tree as healthy and did not require further action.