



## Preliminary Ignition Investigation Report

<b>Ignition Database Index:</b>	20240866 (Index 866) 20240867 (Index 867)
<b>Electric Incident Investigation (EII) Number:</b>	N/A
<b>Incident Name:</b>	Silverado (866 and 867)
<b>PG&amp;E Facility Ignition?</b>	Yes – 866 and 867
<b>CPUC Reportable Ignition?</b>	Yes – 866 and 867
<b>Date &amp; Time of Incident:</b>	July 5, 2024, at approximately 1134 hours
<b>Street Address:</b>	Near Silverado Trail S and Conn Creek Road – 866 Near Silverado Trail S and Zinfandel Lane – 867
<b>City:</b>	Rutherford – 866 St Helena – 867
<b>County:</b>	Napa – 866 and 867
<b>Latitude/Longitude:</b>	38.485539, -122.408482 – 866 38.497072, -122.423395 – 867
<b>State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA)</b>	State Responsibility Area (SRA) – 866 and 867
<b>PG&amp;E Division:</b>	North Bay – 866 and 867
<b>High Fire Threat District (HFTD):</b>	Non-HFTD – 866 Tier 2 – 867
<b>High Fire Risk Area (HFRA):</b>	No – 866 Yes – 867
<b>EPSS Buffer:</b>	Yes – 866 No – 867
<b>Fire Index Area (FIA):</b>	N/A – 866 180 – 867
<b>Fire Potential Index (FPI) Rating: FIA</b>	N/A – 866 and 867
<b>Fire Potential Index (FPI) Rating: Circuit</b>	N/A – 866 R3 – 867
<b>Was there a PSPS event at the time of ignition?</b>	No – 866 and 867
<b>Suspected Initiating Event:</b>	Contact – Animal – Bird – 866 and 867
<b>Failure Driver:</b>	Contact from Object – 866 and 867
<b>Failure Sub-driver:</b>	Contact – Animal – Bird – 866 and 867
<b>Circuit:</b>	Silverado 2102
<b>Circuit Protection Zone:</b>	Silverado 2102-3010 (866) Silverado 2102-714 (867)
<b>Nominal Voltage:</b>	21kV
<b>Pole SAP Equipment ID:</b>	102260835 – 866 40771924/102260631 – 867
<b>Subject to PRC 4292 Veg Pole Clearance:</b>	No – 866 and 867

<b>PG&amp;E Equipment associated with ignition:</b>	Insulator (DE Non-Ceramic 21kV), Transformer, Crossarm, Cutout – 866 Conductor – Primary (4/0A) – 867
<b>EPSS enabled at time of ignition?</b>	No – 866 and 867
<b>Fault Type:</b>	Line to Line – 866 and 867
<b>Wire Down (Primary)?</b>	No – 866 and 867
<b>Lead Agency/Agency Having Jurisdiction:</b>	California Department of Forestry and Fire Protection (CAL FIRE) – 866 and 867
<b>Fire Size:</b>	3 meters – 0.25 acres near base of SAP Pole ID SAP 40771924/102260631 – 867 3 meters – 0.25 acres near base of SAP Pole ID SAP 102260835 – 866
<b>FAS Field Remarks:</b>	“Tag made for crew to replace 3 phase TX broken primary bushing SAP 102260835” – 866 “Found crow on 3ph pot. caused lr to open.” – 867
<b>HAWC Summary:</b>	“Napa County Fire resources responded to a vegetation fire near Silverado Trail and Hwy 128. Silverado IC reported two separate fires approximately 1 acre in size each. Both fires were stopped at approximately 1 acre. OMT reported an outage on SILVERADO 2102 OIS# 2505978 impacting 754 customers in aner 1 area, circuit was EPSS enabled. Smoke was visible in the Rutherford camera. PSS ... was notified and is engaged. Notifications were made to DCC ..., GCC ..., Gas Control ... All functional areas have been updated with current conditions. Closing incident barring significant changes in conditions.”
<b>Injuries / Fatalities / Property Damage / Media Attention:</b>	No
<b>Weather Conditions:</b>	At 1130 hours on July 5, 2024, at a weather observation site approximately 2 and 3 miles west of Incident Location #2 (867) and Incident Location #1 (866), respectively: <ul style="list-style-type: none"> <li>• Temperature: 88.5 °F</li> <li>• Relative Humidity: 40%</li> <li>• Wind Speed: 0.7 mph</li> <li>• Wind Gust: 3.1 mph out of the east-southeast</li> </ul>
<b>Red Flag Warning (RFW) / High Wind Warning (HWW):</b>	No
<b>911 Standby Relief Time:</b>	None
<b>OIS #:</b>	2505978
<b>ILIS #:</b>	24-0084299
<b>FAS #:</b>	T006439381
<b>TOTL #:</b>	N/A

Assigned Attorney:	N/A	
Ignition Investigator & Phone:	[REDACTED]	[REDACTED]
	[REDACTED]	[REDACTED]

## Executive Summary

On July 5, 2024, at approximately 1134 hours, a black crow came into contact with an overhead transformer on a wooden distribution pole SAP ID 102260835 ("Incident Pole #1", Figure 1 and Figure 2), resulting in an approximately 0.25-acre vegetation fire near Conn Creek Road in the city of Rutherford ("Incident Location #1", Figure 2). Subsequently, Line Recloser (LR) 3010 on the four-wire, three-phase Silverado 2102 21kV Overhead Distribution Circuit opened on a line-to-line (A-C) fault, deenergizing 186 customers. Approximately 1.4 seconds later, LR 714 on the same circuit opened on another line-to line (A-C) fault, deenergizing additional 568 customers. At 1137 hours, PG&E dispatched a troubleshooter ("Troubleshooter #1") to LR 714 who arrived at 1144 hours and started to patrol the circuit protection zone for trouble. Meanwhile at 1203 hours, another troubleshooter in the area ("Troubleshooter #2") identified another 0.25-acre vegetation fire within proximity of a transmission with distribution underbuild pole SAP ID 40771924/102260631 ("Incident Pole #2", Transmission Structure 001/014), near the intersection of Zinfandel Lane and Silverado Trail in the city of St. Helena ("Incident Location #2", Figure 3 and Figure 4). Incident Location #1 is within non-HFTD and non-HFRA, whereas Incident Location #2 is within an HFTD Tier 2 and HFRA, both in Napa County.

By 1230 hours, CAL FIRE had extinguished the pole fire and the fire at Incident Location #2. Troubleshooter #2 observed minimal damage (burn scarring) at the base of Incident Pole #2, not warranting de-energization of the Fulton-Pueblo 115kV transmission line. Troubleshooter #2 observed no other damage to PG&E structures or overhead equipment at this location. Around this time, CAL FIRE advised PG&E of another fire at Incident Location #1.<sup>1</sup> By 1333 hours, Troubleshooter #2 travelled to Incident Location #1 and found the remains of a black crow at the base Incident Pole #1 and a extinguished 0.25-acre vegetation fire (Figure 2 and Figure 5). Troubleshooter #2 also identified a broken/damaged primary insulator, cross-arm, transformer, and cutouts at Incident Pole #1 as well as adjacent overgrown vegetation. From 1333 hours to 1553 hours, troubleshooters patrolled the incident circuit and worked with Distribution Control Center ("DCC") to restore 658 customers affected by the outage. By 2236 hours, a PG&E crew completed repairs, removed the adjacent overgrown vegetation, installed protective bird guards to Incident Pole #1 and restored power to the remaining 96 affected customers. No partial voltage alarms associated with this incident have been identified.

At the time of the incident, PG&E meteorology data from the nearest weather station, located 3 miles west of Incident Locations #1 and 2 miles west of #2, recorded a temperature of 88.5°F, a relative humidity of 40%, sustained winds of 0.7 miles per hour (mph), and wind gusts up to 3.1 mph out of the east-southeast direction.

It appears likely that the avian contact at Incident Location #1 initiated an ignition near the base of Incident Pole #1 (Figure 2). In addition, the Distribution Fault Anticipation ("DFA") system detected a fault induced conductor slap (FICS or roping) between phases near Incident Pole #2. As such, it is likely the fault current generated from the avian contact resulted in FICS and a phase-to-phase arc event near Incident Pole #2 leading to another ignition incident approximately a mile in the west direction. This On August 27, 2024, Wildfire Risk Management ("WRM") and Asset Health Performance Center ("AHPC") flew a drone over Incident Location #2 and observed burnt/melted conductor damage on two phases at the same approximate distance from Incident Pole #2 above

<sup>1</sup> This separate ignition incident is Index 20240866.

a portion of the span crossing the burn scar (Figure 6). Neither AHPC or WRM observed any arc damage to the flying bells.<sup>2</sup> These observations and the meteorology data captured may suggest that the ignition at Incident Location #2 being caused by a fault induced conductor slap.

PG&E did not identify any injuries, fatalities, media attention, or property damage associated with the incident. This information is preliminary, and all times, customer numbers, and measurements mentioned in this report are approximate.

### System Protection Analysis

While the Incident Location #1 was within the EPSS Buffer Zone and Incident Location #2 was within the HFTD Tier 2 and HFRA, EPSS settings were not enabled at the time of the incident due to restoration activities following LR 714 tripping on a line-to-line (B-C) fault at 0538 hours (Figure 5). As such, LR 714 and LR 3010 (both equipped with Nova Form 6 controllers) operated automatically in approximately 500 ms under normal non-EPSS profile settings on A and C phase time overcurrent targets. There were no partial voltage alarms generated.

### Ignition Impact

The incident ignited two approximately 0.25-acre fires at the base of the Incident Pole #2 and Incident Pole #1. Both fires were subsequently extinguished by CAL FIRE. The incident resulted in a sustained outage impacting 207 customers for three hours and 21 minutes, 90 customers for three hours and 39 minutes, 361 customers for four hours and 96 customers for 11 hours and 1 minute.

### Sequence of Events

July 5, 2024

- 0538 hours – LR 714 tripped due to a line-to-line (B-C) fault. For restoration, the LR 714 and LR 3010 were moved to the normal profile.
- 1134 hours – A crow contacted a three-phase transformer resulting in a line-to-line (A-C) fault and ignition, opening LR 3010. 1.4 seconds later, a line-to-line (A-C) fault occurred in LR 714's protective zone, resulting in another ignition.
- 1137 hours – Troubleshooters dispatched.
- 1144 hours – Troubleshooter #1 arrived at Incident Location #2 and started patrol.
- 1203 hours – Troubleshooter #2 identified Incident Pole #2 on fire.
- 1230 hours – Troubleshooter #2 reports to DCC that CAL FIRE had extinguished fire at Incident Location #2.
- 1333 hours – Troubleshooter #2 identified a bird carcass at the base of Incident Pole #1.
- 1348 hours – Troubleshooter #1 declared that conductor wires and pole were in good condition to be energized.
- 1437 hours – DCC opened LR 914108 to allow some customers be restored until aerial patrols (helicopter) can be performed downstream this device.
- 1456 hours – DCC closed LR 714, restoring power to 207 customers.

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<sup>2</sup> The field observation on the day of the incident was inconclusive in determining whether arcing marks were present on the flying bells, as the pole was too far away (Verbal communication with Troubleshooter #1, dated October 11, 2024).

- 1500 hours – DCC opened SW 2077 to allow some additional customers be restored until repairs can be performed at Incident Location #1.
- 1514 hours – DCC closed LR 3010, restoring power to 90 customers.
- 1536 hours – Troubleshooter #1 reports to DCC that patrol points are clear and ready to be energized.
- 1553 hours – DCC closed LR 914108, restoring power to 361 customers.
- 1848 hours – Repair crew arrived onsite.
- 2121 hours – Repair crew finished work and left site.
- 2236 hours – DCC closed SW 2077, restoring power to 96 customers.

### Corrective Notification Associated with Ignition

Two EC notifications were created in response to this incident. EC Notifications 129176645 and 129175528 for Incident Pole #1 were completed immediately on the same day of identification on July 5, 2024. EC Notification 129309574 for the Incident Pole #2 was completed on September 12, 2024.

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	129176645	Replaced broken transformer primary bushing on the Incident Pole #1	A	Jul 5, 2024	Jul 5, 2024
EC Notification	129175528	Replaced insulators, crossarms, and cutout, removed overgrown vegetation near Incident Pole #1	A	Jul 5, 2024	Jul 5, 2024
EC Notification	129309574 <sup>3</sup>	Increasing the distance between different conductor lines due to future ignition hazard around vicinity of the Incident Pole #2	B	Jul 30, 2024	Aug 30, 2024

### Pending Work

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	N/A	N/A	N/A	N/A	N/A
COE Notification	N/A	N/A	N/A	N/A	N/A
LC Notification	N/A	N/A	N/A	N/A	N/A
Veg Work Order	N/A	N/A	N/A	N/A	N/A

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

<sup>3</sup> EC Notification 129309487 is a duplicate of EC Notification 129309574, and therefore was cancelled.

## Asset Info & Most Recent Inspections and Tests

<b>Source Side Structure</b>	102260835 (Incident Pole #1)	
<b>Info / Inspection</b>	<b>Most Recent Date</b>	<b>Findings</b>
Install Date:	1989	45 Foot Class-2 Wood Pole
Inspection:	June 24, 2022	Reported pole damage from woodpecker Subsequently filled through EC Notification 123915532
	June 25, 2020	-
Patrol:	-	-
Corrective History:	July 17, 2022	Filled woodpecker hole through EC Notification 123915532
Aerial Inspection Records:	-	-
VM Inspection:	-	-
EVM Inspection:	-	-
Equipment Test:	-	-
WSIP Inspection:	-	-

<b>Source Side Structure</b>	102260631 (Incident Pole #2)	
<b>Info / Inspection</b>	<b>Most Recent Date</b>	<b>Findings</b>
Install Date:	1977	60 Foot Class-2 Wood Pole
Inspection:	May 13, 2023	-
	March 26, 2021	-
Patrol:	-	-
Corrective History:	-	-
Aerial Inspection Records:	-	-
VM Inspection:	-	-
EVM Inspection:	-	-
Equipment Test:	-	-
WSIP Inspection:	-	-



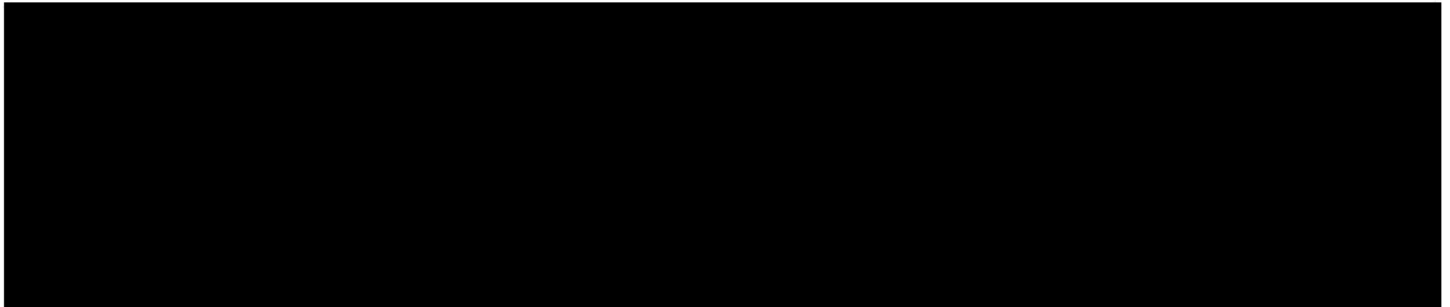
## Hazard Barrier Analysis:

Hazard	Contact from Object	Sub-Hazard	Contact – Animal – Bird
Target	Avian/Bird contact with OH primary conductor leading to 0.25-acre ignition, causing fault induced conductor slap (or roping) upstream, leading to another 0.25-acre ignition.		
Barrier	Expected vs. Observed Performance	Why did the barrier not prevent the ignition event? (See <a href="#">ICF Codes</a> )	Opportunity
Barriers that were Assessed as Opportunities			
Pole Clearing Program  2023-2025 Wildfire Mitigation Plan Public Resources Code (PRC) 4292; California Code of Regulations (CCR) Title 14 1254; TD-7112P-01 Rev. 0	Expected Performance: Clear vegetative fuel within a 10-foot radius around subject poles from 0-8 feet above ground level to limit ignition and fire spread.  Observed Performance: Barrier did not exist.	A4B2C3D1 – only applies to poles with non-exempt equipment	Ignition size may have been smaller if pole clearing had been applied.
Voluntary Risk Reduction  TD-7112P-01	Expected Performance: Reduce the likelihood of rapid fire development or impact in proximity to PG&E assets. Extends pole clearing program for selected poles to reduce risk.  Observed Performance: Barrier did not exist.	N/A	One of the ignitions occurred within 10 feet of the Incident Pole #1, in which case Pole Clearing would have been an appropriate opportunity for risk reduction.
Raptor Protection Hardware  Document 061149 Rev. 14	Expected Performance: Prevent birds from creating electrical faults between energized components with physical barriers (insulating hardware), such as equipment guards/cover shields, perch deterrents, conductor spacers, nest platforms, bird flight diverters.  Observed Performance: Barrier did not exist.	N/A	Providing raptor protection hardware would prevent birds from creating electrical faults. Note that on after this incident, bushing cover was installed on the overhead transformer on Incident Pole #2.

### Potential Next Steps / Associated CAP Items:

No next steps were identified as a result of this investigation.

### Single Line Diagram



#### LEGEND



Substation



Fuse



Line  
Recloser



Area of  
Interest



## Photos and Diagrams of Events

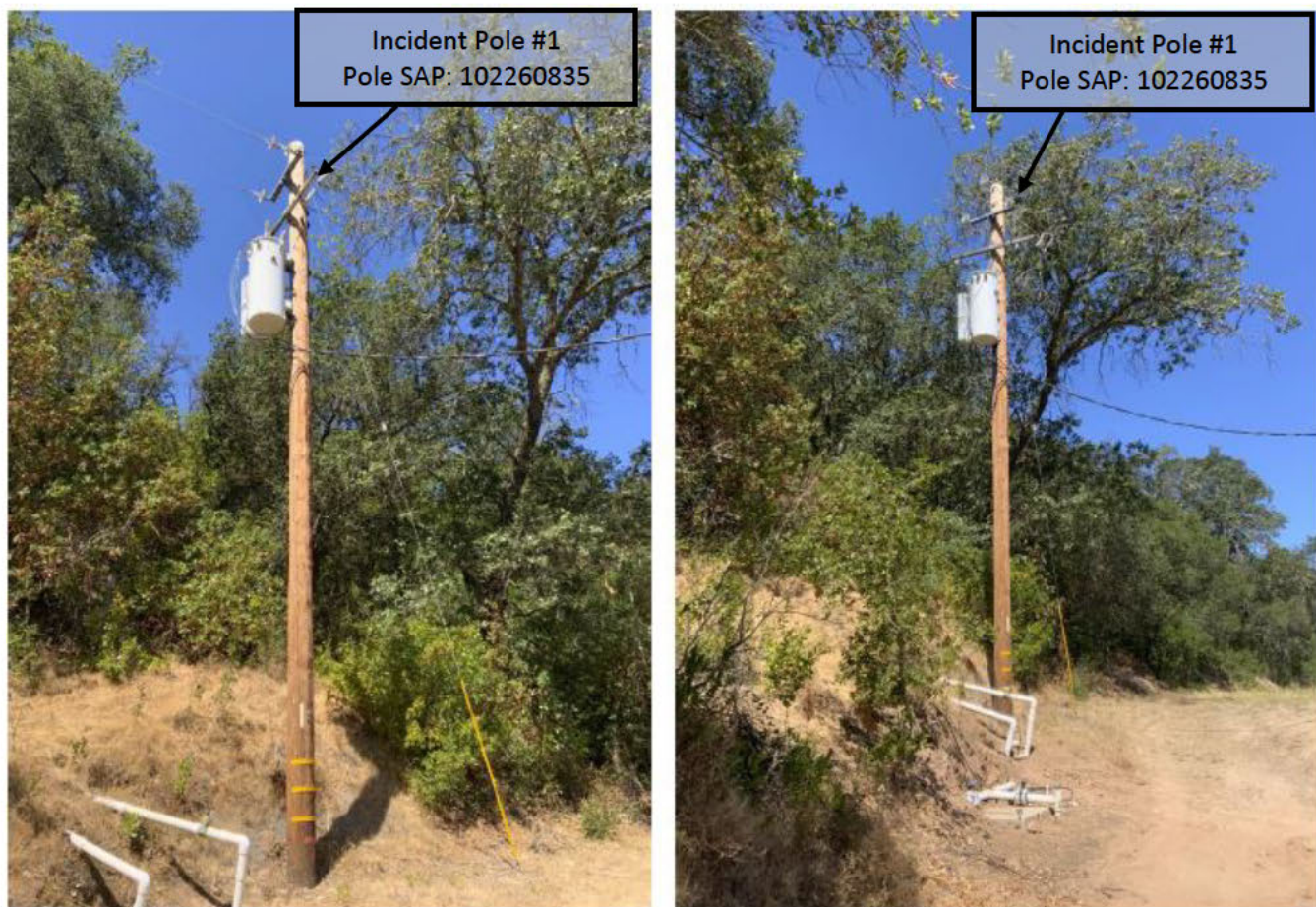


Figure 1. Inspection photos of the Incident Pole #1 (taken June 24, 2022).





Figure 2. Incident photos of the Incident Pole #1 and some burnt area (taken July 5, 2024).

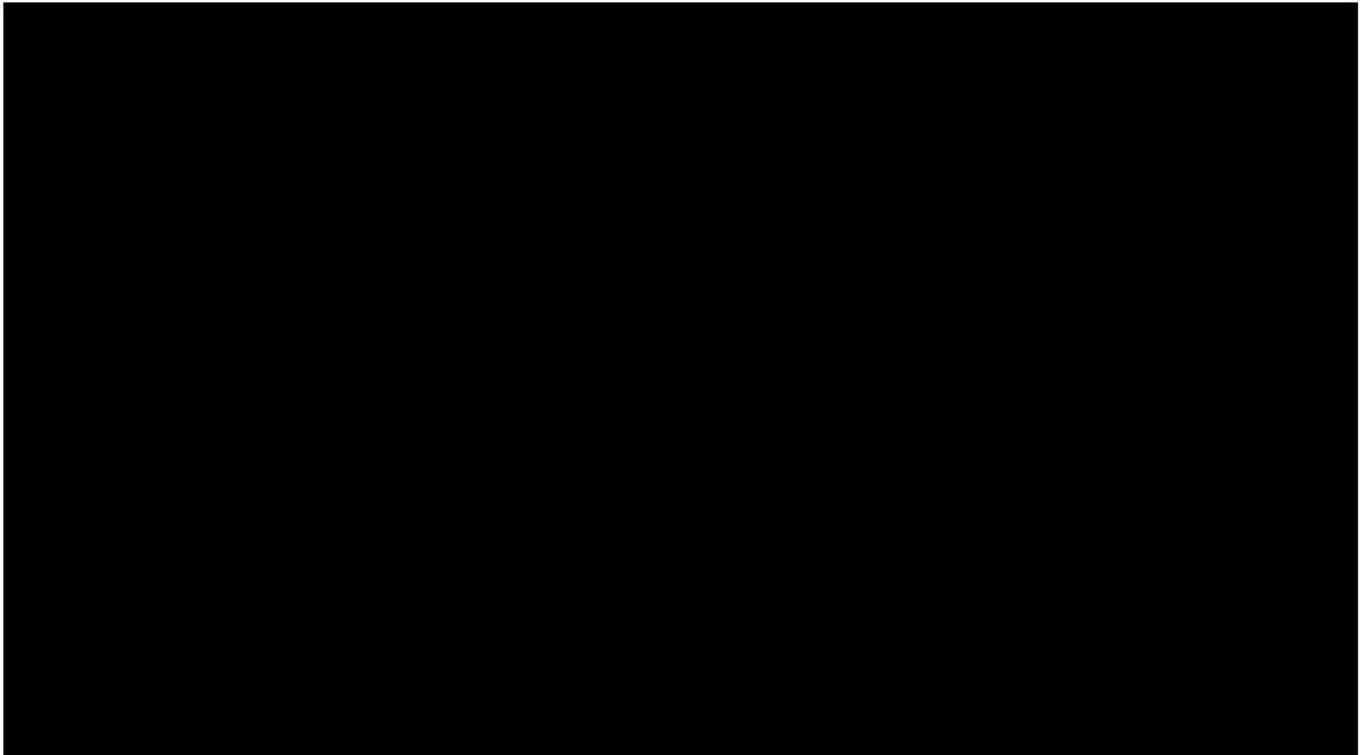


Figure 3. Inspection photos of the Incident Pole #2 (taken May 13, 2023).





*Figure 4. Photos of the Incident Pole #2 and a section of burnt area (taken July 5, 2024).*



*Figure 5. EDGIS map of incident circuit.*



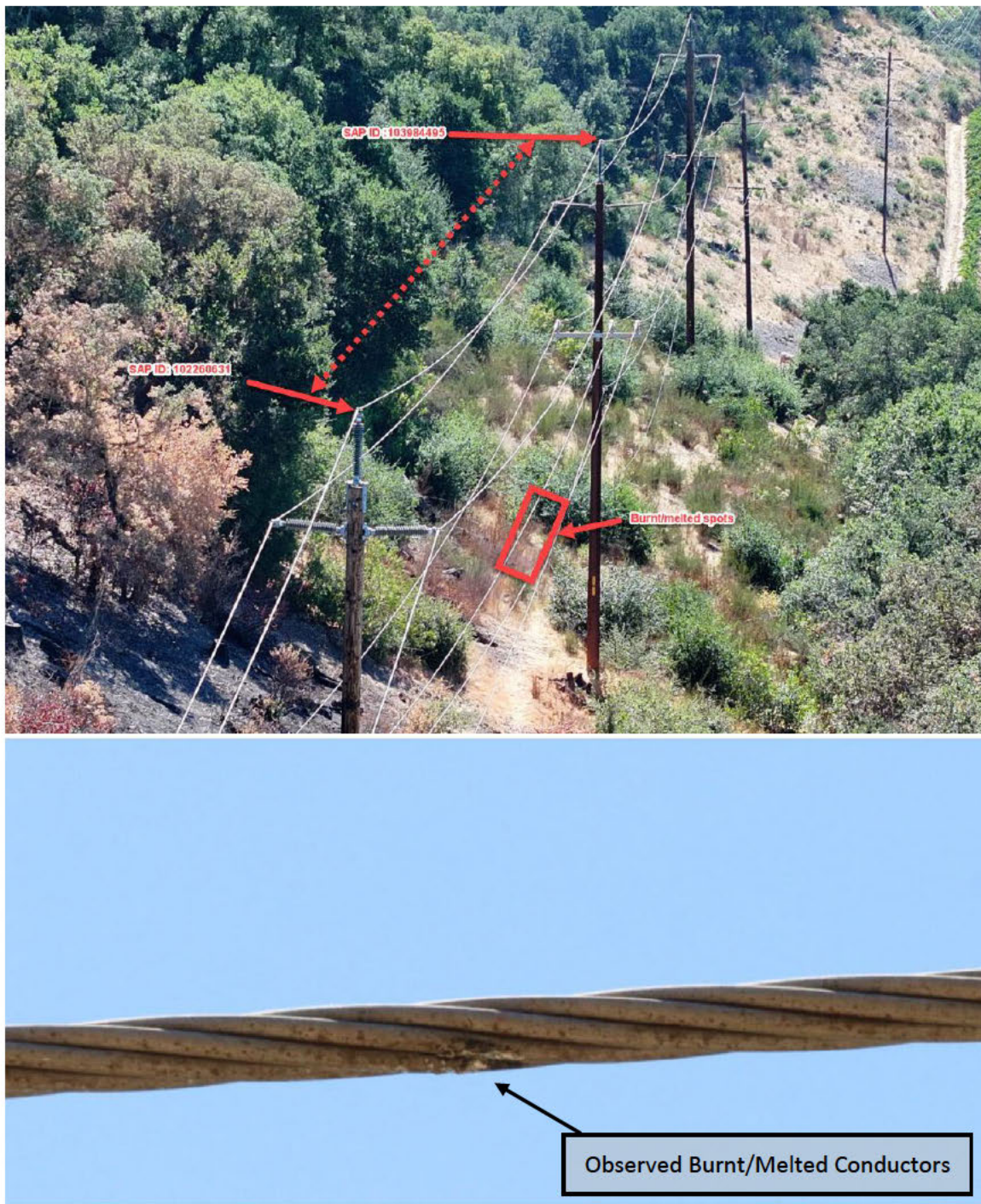


Figure 6. Site visit photos and annotations by Asset Health Performance Center (taken August 27, 2024).



## Attachments

The ESA folder below contains attachments and references related to this incident:

[REDACTED]

[REDACTED]

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