



Preliminary Ignition Investigation Report

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| Ignition Database Index: | 20241154 |
| Electric Incident Investigation (EII) Number: | N/A |
| Incident Name: | Camino |
| PG&E Facility Ignition? | Yes |
| CPUC Reportable Ignition? | Yes |
| Date & Time of Incident: | August 16, 2024 at approximately 0653 hours |
| Street Address: | Near 15500 Camino Del Arroyo |
| City: | Guerneville |
| County: | Sonoma |
| Latitude/Longitude: | 38.51142, -123.02988 |
| State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA) | SRA |
| PG&E Division: | Sonoma |
| High Fire Threat District (HFTD): | Tier 3 |
| High Fire Risk Area (HFRA): | Yes |
| EPSS Buffer: | No |
| Fire Index Area (FIA): | 140 |
| Fire Potential Index (FPI) Rating: FIA | R2 |
| Fire Potential Index (FPI) Rating: Circuit | R4 |
| Was there a PSPS event at the time of ignition? | No |
| Suspected Initiating Event: | Vegetation |
| Failure Driver: | Contact from Object |
| Failure Sub-driver: | Contact – Vegetation |
| Circuit: | Monte Rio 1113, 04281-1113 |
| Circuit Protection Zone: | Monte Rio 1113 LR 320 |
| Nominal Voltage: | 12kV |
| Pole SAP Equipment ID: | 102037429 |
| Subject to PRC 4292 Veg Pole Clearance: | No |
| PG&E Equipment associated with ignition: | #6 Solid Copper (Cu) Conductor |
| EPSS enabled at time of ignition? | Yes |
| Fault Type: | Open Circuit |
| Wire Down (Primary)? | Yes |
| Lead Agency/Agency Having Jurisdiction: | Sonoma County Fire Department |
| Fire Size: | Between 3 meters and 0.25 acres or approximately 50 x 30-foot per Vegetation Management. |
| FAS Field Remarks: | Crew to replace 1 span 1 #6 solid Cu down. Sent EC tag with pics, notified M+C supervisor, left New E-fuses at base of pole for crew to replace. |

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| HAWC Summary: | Resources responded to a vegetation fire, the Camino Incident. It was located at 16301 Old Cazadero Road, Guerneville in Sonoma County. This is a Tier 3 area. The fire was listed as contained. The fire size was last listed as 0.25 acres. There was an outage associated with this incident. The outage was on the Monte Rio 1113 circuit with 413 customers impacted. The OIS number(s) was- 2543409. The closest circuit was the Monte Rio 1113, it was an EPSS circuit. An Everbridge message was sent at 1205 hours. Notifications were only made to: HAWC supervisor. |
| Injuries / Fatalities / Property Damage / Media Attention: | No Injuries/Fatalities/Property Damage/Media Attention |
| Weather Conditions: | Warm day at 50.7°F |
| Red Flag Warning (RFW) / High Wind Warning (HWW): | RFW – No HWW – No |
| 911 Standby Relief Time: | N/A |
| OIS #: | 2543409 |
| ILIS #: | 24-0099901 |
| FAS #: | T006476012 T006475997 – Assist |
| TOTL #: | N/A |
| Assigned Attorney: | N/A |
| Ignition Investigator & Phone: | |

Executive Summary

On August 16, 2024 at approximately 0653 hours, PG&E dispatched a troubleshooter (Troubleshooter #1) in response to an auto-generated SmartMeter™ alarm and the detection of partial voltage (PV) readings near Camino Del Arroyo and Old Cazadero Road in the City of Guerneville. Shortly after, another troubleshooter (Troubleshooter #2) was dispatched to assist with a drone fly over of the two-phase primary overhead segment of the Monte Rio 1113 12kV distribution circuit (see Figure 1). At approximately 0758 hours, Line Recloser (LR) 180 tripped open and de-energized this segment of the circuit. Troubleshooter #2 via drone patrol, observed and reported to the Distribution Operator (DO) that two of two fuses at Fuse 7709 were still closed and not blown. At 0855 hours, Troubleshooter #1 opened Fuse 7709 to make the scene safe. Troubleshooter #1 confirmed and reported to the DO that a broken tree caused a wire down (see Figure 2) nine spans load side of Fuse 7709 between Pole SAP ID 102037429 and 101974959 (Incident Location). The resulting wire down ignited the surrounding vegetation below but both troubleshooters were able to utilize their shovels to extinguish and contain the fire to a burn size of 50 x 30-feet (see Figure 3). The Monte Rio 1113 is located within a Tier 3 High Fire Threat District (HFTD) and High Fire Risk Area (HFRA) with Enhanced Powerline Safety Settings (EPSS) enabled during R4 conditions for the circuit (see System Protection Analysis section below).

As a result of this ignition event, two Electric Corrective (EC) tags were created. A priority “A” EC tag (#129398176) was created to replace the broken #6 solid copper (Cu) conductor and a priority “B” EC tag (#129400360) was created for 10-feet of ground clearance to Pole SAP ID 102037429. A PG&E crew repaired/replaced 600-feet of conductor on August 16, 2024. However, the ground clearance work is still pending with a due date of February 16, 2025.

The Vegetation Management (VM) team conducted a post-incident investigation on August 16, 2024. The incident tree identified by the VM investigator is a 50-foot-tall tan oak with a nine-inch diameter at breast height (DBH) located approximately 40-feet from the conductor. The tan oak broke at the base of the tree and fell towards the primary conductors (see Figure 4) that resulted in a 50 x 30-foot fire. The VM investigator noted that the tree appeared alive but with slight thinning of the foliage. Further observation showed that the base of the tree exhibited significant decay at the failure point (see Figure 5) but there was no visible evidence of external decaying. The VM investigator also indicated that tiny fruiting body of hypoxylon¹ fungi was observed on the tree (see Figure 6) but was hidden and covered by moss.

The incident tree is not on a Routine or Tree Mortality Inspection Record and was not within the Enhanced Vegetation Management (EVM) work plan. However, other trees on the Monte Rio 1113 circuit were last worked during November 2022-April 2023 with the last pre-inspection patrol completed from June-July 2024. The next planned tree work for the circuit is to be completed before the end of November 2024 with pre-inspection patrol slated for June-July 2025.

¹ Hypoxylon is a fungal disease that is commonly found on dead wood and often one of several factors responsible for tree death.

An Extent of Condition (XoC) was also completed by the VM team on August 20, 2024. The XoC included a patrol of a total of 15 spans (five spans east and south, five spans west and south, four spans southwest, and one span west of the Incident Location) to identify any potential corrective actions related to P1 and P2² trees with obvious defects that might be of immediate concern including trees encroaching the minimum required distance to conductor. One P2 tree was identified for removal.

PG&E Meteorology data pulled from the MesoWest observation site that is approximately 1.22 miles east of the Incident Location indicates a warm day at 50.8°F with relative humidity at 95%. Winds were calm at the approximate time of the incident event with the strongest wind gust at 15.3 Miles Per Hour (MPH) at 1440 hours. There were no Red Flag or High Wind Warning nor did this incident occur during a Public Safety Power Shutoff (PSPS) event.

System Protection Analysis

PG&E Distribution Asset Planning team confirmed that Enhanced Powerline Safety Settings (EPSS) were enabled for the Monte Rio 1113 since May 30, 2024. Per engineering, both the nearest protective device to the Incident Location (LR 320: Alt 3 - SGF³) and the upstream protective device (LR 180: Mode 3 - SGF and DCD⁴) were EPSS enabled. During the approximate time of the tree failure that resulted in a wire down, LR 320 (not DCD capable) did not initially open but would eventually/automatically open prior to the troubleshooter having to request the DO to manually open it. Upstream LR 180 did register a high impedance fault with 19 amps (Phase A), 5 amps (Phase B), 19 amps (Phase C) with ground amps observed at 2.5 amps and tripped open on DCD. Although PV alarms were received initially at Fuse 7709, it was not enough for a PV force out. The PV rolled up to and was verified by (and tripped) LR 180⁵ (see Potential Next Steps / Associated CAP Items section below). Fuse 7709 was confirmed as closed by the troubleshooters during their patrol. Based on the settings and the outcome, the EPSS scheme operated as designed.

Ignition Impact

This ignition event on August 16, 2024 resulted in a small brush fire that burned approximately between three meters and 0.25 acres in size. The associated outage affected 413 customers for a total of 761 customer minutes. There were no reported injuries, fatalities, property damages or significant media attention associated to this event.

² P1 trees presents an immediate safety and/or reliability risk with high probability for significant impact. P2 trees are nonimmediate high to low safety and/or reliability risk.

³ SGF: Sensitive Ground Fault

⁴ DCD: Down Conductor Detection

⁵ See Utility Procedure TD-2700P-26: Enhanced Powerline Safety Settings (EPSS) and Patrol Process, Revision 3, Section 6.

Sequence of Events

August 16, 2024

- 0653 Hours: First No Light (FNL) per ILIS.
- 0654 Hours: Partial voltage detected.
- 0701 Hours: Troubleshooter #1 dispatched in response.
- 0720 Hours: Troubleshooter #2 dispatched.
- 0758 Hours: LR 180 opens on DCD/SGF targets.
- 0804 Hours: Troubleshooter #2 reports 2 of 2 at Fuse 7709 found closed.
- 0855 Hours: Troubleshooter #1 opens Fuse 7709.
- 0856 Hours: Troubleshooter #1 reports wire down nine spans load-side of Fuse 7709 due to tree.
- 0919 Hours: Troubleshooter #1 reports completed EPSS patrol from Incident Location to Fuse 7709 and from Fuse 7709 to LR 180, okay to energize.
- 0922 Hours: LR 180 closed, 405 customers restored.
- 1202 Hours: Crew onsite and given okay to hold own from open Fuse 7709 to end of line. Crew must call DO to disable EPSS prior to closing Fuse 7709.
- 1806 Hours: DO places Monte Rio CB 1113/2 in Group 5 settings, LR 180 in RCL Mode and LR 320 in normal profile. Crew given okay to close Fuse 7709.
- 1812 Hours: Fuse 7709 closed, remaining eight customers restored.
- 1819 Hours: DO places Monte Rio CB 1113/2 in Group 3 settings, LR 180 in RCL Mode 3 and LR 320 in ALT 3.

Corrective Notification Associated with Ignition

As a result of this event, two EC tags were created:

- Priority "A" EC tag (#129398176) created to replace the broken conductor
- Priority "B" EC tag (#129400360) created for 10-feet of ground clearance to Pole SAP ID 102037429

Pending Work

| Type | Number | Description | Priority | Date Identified | Due Date |
|-----------------|-----------|--|----------|-----------------|--------------------|
| EC Notification | 116756536 | Priority "H" EC tag (#116756536) created to replace decaying/rotten pole and to remove vegetation around pole. Tag is still open with an original due date of September 14, 2019. Noted that pole will be incorporated into Hardening Project. Multiple Field Safety | H | March 18, 2019 | September 14, 2019 |

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| | | Reassessments (FSR) have been conducted with the most recent dated January 15, 2024. New suggested due date is November 16, 2024. | | | |
| 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 & Most Recent Inspections and Tests

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| Source Side Structure | 101974959 | |
| Info / Inspection | Most Recent Date | Findings |
| Install Date: | January 1, 1950 | 40-foot, Class 5, Douglas Fir |
| Inspection: | July 28, 2022 | GO165 Inspection identified no issues associated with the pole, equipment and its associated spans. No vegetation risks observed. |
| | May 7, 2021 | GO165 Inspection identified buried anchor and tree overgrowth above guy. Referred to pre-existing EC tag (#119125935) from 2020. See “Corrective History” section below for details. |
| Patrol: | N/A | |
| | | |
| Corrective History: | June 6, 2020 | Priority “E” EC tag (#119125935) created to replace buried anchor, incorrectly installed connector within two feet of insulator and to trim overgrowth near guy. Work completed on April 30, 2022. |
| | July 28, 2018 | Priority “E” EC tag (#114829802) created to replace damaged insulator and trim overgrowth near guy. Work completed on January 10, 2019. |
| Aerial Inspection Records: | August 29, 2019 | Aerial photos of asset in Sharper Shape. |
| | | No aerial photos of assets in iHawk as of yet. |
| VM Inspection: | June 4 to July 4, 2024 | Second Patrol – Tree was not identified as requiring work. |
| EVM Inspection: | N/A | Subject tree is not within EVM work plan. |
| Equipment Test: | N/A | |
| Pole Intrusive Test: | August 31, 2017 | Passing results with the following: Fair pole top and pole bottom condition. Wood strength testing at 100%. |

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| WSIP Inspection: | March 18, 2019 | WSIP Inspection identified no compelling abnormal conditions for the pole, equipment and its associated spans. |
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| Load Side Structure | 102037429 (Incident Pole) | |
| Info / Inspection | Most Recent Date | Findings |
| Install Date: | January 1, 1950 | 35-foot, Class 5, Douglas Fir |
| Inspection: | July 26, 2022 | GO165 Inspection identified vegetation overgrowth. Noted pole wrapped at ground-line. Referred to pre-existing EC tag (#116756536). See “Pending Work” section above for details. |
| | May 22, 2021 | GO165 Inspection identified damaged pole. Referred to pre-existing EC tag (#116756536). See “Pending Work” section above for details. |
| Patrol: | N/A | |
| | | |
| Corrective History: | March 18, 2019 | Priority “H” EC tag (#116756536) created to replace decaying/rotten pole. Tag is still open with an original due date of September 14, 2019. See “Pending Work” section above for details. |
| Aerial Inspection Records: | August 29, 2019 | Aerial photos of Incident Pole in Sharper Shape. |
| | November 4, 2023 | Aerial photos of Incident Pole in iHawk (see Figure 7). |
| VM Inspection: | June 4 to July 4, 2024 | Second Patrol – Tree was not identified as requiring work. |
| EVM Inspection: | N/A | Subject tree is not within EVM work plan. |
| Equipment Test: | N/A | |
| Pole Intrusive Test: | September 1, 2017 | Passing results with the following: Fair pole top and pole bottom condition. Wood strength testing at 100%. |
| WSIP Inspection: | March 18, 2019 | WSIP Inspection identified decaying pole. Noted five auto splices south of Incident Pole. EC tag (#116756536) created. See “Corrective History” section above for details. |

*Incident Location: Between Pole SAP ID 102037429 and 101974959

This report is preliminary and based on available information as of **December 11, 2024**; event data is subject to change based upon subsequently discovered information.

Doc. R18 – Mar 2024

Internal

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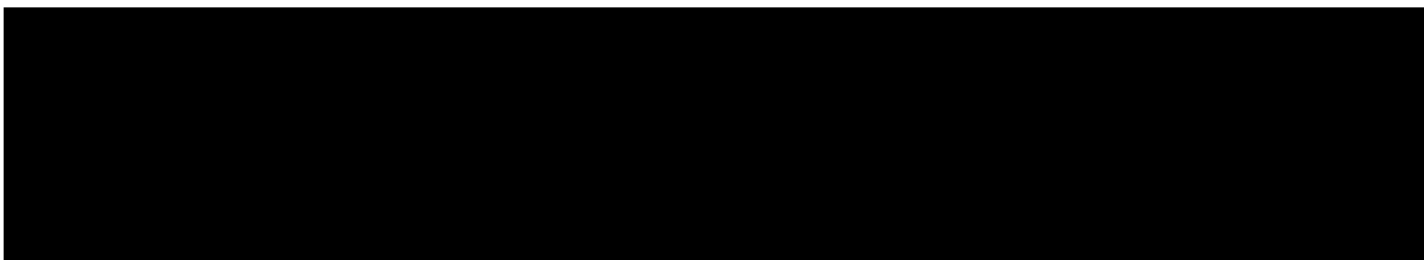
Hazard Barrier Analysis:

| Hazard | Vegetation Contact | Sub-Hazard | Fallen Tree |
|--|---|--|--|
| Target | Fallen Tree Contacting PG&E Assets | | |
| Barrier | Expected vs. Observed Performance | Why did the barrier not prevent the ignition event? (See ICF Codes) | Opportunity |
| Barriers that were Assessed as Opportunities | | | |
| Covered Conductor on Primary Conductors | Expected Performance: Covered conductor should lower the risk of a wildfire. Observed Performance: Barrier did not exist | A4B2C1D2 – Program limited to certain conductors | Covered wire may have reduced or prevented ignition. |
| Enhanced Powerline Safety Settings - Partial Voltage De-energization | Expected Performance: Manually operate devices when multiple SmartMeters report partial voltage outages at fuse-level or above, but upstream protective devices have not operated. Observed Performance: Barrier performed as expected | A4B1C3D1 – Coordination – nearest protective device operated first | Partial voltage alarm threshold/criteria was not met to force a partial voltage force out. |

Potential Next Steps / Associated CAP Items:

- [CAP 000129925533](#) – Review of Utility Procedure TD-2700P-26 to see if a non-conformance issue has occurred when there was no manual force-out or a possible revision to the procedure to give a definitive set time as to when a force out/de-energizing should be done.

Single Line Diagram



LEGEND



Substation



Fuse



Line Recloser



Area of Interest

Photos and Diagrams of Events



Figure 1 – Google Earth diagram of the Monte Rio 1113.



Figure 2 – Incident tree laying across primary line on August 16, 2024 taken via drone. Photo taken by the troubleshooter.



Figure 3 – Actively burning fire at Incident Location on August 16, 2024. Photos taken by the troubleshooter.



Figure 4 – View of incident tree falling towards the primary conductors on August 16, 2024. Photo taken by the VM team.



Figure 5 – Base of incident tree with internal visible decay at the failure point on August 16, 2024. Photos taken by the VM team.



Figure 6 – Additional view of the base of the tree with other signs of decay that may have been covered by moss on August 16, 2024. Photo taken by the VM team.

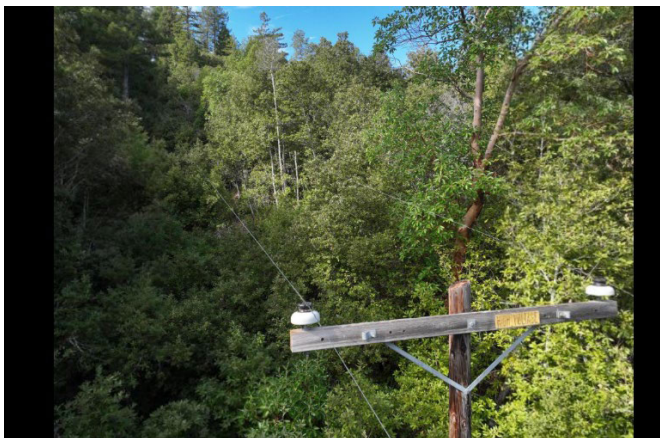


Figure 7 – Aerial view of Incident Pole (left) with surrounding vegetation at the base of the pole shown (right) on November 4, 2023. Photo taken by iHawk.

Attachments

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



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