



## Preliminary Ignition Investigation Report

|   |   |
|---|---|
| Ignition Database Index:  | 20240770N                                 |
| Electric Incident Investigation (EII) Number:   | N/A                                       |
| Incident Name:  | N/A                                       |
| PG&E Facility Ignition?   | Yes                                       |
| CPUC Reportable Ignition?   | Yes                                       |
| Date & Time of Incident:  | June 27, 2024 @ 1740 hours                |
| Street Address:   | 102 Gum Lane                              |
| City:   | Auburn                                    |
| County:   | Placer                                    |
| Latitude/Longitude:   | 38.8919570589, -121.0681697117            |
| State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA) | Local Responsibility Area                 |
| PG&E Division:  | Sierra                                    |
| High Fire Threat District (HFTD):   | Tier 2                                    |
| High Fire Risk Area (HFRA):   | Yes                                       |
| EPSS Buffer:  | No  |
| Fire Index Area (FIA):  | 300                                       |
| Fire Potential Index (FPI) Rating: FIA  | R3  |
| Fire Potential Index (FPI) Rating: Circuit  | R3  |
| Was there a PSPS event at the time of ignition?   | No  |
| Suspected Initiating Event:   | Transformer failure                       |
| Failure Driver:   | All types of equipment / facility failure |
| Failure Sub-driver:   | Transformer failure                       |
| Circuit:  | Flint 1101                                |
| Circuit Protection Zone:  | LR 40666                                  |
| Nominal Voltage:  | 750V                                      |
| Pole SAP Equipment ID:  | 100045817                                 |
| Subject to PRC 4292 Veg Pole Clearance:   | N/A                                       |
| PG&E Equipment associated with ignition:  | Transformer                               |
| EPSS enabled at time of ignition?   | Yes                                       |
| Fault Type:   | Force out                                 |
| Wire Down (Primary)?  | No  |
| Lead Agency/Agency Having Jurisdiction:   | Unknown                                   |
| Fire Size:  | 10-feet x 12-feet                         |

|   |   |
|---|---|
| <b>FAS Field Remarks<sup>1</sup>:</b>                             | Replace NG (no-good) OD (open delta) Bank & XARM. Install C/O's (cut outs). Could not submit fire report cause PICS would not upload. Fire burned dry grass 10ft X 12ft |
| <b>HAWC Summary:</b>  | N/A   |
| <b>Injuries / Fatalities / Property Damage / Media Attention:</b> | 0 / 0 / 0 / 0   |
| <b>Weather Conditions<sup>2</sup>:</b>                            | At 1740 hours near the Incident Location:<br>Temperature: 84.7°F<br>Relative Humidity: 24%<br>Wind Speed: 3.7 mph out of the West South West<br>Wind Gust: 9.9 mph      |
| <b>Red Flag Warning (RFW) / High Wind Warning (HWW):</b>          | No/No   |
| <b>911 Standby Relief Time:</b>                                   | 23 minutes  |
| <b>OIS #:</b>   | 2497935   |
| <b>ILIS #:</b>  | 24-0081513  |
| <b>FAS #:</b>   | T006431933  |
| <b>TOTL #:</b>  | N/A   |
| <b>Assigned Attorney:</b>   | N/A   |
| <b>Ignition Investigator &amp; Phone:</b>                         | [REDACTED]<br>[REDACTED]  |

<sup>1</sup> FAS Field remarks entered verbatim.

<sup>2</sup> Weather Observation Site: PG884 (Elevation 1311 ft. Approx. 2.13 miles southwest of the Incident Location): Mesowest

## Executive Summary

On June 27, 2024 at 1719 hours, Cal Fire called PG&E requesting assistance at a reported pole fire near the address on Gum Lane in Auburn, Ca. At 1726 hours, a PG&E troubleshooter was dispatched to a three-phase primary overhead segment of the Flint 1101 12kV Distribution Circuit. The troubleshooter patrolled the Flint 1101, arriving near a two-transformer mounted SAP Pole ID: 100045817 ("Incident Location" – "Pole #1") at approximately 1754 hours. The troubleshooter saw emergency personnel conducting fire suppression mop up efforts and identified a burn scar around the base of Pole #1. The troubleshooter called into the DCC at 1754 hours and requested LR 958726 (LR 958726 was operating in Switch Mode) to be opened in order to make the scene safe and isolate the 2 transformers at the Incident Location. The DCC opened LR 958726 at 1756 hours, de-energizing 88 customers. The troubleshooter observed what appeared to be a transformer failure on Pole #1 which then likely caused the ignition. The troubleshooter cut the impacted transformer in the clear to allow the DCC to close LR 958726 at 1800 hours, reducing impacted customers from 88 to seven customers. The ensuing fire was 10-feet X 12-feet in size and the fire was suppressed by Cal Fire Grass Valley. This incident occurred within a Tier 2 HFTD during R3 conditions. The responding troubleshooter wrote an Electric Corrective (EC) Priority 'A' Tag (#129139547) to replace the no-good, open delta bank, one crossarm, and install new cutouts. A PG&E crew completed all repairs early the following morning and restored power to the remaining seven customers at 0516 hours.

The incident was analyzed by an electrical engineer and a system protection engineer. They concurred that the transformer flashed at the secondary terminals and oil appears to have been released due to internal secondary arcing or secondary terminal heat. In addition, it was observed that no transformer fuses operated during the incident which would indicate that the fault was likely on the secondary side of the windings.

This incident was analyzed by an Asset Failure Analysis Engineer. They observed that a previous outage on August 18, 2022 (tree branch fell onto service, breaking wood pin), caused minor external damage to the transformer leaving a burn mark on the transformer tank, potentially compromised the internal components of the transformer.

Additionally, multiple tags were reprioritized and/or cancelled. It is suspected that due to this previous failure, and multiple unaddressed tags, the transformer ultimately failed.

The collective SMEs that analyzed this incident, concurred that internal secondary arcing, or secondary terminal heat caused the secondary terminals on the transformer to flash. Leading up to this event, there was a Priority 'E' tag (124157628) for various conditions (broken pole, rotting primary and secondary crossarms, broken insulators, secondary connection exposed) from 2022. There were also tags submitted from field personnel, separate from the inspection notifications, recommending a 'B' tag priority. This tag was reassessed several times in 2024 leading up to the failure. In April 2024 the CIRT Team finally upgraded to a Priority 'B' tag with some added conditions (cutout and fuse FDA for low liquid fuse). At the time of the failure, approximately two months later, these tags were still open.

There was no equipment collected from this incident to be analyzed.

It was a warm and sunny day on June 27, 2024 near the Incident Location. The high temperature for the day was 85.6°F at 1750 hours and the low temperature was 59.3°F at 0620 hours. The relative humidity was as high as 65% at 0630 hours and as low as 23% at 1810 hours. The strongest wind gust was 11.6 miles per hour (mph) out of the SSW at 1450 hours.

## System Protection Analysis

The Flint 1101 12kV distribution circuit downstream of LR 958726 was forced out of service by a DCC operator at 1756 hours at the request of the t-man. The Flint 1101 was enabled with EPSS at the time of the incident due to the FPI<sup>3</sup> R3<sup>4</sup> (fire potential index rating 3) conditions observed that day. There were two-line reclosers (LR 958726 & LR 40666) and one fuse (Fuse 5505) protecting the Incident Location. LR 958726 was in Switch Mode when it was forced out for the transformer failure. LR 40666 was in EPSS Mode 3 with Sensitive Ground Fault (SGF) & Down Conductor Detection (DCD) settings enabled; LR 40666 and Fuse 5505 did not operate because the incident took place at the secondary level, therefore no events were recorded. As a result of this incident, the engineering team created EPSS settings for LR 958726.

## Ignition Impact

The ignition was isolated to the vegetation at the base of Pole #1 resulting in a fire the size of 10-feet X 12-feet. There was no report of injuries, fatalities, media coverage, or property damage. The incident happened on a three-phase distribution overhead circuit impacting 88 customers for a total of 684 customer minutes.

## Sequence of Events

### June 27, 2024

1719 hours – CALFIRE calls PG&E requesting assistance at 102 Gum Lane, Auburn  
1754 hours – Troubleshooter arrives to Incident Location  
1756 hours – LR 958726 forced open  
1759 hours – Troubleshooter disconnects transformer  
1800 hours – LR 958726 close (*Customers Restored: 81*)  
2243 hours – Crew onsite for repairs

### June 28, 2024

0516 hours – Transformer replaced following repairs (*Customers Restored: Seven*)  
0519 hours – Line worker reports to control center that power is ok

## Corrective Notification Associated with Ignition

EC Priority 'A' Tag (#129139547) to replace open delta bank, crossarm, and install cut outs was completed the following day, June 28, 2024.

## Pending Work

| Type | Number | Description | Priority | Date Identified | Due Date |
|------|--------|-------------|----------|-----------------|----------|
|------|--------|-------------|----------|-----------------|----------|

<sup>3</sup> Utility Fire Potential Index (FPI) Rating: A rating to determine the risk of fire and its likely behavior. Its calculation and scale from 'R1' to 'R5' considers fuel moisture, humidity, wind speed, air temperature, and historical fire occurrence.

<sup>4</sup> Medium Fire Danger - Fire danger is so high that care must be taken using fire-starting equipment. Local conditions may limit the use of machinery and equipment to certain hours of the day.



|                  |           |   |   |               |               |
|------------------|-----------|---|---|---------------|---------------|
| EC Notification  | 124157628 | Replace broken pole, crossarm (primary and secondary), insulator. Install new cutouts and fuses with repairs to conductor (completed via 'A' tag #129139547). | B | July 25, 2022 | July 25, 2023 |
| 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

|                              |                         |   |
|------------------------------|-------------------------|---|
| <b>Source Side Structure</b> |                         |   |
| <b>Info / Inspection</b>     | <b>Most Recent Date</b> | <b>Findings</b>   |
| Install Date:                | 1954                    | Douglas Fir, Koppers Co., Class 4, Penta treated.   |
| Inspection:                  | June 12, 2024           | Identified replacement of broken pole, cross arm, and burnt conductor. EC tag #129075910 created.   |
|                              | July 25, 2022           | Inspection identified; broken pole (primary and secondary) and insulators. Requesting new cutouts and fuses and repair to conductor. EC tag #124157628 created.   |
| Patrol:                      | N/A                     |   |
| Corrective History:          | April 29, 2019          | Notification #:117119719 - Connector and down Guy repaired on April 18, 2021. Veg work completed on March 18, 2020. Multiple tags created to address damaged pole, crossarm, and equipment, however only tag that is still open is 124157628. Duplicate tags were canceled. |
| Aerial Inspection Records:   | October 7, 2019         | Sharper Shape <sup>5</sup> photos in the shared folder  |
| VM Inspection:               | N/A                     |   |
| EVM Inspection:              | N/A                     |   |
| Equipment Test:              | N/A                     |   |

<sup>5</sup> Sharper Shape is a third-party online platform that uses Live Digital Twin Software to help power transmission & distribution utilities, manage risk and create operational efficiencies.

|                      |                  |   |
|----------------------|------------------|---|
| Pole Intrusive Test: | February 1, 2016 | Pass, 100%  |
| WSIP Inspection:     | April 29, 2019   | WSIP identified incorrect connectors guy with overgrowth vegetation and a decaying crossarm (primary). EC Tag #117119719 created. |

\*Incident Location: SAP Pole ID: 100045817

### Hazard Barrier Analysis:

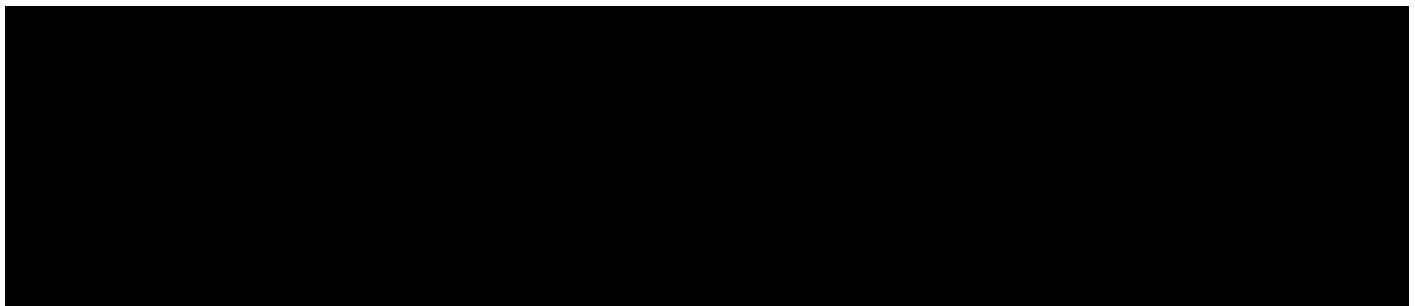
| Hazard                                     | Equipment Failure  | Sub-Hazard  | Transformer Failure   |
|--|--|---|---|
| Target                                     | Reducing Ignition Risks from Transformer Failures  |   |   |
| Barrier                                    | Expected vs. Observed Performance  | Why did the barrier not prevent the ignition event? (See <a href="#">ICF Codes</a> )              | Opportunity   |
| Barriers that Negatively Affected Ignition |  |   |   |
| Equipment Work Management                  | Expected Performance: Complete maintenance identified through patrols and inspections in timely and correct manner. (Assess this barrier if there was any overdue or pending work.); Observed Performance: Barrier did not perform as expected | [ A3B1C2D2 - Non-Conformance: Work Non-Conformance; Work Execution; Work not complete, past due ] | There were several pending, open issues for the Incident Location at the time of the ignition; Damaged primary and secondary crossarms, compromised pole, broken insulator, and secondary connection exposed. |
| Field Safety Reassessment                  | Expected Performance: Perform annual safety re-assessments of tags to document if there has been a change to field condition of non-conformance that poses increased risk to safety and repair prior to failure/ignition                       | [ A3B1C2D2 – Non-Conformance: Work Non-Conformance; Work Execution; Work not complete ]           | Tag was created on 7/25/2022 for various issues, work was given priority 'B' status & was not completed in the given time frame. Continuously FSR'd.  |

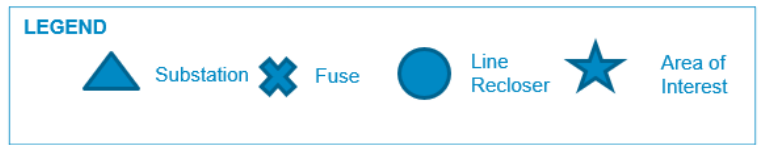
| Barriers that were Assessed as Opportunities |   |   |   |
|--|---|---|---|
| Distribution System Hardening Program        | Expected Performance: Targets transformer replacement in high wildfire risk areas and areas most impacted by PSPS.; Observed Performance: Barrier did not exist   | [ A4B2C5D2 - Strategy: Program Strategies; Inspection-Related; New program ]  | System hardening was considered for this location, however, it was not scoped in prior to the incident.   |
| Barriers that were Unknown                   |   |   |   |
| Distribution Detailed Inspection             | Expected Performance: Thorough examination of individual components, structures, and equipment through visual inspection and routine diagnostic test. OH facilities every 5 years, UG and pad-mounted every 3 years. Identify abnormal conditions on overhead facilities, such as transformer damage or deterioration. For current transformers, replace if visible damaged, failed burden test, or overloaded (TD-6314P-01); Observed Performance: Barrier performed as expected | [ A3B1C1D3 - Non-Conformance: Work Non-Conformance; Work Identification; Maintenance tag priority ineffective in preventing failure ] | There were multiple tags written for the Incident Location for various compelling, abnormal conditions. Some of those conditions had been remediated and some were still pending. |

#### Potential Next Steps / Associated CAP Items:

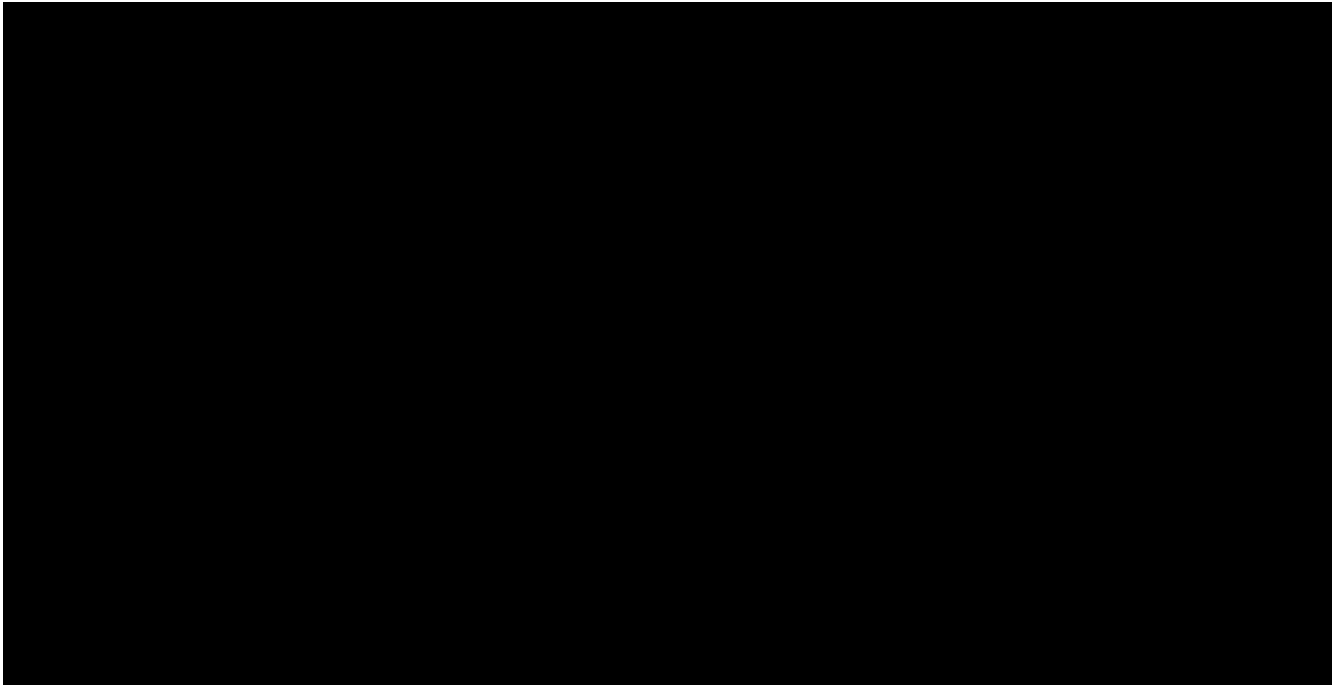
- AFA is still studying this failure to understand what caused ultimately caused it.
- Review multiple tags written for this location and their priorities.

#### Single Line Diagram





## Photos and Diagrams of Events



*Figure 1 Google Earth Pro map of Incident Location.*



*Figure 2 SAP Pole ID 100045817 with burn scar at the base of the pole. Photo taken by troubleshooter on June 27, 2024.*





*Figure 3 Pole #1 - Photo taken by troubleshooter on June 27, 2024.*



Figure 4: Burn scar at the base of Pole #1. Photo taken by troubleshooter on June 27, 2024.



*Figure 5 Aerial inspection photo taken during 2024 overhead inspection. Drone photo taken on June 12, 2024, 14 days before failure.*





*Figure 6 Aerial inspection photo taken during 2024 overhead inspection. Drone photo taken on June 12, 2024.*





*Figure 7 Aerial inspection photo taken during 2024 overhead inspection. Drone photo taken on June 12, 2024.*

## Attachments

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

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