



Preliminary Ignition Investigation Report

Ignition Database Index:	20240630
Electric Incident Investigation (EII) Number:	N/A
Incident Name:	Cement Hill Rd/Peabody Rd
PG&E Facility Ignition?	Yes
CPUC Reportable Ignition?	Yes
Date & Time of Incident:	June 11, 2024 @ approximately 1931 hours
Street Address:	near [REDACTED]
City:	Fairfield
County:	Solano
Latitude/Longitude:	[REDACTED]
State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA)	State Responsibility Area
PG&E Division:	Sacramento
High Fire Threat District (HFTD):	Tier 2
High Fire Risk Area (HFRA):	Yes
EPSS Buffer:	No
Fire Index Area (FIA):	177
Fire Potential Index (FPI) Rating: FIA	R4
Fire Potential Index (FPI) Rating: Circuit	R1
Was there a PSPS event at the time of ignition?	No
Suspected Initiating Event:	Equipment – PG&E
Failure Driver:	Utility work/Operation
Failure Sub-driver:	Improper Construction
Circuit:	Peabody 2113
Circuit Protection Zone:	Peabody 2113-LR873304
Nominal Voltage:	240
Pole SAP Equipment ID:	101565322
Subject to PRC 4292 Veg Pole Clearance:	Yes
PG&E Equipment associated with ignition:	H-type secondary connector
EPSS enabled at time of ignition?	Yes
Fault Type:	Line to Ground
Wire Down (Primary)?	No
Lead Agency/Agency Having Jurisdiction:	Customer
Fire Size:	3 meters - 0.25 Acres

FAS Field Remarks:	had a bad connection on secondary shoot sparks and start a 20 by 20 grass fire this had nothing to do with the epss outage the primary was patrolled and looked good. when I arrived on seen to the fire I looked over all connections from the ground and didn't see anything until I boomed up and got a foot away from the connection. all connections replaced and power checks good.
HAWC Summary:	10 x 10 spot at CEMENT HILL RD / PEABODY RD in Salano directly under the power lines. Spot is extinguished. EPSS enabled circuit in the area PEABODY 2113. OIS # 2482752 with 1 customer affected. DCC and HAWC Sup notified.
Injuries / Fatalities / Property Damage / Media Attention:	No injuries, fatalities, property damage or media attention reported.
Weather Conditions:	At 19:40 near the incident location: Temperature: 91.6°F Relative Humidity: 34% Wind Speed: 0.2 mph from the west Wind Gust: 2.5 mph
Red Flag Warning (RFW) / High Wind Warning (HWW):	Red Flag Warning (RFW) - No High Wind Warning (HWW) – No
911 Standby Relief Time:	33 minutes
OIS #:	2482752
ILIS #:	N/A
FAS #:	T006417459
TOTL #:	N/A
Assigned Attorney:	N/A
Ignition Investigator & Phone:	

Executive Summary

On June 11, 2024, at approximately 1936 hours, a PG&E troubleshooter was dispatched to a two-phased overhead section of the Peabody 2113 21kV distribution circuit, near Cement Hill Road in the town of Fairfield, in response to a call from CAL FIRE reporting a grass fire near PG&E facilities. The Incident Location was in a Tier 2 High Fire Threat District (HFTD) and High Fire Risk Area (HFRA) during R1 (circuit) conditions. PG&E's Enhanced Powerline Safety Settings (EPSS) were enabled for the circuit at the time of the incident.

The troubleshooter arrived on scene at approximately 1946 hours and reported a secondary connector failed near pole SAP ID # 101565322, causing a spark, resulting in a grass fire measuring 20x20 feet in size. The fire was extinguished by the nearby property owner who first noticed the flames. Prior to the incident, the property owner did not experience any power fluctuations and no SmartMeter™ abnormalities were documented. The responding troubleshooter replaced all secondary connections in the field after the incident and restored power on the same day. The failed secondary connector was retained by the troubleshooter and sent to Applied Technology Services (ATS) for failure analysis.

PG&E Meteorology data pulled from the MesoWest observation site that was approximately 4,497 feet south of the Incident Location indicates a hot day on June 11, 2024. At 1940 hours near the Incident Location, the temperature was 91.6°F, with relative humidity of 34%. Winds were 0.2 miles per hour (mph) out of the west with gusts up to 2.5 mph. There were no Red Flag or High Wind Warnings in effect nor did this ignition occur during a Public Safety Power Shutoff (PSPS) event.

Prior to the incident, there were no outstanding electric or vegetation tags for pole SAP ID # 101565322.

Applied Technology Services (ATS)

The failed secondary connector was shipped to PG&E's Applied Technology Services (ATS) and received on June 18, 2024 for further analysis. ATS identified the material as an H-connector which joined copper and aluminum conductors (see Figure 4). Per ATS analysis, the ignition was caused by the dripping of hot material from the failed H-connector. ATS visual inspection of the material revealed significant thermal damage to the connector casing and partial damage to the copper strands. CT scan revealed a gap within the H-connector caused by inadequate crimping around the aluminum conductors feeding the customer (see Figure 5). The air gap is likely to have caused high electrical resistance leading to the ultimate failure.

Asset Failure Analysis (AFA)

An Asset Failure Analysis (AFA) engineer was assigned to complete an Extent of Condition to analyze this ignition involving an equipment caused CPUC reportable ignition in an HFTD. AFA indicates that the H-type connector in this incident was originally installed on March 30, 2009 and not repaired until the ignition. Like ATS' analysis, AFA indicated that inadequate crimping left a considerable gap within the H-connector around the aluminum conductors. This may have caused improper electrical interface which can create hot spots at operation near rated load capacity.

System Protection Analysis

The Peabody 2113 12kV Distributions Circuit was enabled with Enhanced Powerline Safety Settings (EPSS) at the time of the incident, however the ignition occurred on the secondary voltage level and EPSS is not capable of detecting the fault.

Ignition Impact

The ignition resulted in a grass fire measuring 20x20 feet in size. A sustained outage lasting 112 minutes occurred, affecting a single customer. No injuries, property damage or media coverage associated with this incident was identified.

Sequence of Events

June 11, 2024

- 1919 hours – First Irwin Time
- 1931 hours – PG&E receives a call from CAL FIRE with reports of a grass fire near PG&E facilities.
- 1936 hours – Troubleshooter was dispatched to the scene.
- 1946 hours – Troubleshooter arrived onsite and reports a bad secondary connection caused sparks resulting in a 20x20 foot grass fire.
- 2123 hours – Troubleshooter replaced all secondary connections in the field and restored power.

Corrective Notification Associated with Ignition

No corrective tags were created for this event. The responding troubleshooter replaced all secondary connections in the field after the incident and restored power on the same day.

Pending Work

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	N/A				
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

Info / Inspection	Most Recent Date	Findings
Install Date:	March 30, 2009	Class 4 – 40-goot wood pole – per EDGIS
Inspection:	June 18, 2021	GO165 Compliance Inspection – No declarations items reported.
	May 1, 2023	GO165 Compliance Inspection – The inspector identified that there was no pole number on the structure and a new pole barcode was installed which created a map correction notification # 126025118. Additionally, the inspector identified a Third-party utility infraction at the location with included a broken/exposed ground wire. On July 13, 2023, a Third-Party Hazard Notification # 126024778 was sent to AT&T regarding the issue. An additional notification # 126580439 was sent to Comcast in conjunction with the notification to AT&T. No declarations items reported with PG&E equipment.
Patrol:	N/A	
Corrective History:	N/A	

Aerial Inspection Records:	August 27, 2019	Per Sharper Shape – No compelling abnormal conditions could be identified in aerial photos (see figure X)
VM Inspection:	N/A	
EVM Inspection:	N/A	
Equipment Test:	N/A	
Pole Intrusive Test:	Nov. 5, 2009	Pass – 100% wood strength – visual inspection only since pole was put in service 7 months prior to inspection.
WSIP Inspection:	April 30, 2019	There are no compelling abnormal conditions for the pole, equipment, and its associated spans.

*Incident Location: SAP ID: 101565322

Hazard Barrier Analysis:

Hazard	Utility work / Operation	Sub-Hazard	Connector Failure (Secondary Distribution)
Target	Failed secondary connector caused a fire measuring 20'x20' vegetation fire in a Tier 2 HFTD.		
Barrier	Expected vs. Observed Performance	Why did the barrier not prevent the ignition event? (See ICF Codes)	Opportunity
Other Barriers Assessed			
Distribution Detailed Inspection	Expected Performance: Thorough examination of individual components to identify burnt, corroded, incorrectly installed, equipment or deteriorated insulation. Observed Performance: Unknown	A1B1C2D2 – Corrosion not visually apparent	The condition of the H-type connector may not have been visible during a normal inspection
Proper Construction & Installation	Expected Performance: Manufacturing and installation guidelines for connectors.; Observed Performance: Unknown	A3B1C2D3 – Work not performed in accordance to standard	Possible inadequate crimping around the aluminum conductors feeding the customer may have attributed to ignition.
Pole Clearing	Expected Performance: Limit fire spread potential near poles for a PG&E equipment involved ignition event within State Responsibility Areas, poles with non-exempt equipment, and	According to Public Resource Code (PRC) 4292, to limit the spread of fire near PG&E poles, property vegetation clearance is needed.	On June 18, 2024, a VM inspection was conducted at the Incident Location. The inspector found the burn scar

	<p>selected poles outside of the regulations of PRC 4292. Clear 10-ft radius around subject poles from 0-8 feet above ground level.</p> <p>Observed Performance: Unknown</p>		<p>approximately 12 feet from the pole, outside of the PRC 4292 10-foot cylinder (see Figure 6). Since there was regrowth found, the location was mechanically cleared and treated with herbicide.</p>
Barriers that were Assessed as Opportunities			
Infrared Inspections	<p>Expected Performance: Infrared inspections to reduce potential for component failures and facility damage.</p> <p>Observed Performance: Unknown</p>	A1B1C2D3 – Fatigue damage not visually apparent	An infrared inspection may have identified the excessive heat from the improper electrical interface.

Potential Next Steps / Associated CAP Items:

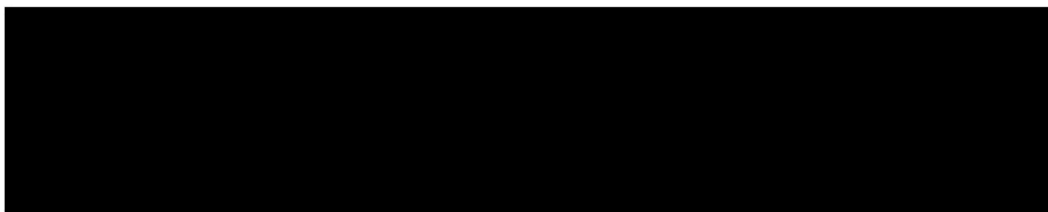
Prior H-type connector failures have been attributed to inadequate crimping, advanced corrosion, insufficient/thermally damaged tape application.

AFA has recommended a tailboard to crews with 5MM to ensure that the entire restoration, construction, and contract teams are aware of the uptick in ignition incidents and some of the misses that led to the ignition regarding H-type connector installation (proper number of crimps), cable preparation, and proper taping. Also, a reminder that the preferred method of connection is fired wedges, per distribution standards 041010 and 028852.

A Corrective Action [CAP #129525814](#) has been submitted to address this issue.

Additionally, non-exempt equipment (lightning arrestor) was identified on the subject pole in a State Responsibility Area. According to Public Resource Code (PRC) 4292, to limit the spread of fire near PG&E poles, property vegetation clearance is needed. Based on my review of the photo taken by the troubleshooter (see Figure 3), a question of clearance was raised to Vegetation Management (VM). On June 18, 2024, a VM inspection was conducted at the Incident Location. The inspector found the burn scar approximately 12 feet from the pole, outside of the PRC 4292 10-foot cylinder (see Figure 6). Since there was regrowth found, the location was mechanically cleared and treated with herbicide.

Single Line Diagram



LEGEND



Substation



Fuse



Line
Recloser



Area of
Interest

Photos and Diagrams of Events

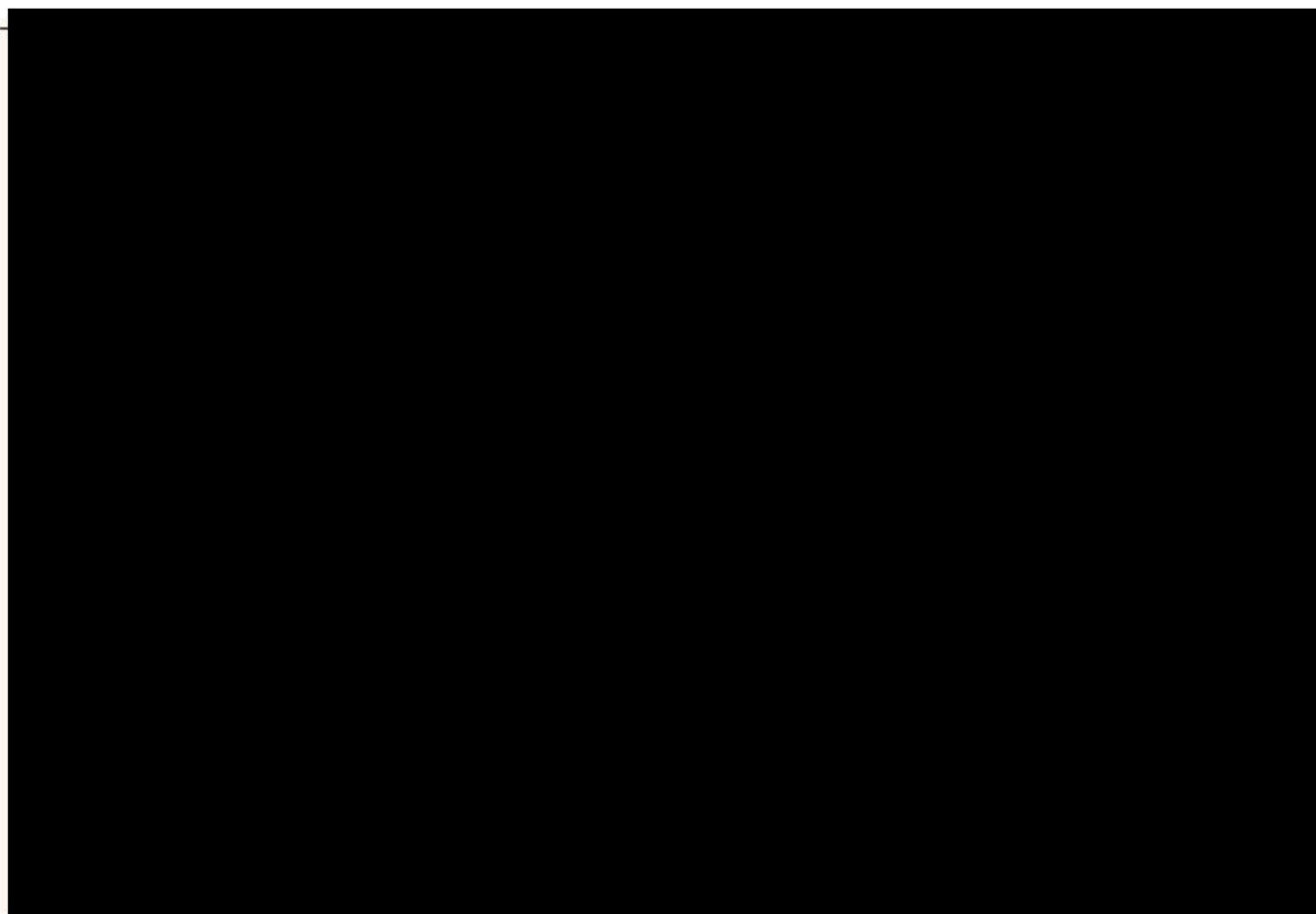


Figure 1 Image from Maps+ from troubleshooter's phone. Incident location near pole SAP ID 101565322.



Figure 2 Photo taken by troubleshooter of failed secondary connector.



Figure 3 Photo depicts burn area at Incident Location taken by troubleshooter.

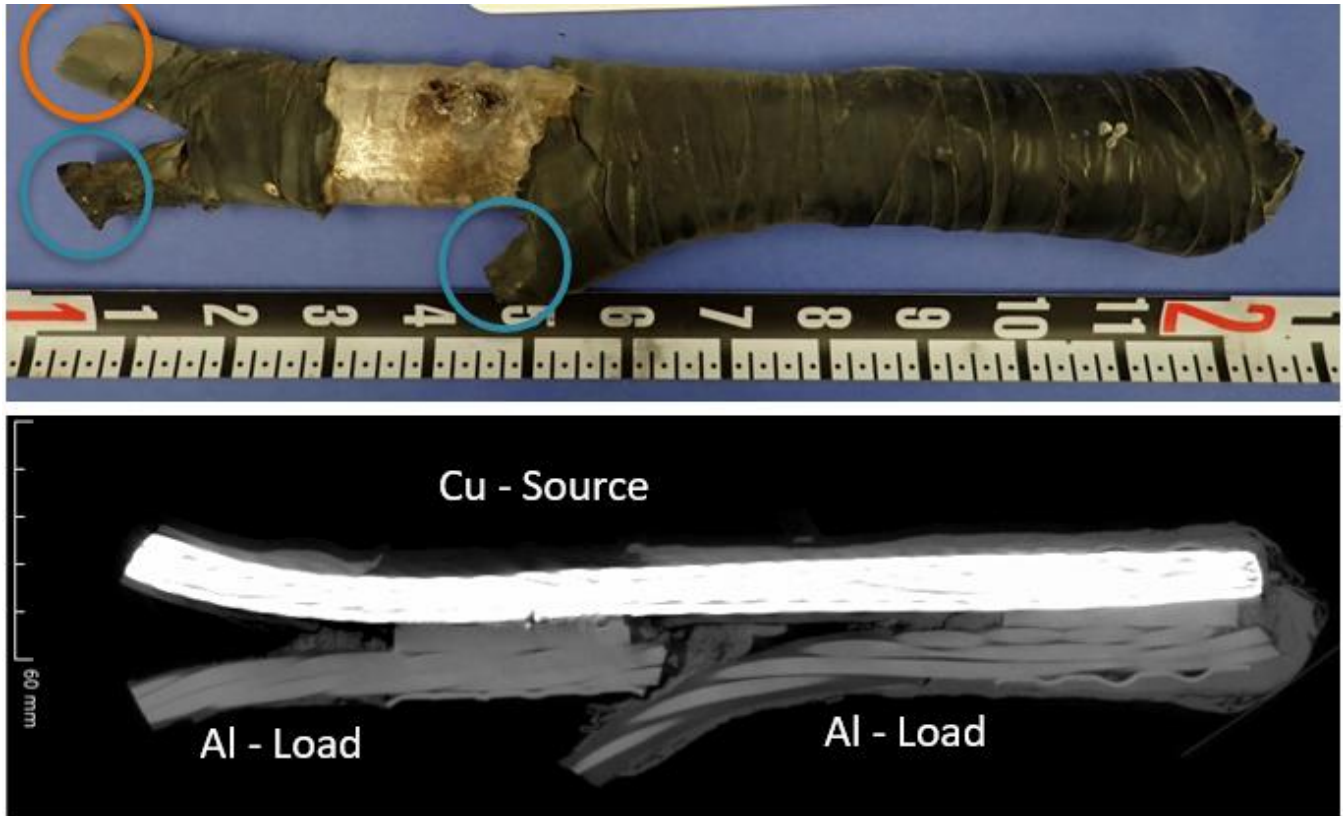


Figure 4 Photos of failed connector taken by ATS. The red circle shows the source copper conductor. The blue circle shows the load aluminum conductor. CT scan image of the connector at the bottom.

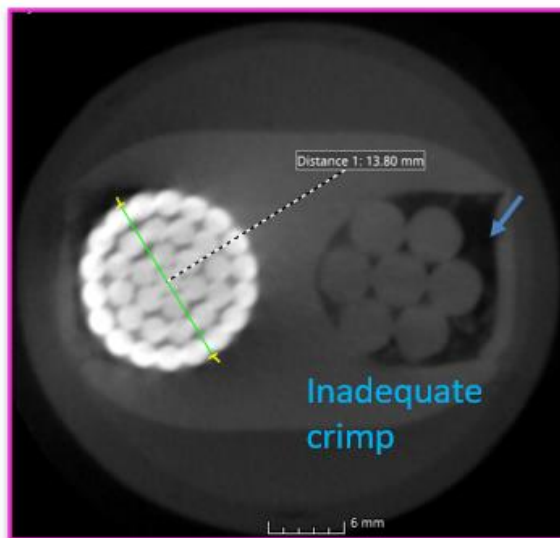
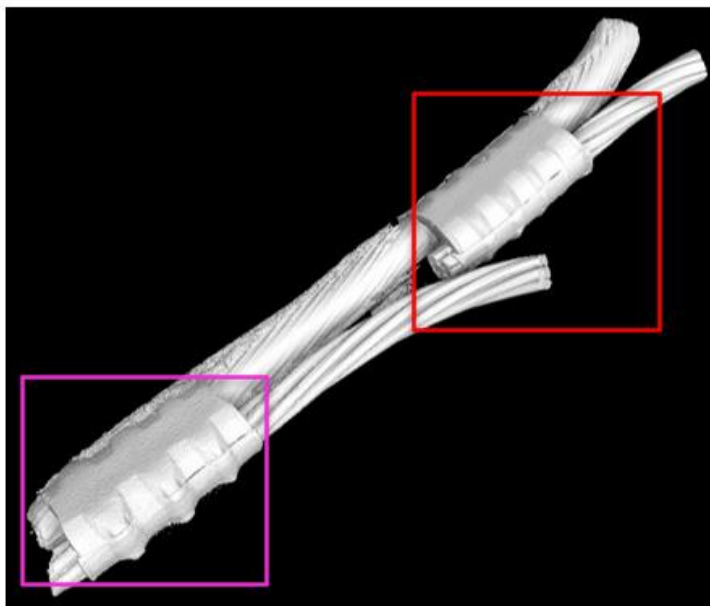
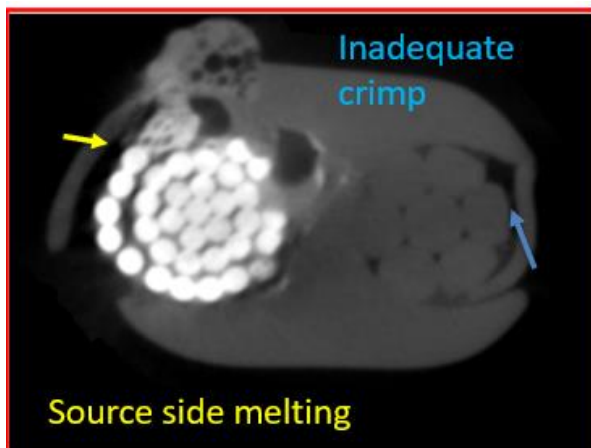


Figure 5 Images taken by ATS of failed connector. CT scan depicted inadequate crimping. Aged copper patina indicating prolonged heat exposure.



Figure 6 Image provided by VM inspector depicting burn scar in relation to pole SAP ID # 101565322.



Figure 7 Photos taken by VM inspection of Incident Location depicting burn scar in relation to pole SAP ID # 101565322.

Attachments

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

[REDACTED]

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