



Preliminary Ignition Investigation Report

Ignition Database Index:	1082
Electric Incident Investigation (EII) Number:	N/A
HAWC Incident Name:	N/A
PG&E Facility Ignition?	Y
CPUC Reportable Ignition?	Y
Date & Time of Incident:	July 6, 2022 at approximately 0640 hours
Street Address:	Near [REDACTED]
City:	Redding
County:	Shasta
Latitude/Longitude:	[REDACTED]
PG&E Division:	North Valley
High Fire Threat District (HFTD):	HFRA "Non-Tier Buffer" Zone
Fire Index Area:	246
Fire Potential Index (FPI) Rating:	R3
Was there a PSPS event at the time of ignition?	N
Failure Driver:	Contact from Object
Failure Sub-driver:	Animal Contact
Circuit:	Jessup 1103, 10344-1103
Circuit Protection Zone:	Jessup 1103 LR 1540
Nominal Voltage:	12kV
PG&E Equipment associated with ignition:	Transformer mounted on pole SAP ID 101494186
EPSS enabled at time of ignition?	Y
Fault Type:	Line to Ground
Wire Down (Primary)?	N
MAVF Score	TBD
Lead Agency/Agency Having Jurisdiction:	N/A
Fire Size:	Between 1 and 3 meters, 5 feet x 10 feet per troubleman
FAS Field Remarks:	No good (NG) transformer (TX) crew to replace
HAWC Summary:	N/A
Injuries / Fatalities / Property Damage / Media Attention:	No injuries/Fatalities/Property Damage/Media Attention
Weather Conditions:	68.0F. Wind speeds at 3.5 MPH.
Red Flag Warning (RFW) / High Wind Warning (HWW):	RFW - N HWW - N
911 Standby Relief Time:	N/A
OIS #:	1749656
ILIS #:	22-0082139
FAS #:	T005672308

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

Executive Summary

On July 6, 2022 at approximately 0640 hours, PG&E was notified of an outage and ignition near [REDACTED] in the City of Redding. The ignition occurred on the Jessup 1103 12kV distribution circuit (see Figure 1) in a High Fire Risk Area (HFRA) “Non-Tier Buffer” Zone during R3 conditions. PG&E’s Enhanced Powerline Safety Settings (EPSS) were enabled for this circuit during the date of the event.

Two troublemen were dispatched in response to the outage after Line Recloser (LR) 1540 detected a fault and opened. Troubleman #1 arrived on scene at 0715 hours and troubleman #2 arrived on scene at 0720 hours. Both PG&E first responders located scorched marks to the grass surrounding the base of pole SAP ID 101494186 (Subject Pole, see Figure 2). LR 770356 was then manually opened so that the troublemen could safely patrol the incident location and nearby area/spans. As part of the patrol, troubleman #1 observed and reported an unrelated blown surge arrestor downstream at transformer (CGC #119105642262) near meter (MTR [REDACTED] and mounted on pole SAP ID 103132301 (located eight spans to the southwest on Milky Way/Holstein Lane and deemed as unrelated to event). Troubleman #2 identified and reported a squirrel carcass on top of the transformer (CGC #119115842327, Incident Transformer) mounted on the Subject Pole for meter [REDACTED] on Churn Creek Road (see Figure 3). Initial analysis indicates the squirrel came into contact with the Incident Transformer causing the equipment to arc. Sparks resulting from the arc then ignited the receptive fuel bed below the pole. The fire measured approximately 5 feet x 10 feet and was extinguished by the customer (see Figure 4). There are no known indications as to what caused the blown surge arrestor that was discovered during the patrol. Weather was not a factor and per troubleman #1, the surge arrestor damage was prior to this incident.

Discussion with engineering from Asset Failure Analysis, Distribution Construction Standards and Work Method, and Electric Standards and Strategy all align that the surge arrestors appears to have functioned properly but due to an unrelated/unknown event downstream and not associated with the squirrel contact at the incident location on July 6, 2022.

PG&E Meteorology data pulled from the MesoWest observation site that was approximately 1.75 miles northeast of the incident location indicates a cloudy morning with temperatures at 68.0F and relative humidity of 64%. Winds registered 3.5 Miles Per Hour (MPH) from the southeast at the approximate time of the incident. There were no Red Flag or High Wind Warnings in effect nor did this ignition occur during a Public Safety Power Shutoff (PSPS) event.

As a result of this incident and the patrol, two priority “A” Electric Corrective (EC) tags were created. EC tag (#124003550) was created to replace the decaying Subject Pole, the damaged Incident Transformer and to adjust sag of the primary conductor (see Figure 5). EC tag (#124003990) was created to remove the blown surge arrestors on the transformer located on Milky Way/Holstein Lane (unrelated to ignition) (see Figure 6). The tag indicates surge arrestors are not required at this location. Repairs were completed by a PG&E Crew on July 6, 2022 along with the eventual restoration of power to 665 customers.

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The Incident Transformer serves one customer. A historical view of the transformer's monthly peaks on Palantir Foundry does not show any abnormal peak readings on the date of the incident or as far back as from April 2019. There are no overloaded counts during this time span and currently displayed on the Foundry dashboard is a loading of 35%. The transformer located on Milky Way/Holstein Lane displays a loading of 33% with no history of overloaded counts.

The Subject Pole is made from a Western (Ponderosa) Pine and was originally installed in 1954. There are no Wildfire Safety Inspection Program (WSIP) inspection records for the pole. However, in accordance with electric compliance (GO165 Compliance), the pole was most recently inspected on July 22, 2020. The GO165 Compliance Inspection reported three primary splices present but only one splice being the highest number of splices in a single phase of conductor. Otherwise, there were no equipment damage, vegetation issues or compelling abnormal conditions to report for the pole (see Figure 7). Neither the Subject Pole or pole SAP ID 103132301 have any historical corrective notifications. Pole SAP ID 103132301 was also recently inspected on July 22, 2020 with the GO165 Compliance Inspection identifying no risk or concerns to equipment or vegetation related issues.

EPSS Analysis

PG&E's Distribution Engineering team confirmed that EPSS was enabled for the Jessup 1103 circuit and the automatic devices on the circuit at the date/time of ignition. This ignition occurred in the HFRA Non-Tier Buffer. Per engineering and the normal mode/settings programmed, LR 1540 detected the line to ground fault and operated as intended. No partial voltage alarm was detected. The threshold for the upstream protective device to operate required a timed delay of 18 second with a fault current of at least 37.4 amps (A). LR 1540 registered 837A to the phase, 814A to ground and tripped within approximately 0.06 seconds.

Ignition Impact

This ignition on July 6, 2022, resulted in a fire that was approximately 5 feet x 10 feet in size. The associated outage affected 665 customers for a total of approximately 105 minutes. PG&E is not aware of any injuries, fatalities, property damage or media attention.

Sequence of Events

July 6, 2022

- 0640 Hours: LR 1540 opened. First No Light (FNL). A total of 665 customers lost power.
- 0650 Hours: Troubleman #1 dispatched.
- 0652 Hours: Troubleman #2 dispatched.
- 0715 Hours: Troubleman #1 arrived onsite.
- 0720 Hours: Troubleman #2 arrived onsite.
- 0738 Hours: Troublemens opened LR 770356.
- 0812 Hours: Troubleman #1 reports blown surge arrestor near transformer (CGC #119105642262). Troubleman #2 reports squirrel on top of transformer (CGC #119115842327). CGC #119115842327 is taken offline.
- 0823 Hours: LR 1540 closed. Power restored to 538 customers.

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- 0827 Hours: LR 770356 closed. Power restored to 125 customers.
- 1041 Hours: Restoration crew arrives onsite.
- 1112 Hours: Transformer at [REDACTED] connected. Power restored to one customer.
- 1647 Hours: Transformer at [REDACTED] connected. Power restored to last remaining customer.

Corrective Notification Associated with Ignition

Two priority “A” EC tags were created as a result of the ignition and the patrol of the area:

- EC tag (#124003550) to replace decaying pole SAP ID 101494186, the damaged transformer, and to adjust sag of conductor.
- EC tag (#124003990) to remove unnecessary surge arrestors for transformer mounted on pole SAP ID 103132301 (unrelated to ignition).

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:	January 1, 1954	Subject Pole - 55-foot, Western (Ponderosa) Pine, Class 2
Inspection:	July 22, 2020	GO 165 Compliance Inspection shows no equipment damage, vegetation issues or compelling abnormal conditions to report for Subject Pole. Inspection did note a total of three splices but only with one splice being the highest number of splices in a single phase of conductor. There are no splices crossing over major roadways.
Patrol:	N/A	
Corrective History:	N/A	
Aerial Inspection Records:	N/A	No aerial inspection/photos available.
VM Inspection:	N/A	
EVM Inspection:	N/A	
Equipment Test:	N/A	

Pole Intrusive Test:	August 31, 2010	Pole detail report for Subject Pole indicates passing results with the following conditions: Fair pole top and pole bottom condition with wood strength testing at 100%.
WSIP Inspection:	N/A	No WSIP Inspection available.

*Incident Location: Subject Pole SAP ID 101494186

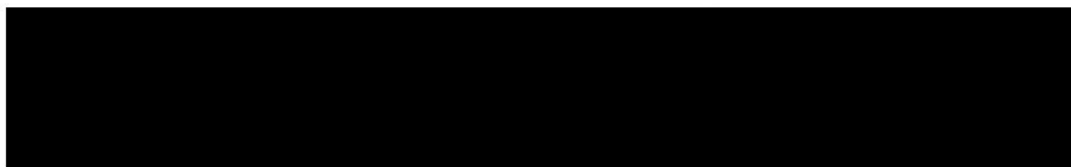
Hazard Barrier Analysis:

Hazard	Animal				
Target	Squirrel Contacting PG&E Assets				
Barrier	Objective	Expected Performance	Did Barrier Perform as Expected	Did Barrier Contribute to Incident	Defect
Patrol & Inspection (P&I) Records	Identify any nonconformances with poles or lines.	Inspection or patrol would identify any issues with PG&E equipment.	Yes No equipment or vegetation issues identified. Splices on span did not present a hazard.	No	Incident was due to animal contact not equipment failure.
Enhanced Powerline Safety Settings (EPSS)	De-energize sections of the distribution grid when a fault is experienced to make the line safe.	De-energize sections of the distribution grid until restored after visual inspection.	Yes LR 1540 detected the fault and operated as intended.	No	None. Sparkling and arcing will still cause an ignition.
Animal Protection/Guards	Protect PG&E equipment from animal contact	Prevent animals from creating electrical faults between energized components with physical barriers.	N/A No guards installed.	Yes	Ignition was due to animal contact with PG&E assets.

Potential Next Steps / Associated CAP Items:

- None

Single Line Diagram



LEGEND



Substation



Fuse



Line
Recloser



Area of
Interest

Photos and Diagrams of Events

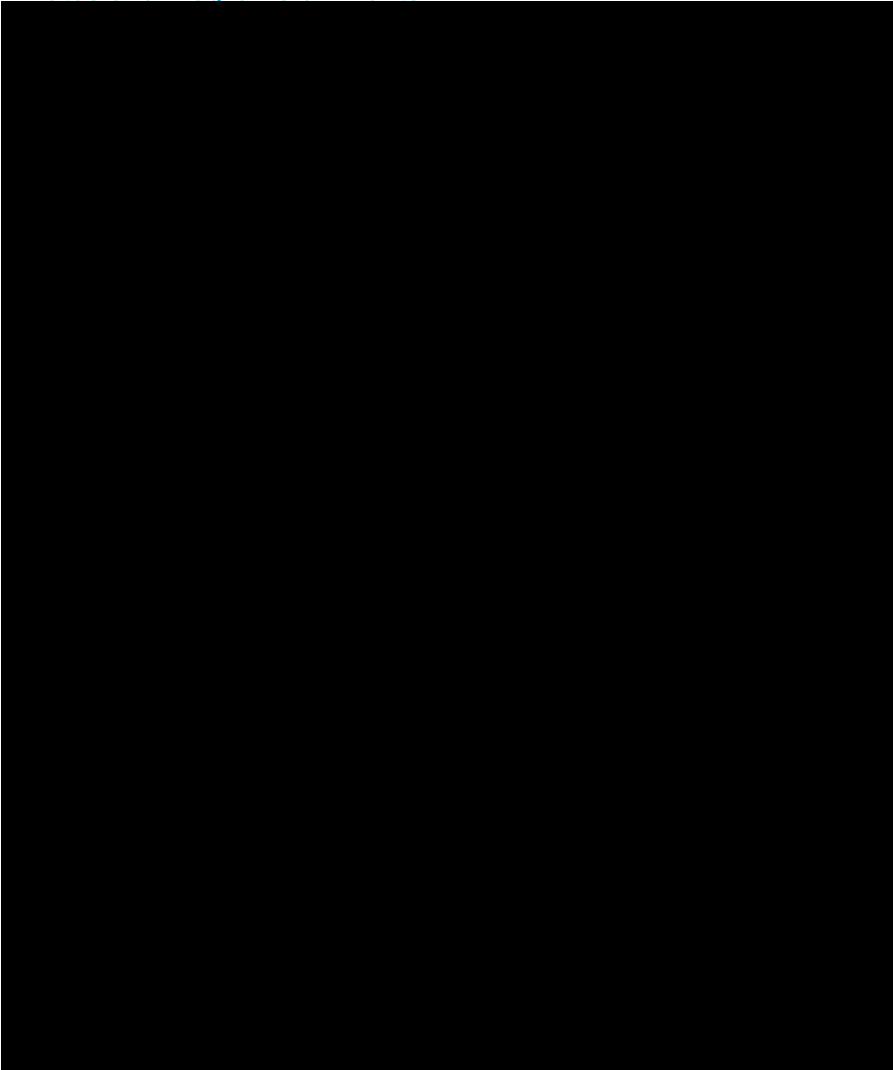


Figure 1 – EDGIS diagram of Jessup 1103 12kV. Fire is located at the base of Subject Pole.



Figure 2 – Photo of Subject Pole on date of the incident. Taken by the troubleman.

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Figure 3 – Photo of Incident Transformer mounted on Subject Pole (left) and carcass of squirrel found on date of the incident (right). Taken by the troubleman.

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Figure 4 – Photo of 5' x 10' burn mark at the base of Subject Pole on date of the incident. Taken by the troubleman.



Figure 5 – Photo of conductor sag on date of incident. Taken by the troubleman.

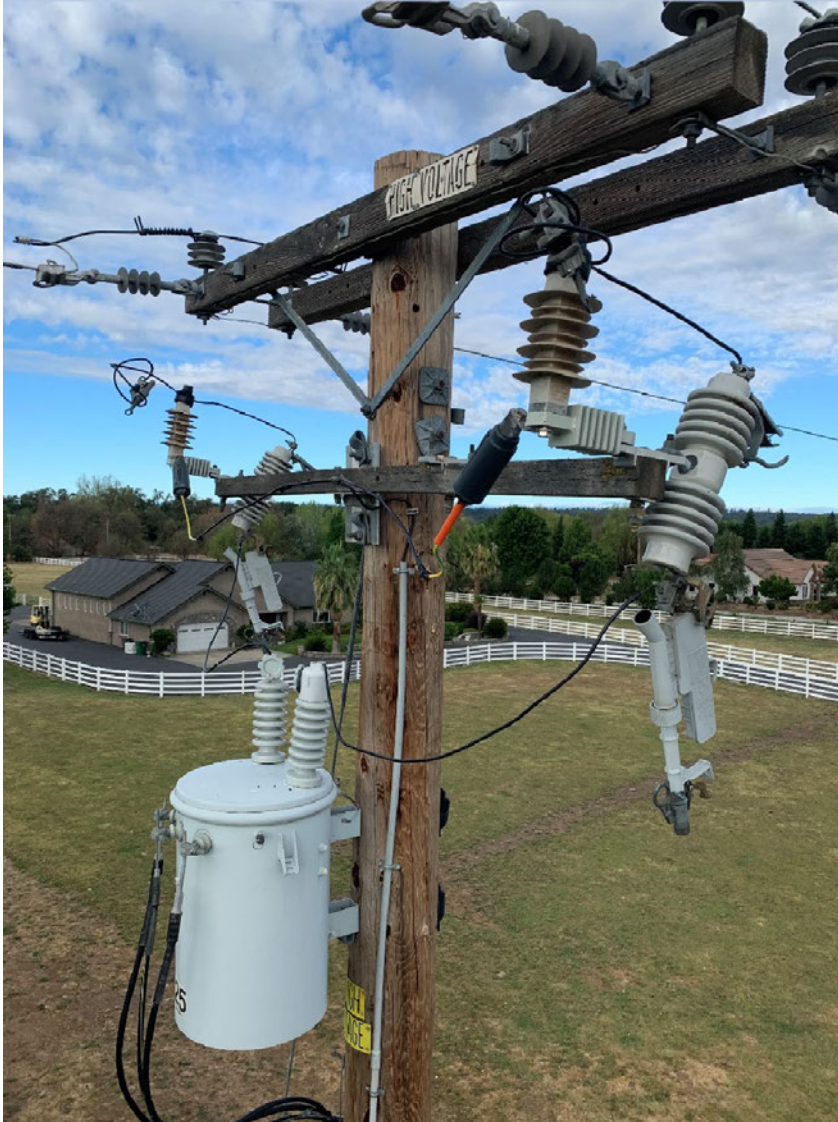


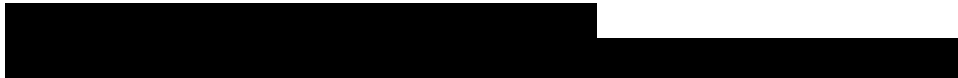
Figure 6 – Photo of blown surge arrestors for pole SAP ID 103132301 on date of the incident. Pole is located eight spans away from incident location. Taken by the troubleman.



Figure 7 – Photo of Subject Pole on July 22, 2020. Taken from GO165 Compliance Inspection.

Attachments

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



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