



## Preliminary Ignition Investigation Report

<b>Ignition Database Index:</b>	1911
<b>Electric Incident Investigation (EII) Number:</b>	N/A
<b>Assigned Attorney:</b>	N/A
<b>HAWC Incident Name:</b>	N/A
<b>Suspected Point of Origin Near PG&amp;E Facilities:</b>	Tracking on crossarm; contamination and moist weather
<b>PG&amp;E Facilities Possibly Attributable:</b>	Yes
<b>CPUC Reportable?</b>	No
<b>Date &amp; Time of Incident:</b>	10/24/2021 at 1814 hours
<b>Latitude/Longitude</b>	
<b>Street Address:</b>	Near intersection of Tesla Road and Cross Road, on Cross Road two poles north of Fuse 9185
<b>City:</b>	Livermore
<b>County:</b>	Alameda
<b>PG&amp;E Division:</b>	Mission
<b>High Fire Threat District:</b>	Non-HFTD
<b>Fire Index Area (FIA):</b>	N/A (Nearest FIA is 540 feet to the south.)
<b>Fire Potential Index (FPI) Rating:</b>	N/A (FIA 540 feet to the south had an FPI of R2.)
<b>Was there a PSPS event at the time of ignition?</b>	No
<b>Asset Type Involved:</b>	Crossarm
<b>Circuit:</b>	Vasco 1102
<b>Circuit Protection Zone:</b>	Vasco 1102MR178
<b>Nominal Voltage:</b>	12kV
<b>Lead Agency/Agency Having Jurisdiction:</b>	Alameda County Fire Department
<b>Fire Size:</b>	PG&E structure only (crossarm)
<b>Fire Containment Status:</b>	Contained
<b>FAS Field Remarks:</b>	"Pole fire. X-arm burned through in middle and is hanging on pole top. Tangent construction 3 Phase 12KV w/ #4 str Cu conductor. TX on pole Single phase 25 KVA with one service attached to Pt. 4."
<b>HAWC Notification (epage, Incident Report):</b>	N/A
<b>Injuries / Fatalities / Property Damage:</b>	PG&E structure only (crossarm, transformer)
<b>Weather Conditions:</b>	Windy and rainy day near incident location. High temperature was 69°F and minimum temperature was 54°F.
<b>Estimated Wind:</b>	9 mph with a gust as high as 18 mph
<b>Red Flag Warning (RFW):</b>	No
<b>High Wind Warning (HWW):</b>	No

<b>Media Attention:</b>	No
<b>911 Standby Relief Time:</b>	22 minutes
<b>OIS #:</b>	1514745
<b>ILIS #:</b>	21-0136549
<b>FAS #:</b>	T005438435
<b>EII Ignition Investigator &amp; Phone:</b>	

## Executive Summary

On October 24, 2021 at 1809 hours, Line Recloser (LR) MR178 opened; subsequently, at approximately 1815 hours, PG&E started receiving SmartMeter-generated notices and customer calls regarding an outage on the Vasco 1102 12kV distribution circuit on Cross Road, three spans north of Tesla Road, in the city of Livermore ("Incident Location"; Figure 1). The PG&E standby arrived at the Incident Location at 1860 hours and observed a wooden distribution pole ("Incident Pole") smoldering/smoking and the presence of the Alameda County Fire Department (ACFD). ACFD firefighters had extinguished the fire prior to the standby's arrival. The standby placed cones and tape around the Incident Location to secure the area. Other PG&E crews were working on nearby poles opened Fuse 9185, located two poles away to the south at 1845 hours; the Distribution Control Center (DCC) operator closed the line recloser back in, restoring power to 225 customers.

The PG&E troubleman arrived at the Incident Location at 1920 hours and observed the crossarm burned through the middle and hanging on the pole top of the Incident Pole (Figure 2). The troubleman created a priority "A" Electric Corrective (EC) notification to replace the crossarm and damaged transformer. A PG&E repair crew arrived at the Incident Location at 2160 hours and replaced the crossarm and transformer. By 0014 hours on October 25, 2021, the repair crew closed Fuse 9185, restoring service to the remaining affected customers, and departed the Incident Location. The outage affected 270 customers. There were no reported injuries or fatalities due to the incident, and the property damage was limited to PG&E assets.

PG&E personnel currently believe that "electrical tracking" on the crossarm and insulator was likely the cause of the event. Electrical tracking is an arc flash that can occur across porcelain insulators and wood crossarms due to contamination from industrial chemicals, sea salts, airborne pollution, or dust buildup on insulating equipment as a result of a weather event. Light misting precipitation, for example, can combine with contaminants on the insulating hardware and potentially create a bond between the contaminants. At 1810 hours, a weather station located 1.2 miles southeast of the Incident Location indicated that the temperature was 62.2°F with a relative humidity of 86%. These weather conditions are conducive to forming a low-resistivity film over the insulator. The troubleman reported it was raining when he arrived at the Incident Location.

Two line reclosers were located upstream of the Incident Location; Line Recloser MR178 (LR\_MR178) and Line Recloser MR418 (LR\_MR418). LR\_MR178, which was not EPSS enabled at the time of the incident and is located closest to the incident location, locked out for the fault condition for a period of 0.0565 seconds and opened, removing the faulted condition.<sup>1</sup> As LR\_MR178 successfully contained the fault, there was no need for EPSS enabled LR\_MR418 to open. The line protection operated as designed.

This information is preliminary, and all times, customer numbers, and measurements mentioned in this report are approximate.

<sup>1</sup> EPSS Ignition Impacts and Trend Report from [REDACTED] on November 10, 2021.

## Ignition Impact

The fire was contained to a PG&E pole. A crossarm was burned and a transformer was damaged. The fire did not spread to the surrounding area. The response to the ignition event affected 225 customers for 60 minutes and an additional 40 customers for 330 minutes.

## Sequence of Events

October 24, 2021

- 1809 hours – First No Light
- 1809 hours—Line Recloser MR178 opens.
- 1814 hours—PG&E begins receiving SmartMeter-generated notices and customer calls regarding outage on Vasco 1102.
- 1815 hours—PG&E dispatches troubleman.
- 1838 hours—PG&E dispatches standby.
- 1845 hours—Fuse 9185 opens.
- 1856 hours—Standby arrives on site and observes Incident Pole smoldering/smoking.
- 1910 hours—Line Recloser MR 178 closes, restoring power to 226 customers.
- 1916 hours—Troubleman arrives at Incident Location and observes crossarm burned through the middle and hanging on the pole top.
- 1943 hours—Troubleman leaves the scene.
- 2101 hours—Standby leaves the scene.
- 2102 hours—PG&E dispatches restoration crew.
- 2157 hours—Restoration crew arrives.

October 25, 2021

- 0014 hours—PG&E closes Fuse 9185, restoring power to the remaining 42 customers affected by the outage.
- 0137 hours—Restoration crew leaves the scene.

## Corrective Notification Associated with Ignition

PG&E issues EC Notification #122251613 to repair the damage. Restoration crews performed the corrective work to replace the burnt crossarm and 25kV overhead transformer under EC Notification #122251613.

## Pending Work

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	None				
COE Notification	N/A				
LC Notification	N/A				
Veg Work Order	N/A				

Please note this may not include pending major program or project work at the Incident Location.

## Asset Info & Recent Inspections and Tests

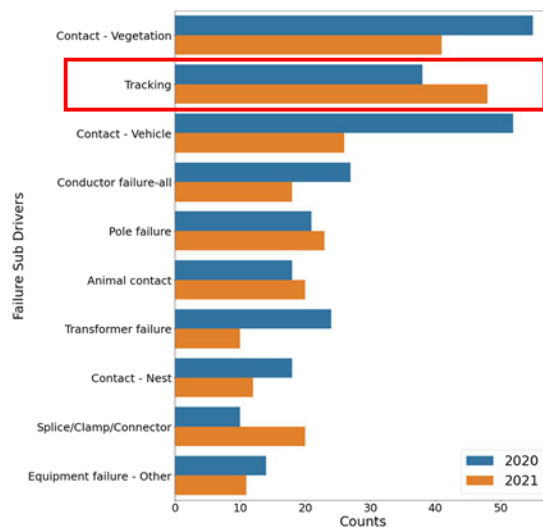
This report is preliminary and based on available information as of December 10, 2021; event data are subject to change based upon subsequently discovered information.

Info / Inspection	Most Recent Date	Findings
Install Date:	1/1/1952	
Inspection:	4/12/2017	No abnormal conditions observed.
	10/24/2012	No abnormal conditions observed.
Patrol:	5/26/2020	No abnormal conditions observed.
	4/16/2018	No abnormal conditions observed.
Corrective History:	4/7/2003	Notification 100953869—Transformer replaced due to leakage/seepage/weepage.
Aerial Inspection Records:	None	
VM Inspection:	N/A	
Equipment Test:	N/A	
Pole Intrusive Test:	1/5/2016	No test or treatment issues identified. Pole top and bottom condition “fair.”
WSIP Inspection:	None	

\*Incident Location: SAP ID: 100953869 (pole).

### Frequency of Occurrence

Electrical tracking has been identified as the second leading cause of wood pole ignition after vegetation contact with the line. There has been a similar number of tracking ignitions in 2021 as in all of 2020. The chart below shows the contribution of tracking as a sub-driver of ignitions recorded in the Ignition Tracker.



Period: January 2020 to August 13, 2021.

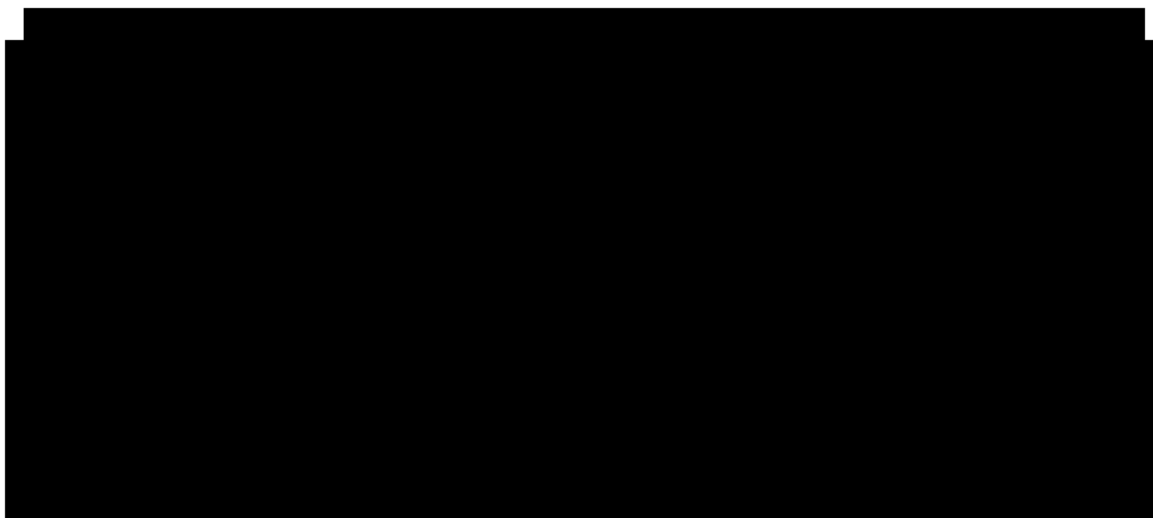
The table below summarizes counts of ignition caused by tracking as a sub-driver categorized by the reportable status and HFTD area of the ignition location.

Ignitions due to "Tracking"					
	CPUC Reportable		Not CPUC Reportable		
Year	Ignitions in Non-HFTD	Ignitions in HFTD	Ignitions in Non-HFTD	Ignitions in HFTD	Total
2020	3	2	33	2	40
2021	10	5	390	11	416

*2021 frequency of occurrence data collected from completed ignitions within the Ignition Database on 12/10/2021.*

### Potential Exposure

PG&E performed a comprehensive study on contamination-related "electrical tracking" ignition events in which several geographic areas were identified for the pole washing program to remove contamination on the insulators and reduce the likelihood of tracking failure. The yellow-outlined shapes in the figure below are areas with the highest likelihood of tracking failure and can be prioritized for active insulator washing. This incident was not part of a high-priority wash zone.



### Potential Next Steps

No potential next steps are recommended as a result of this ignition event.

- Asset Strategy and Electric Operations recently reinvigorated the PG&E pole washing program to mitigate tracking incidents. Moreover, "electrical tracking" is being incorporated in a larger Asset Failure Analysis (AFA) effort to document and better understand tracking within the PG&E network. Lastly, this

incident was part of neither a high fire threat district nor a high-priority wash zone. Consequently, no additional potential next steps are recommended with respect to electrical tracking.

- While the incident circuit was equipped with EPSS devices, it is not intended to prevent electrical tracking or subsequent pole fires. Consequently, no potential next steps are recommended with respect to EPSS.

## Photos and Diagrams of Events

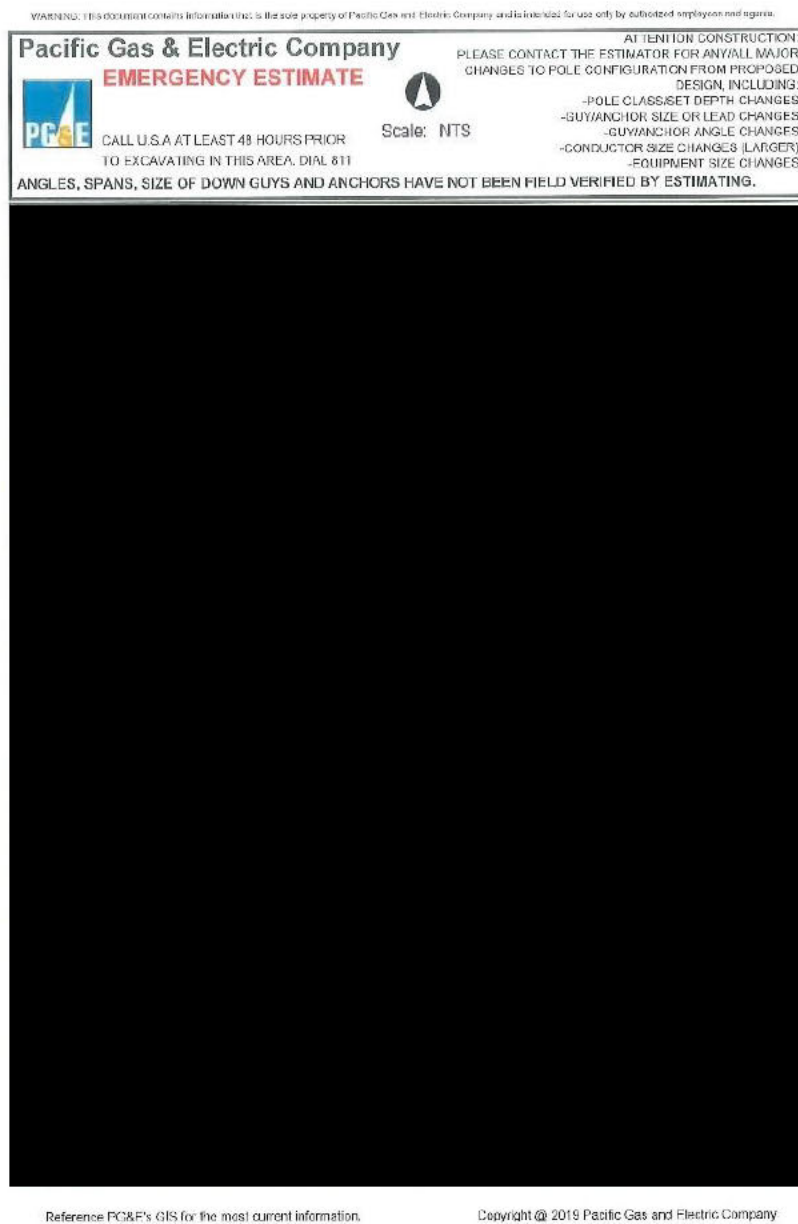


Figure 1: Primary line layout near Incident Location. Red arrow indicates Incident Pole.





*Figure 2: Photographs of Incident Pole taken by responding troubleman on October 24, 2021. The troubleman indicated it was raining hard when he arrived at the site.*



## Attachments

Attachments and references can be located in the ESA folder, shown below:



-----END of REPORT-----