



Preliminary Ignition Investigation Report

Ignition Database Index:	20240753
Electric Incident Investigation (EII) Number:	N/A
Incident Name:	Morro - 25 Jun 2024
PG&E Facility Ignition?	Yes
CPUC Reportable Ignition?	Yes
Date & Time of Incident:	June 25, 2024 @ 2013 hours
Street Address:	In the vicinity of 10450 Morro Road, Lewis Highway 41 and Toloso Road.
City:	Atascadero
County:	San Luis Obispo
Latitude/Longitude:	35.456902, -120.687541
State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA)	Local Responsibility Area (LRA)
PG&E Division:	Los Padres
High Fire Threat District (HFTD):	Tier 2
High Fire Risk Area (HFRA):	Yes
EPSS Buffer:	No
Fire Index Area (FIA):	575
Fire Potential Index (FPI) Rating: FIA	R3
Fire Potential Index (FPI) Rating: Circuit	R4
Was there a PSPS event at the time of ignition?	No
Suspected Initiating Event:	Utility work / Operation
Failure Driver:	Utility work / Operation
Failure Sub-driver:	Equipment failure - Other
Circuit:	Atascadero 1103
Circuit Protection Zone:	Atascadero 1103440856
Nominal Voltage:	12kV
Pole SAP Equipment ID:	SAP Pole ID: 101932126
Subject to PRC 4292 Veg Pole Clearance:	No
PG&E Equipment associated with ignition:	Connector
EPSS enabled at time of ignition?	Yes

Fault Type:	Force out
Wire Down (Primary)?	No
Lead Agency/Agency Having Jurisdiction:	The Atascadero Fire Department
Fire Size:	100-foot by 100-foot spot (based on HAWC summary)
FAS Field Remarks:	Replace DDE and buck arm all connections and associated hardware
HAWC Summary:	Resources responded to a vegetation fire in the area of Morro Rd x San Gabriel Rd in San Luis County. The fire was last reported as a 100 x 100 spot. The fire has been contained according to the IC. There was an outage on the EPSS enabled ATASCADERO 1103 (OIS# 2495934) impacting 1 customer in a Tier 2. No notifications were made due to the fire being contained to a small spot. No additional threats or outages were reported at the time of incident closure. Closing barring any significant changes.
Injuries / Fatalities / Property Damage / Media Attention:	No/No/No/No
Weather Conditions:	It was fair and mostly dry day, 76.8° @ 2030 hours on June 25th, 2024, near the incident location.
Red Flag Warning (RFW) / High Wind Warning (HWW):	No/No
911 Standby Relief Time:	34 Minutes
OIS #:	2495934 TR7040288
ILIS #:	24-0080559
FAS #:	T006429972
TOTL #:	N/A
Assigned Attorney:	N/A
Ignition Investigator & Phone:	Dominic Canning D0CV – (559) 981-4213

Executive Summary

On June 25, 2024, at approximately 2013 hours the Atascadero Fire Department (FD), called for help from PG&E due to a fire located in the vicinity of 10450 Morro Road, Lewis Highway 41 and Toloso Road, Atascadero CA. At approximately 2029 hours, PG&E dispatched a troubleshooter to the incident location. The ignition occurred on a three-phase primary overhead segment of the Atascadero 1103 12kV Distribution Circuit (see Figures 1 and 2), in Tier 2 High Fire Threat District (HFTD), High Fire Risk Area (HFRA), Local Responsibility Area (LRA), during Fire Potential Index (FPI) R4 conditions. PG&E's Enhanced Powerline Safety Settings (EPSS) were enabled for this circuit at the time of the incident.

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The PG&E troubleshooter arrived on the scene at approximately 2041 hours and observed a fire on the side of the mountain. The troubleshooter indicated that the fire department showed him videos of our equipment sparking and requested that the Distribution Operator (DO) de-energize. Arcing was visible at the jumper on the dead-end bolted clamp shoe attached to the insulator at the top of the line-and-buck pole (SAP Pole ID: 101932126), (see Figures 3, 4, 5, and 6).

The fire is listed as the "Morro - 25 Jun 2024" fire in the Hazard Awareness Wildfire Command (HAWC) fire activity report. The ensuing fire had spread to about 100-foot by 100-foot spot (based on the HAWC summary) in size and was suppressed by the Atascadero Fire Department on June 25, 2024, (see Figure 6).

The PG&E repair crew arrived onsite at 2302 hours to replace all cross-arms and associated hardware on SAP Pole ID: 101932126. All repair work was completed by the PG&E Crew at 0445 hours on June 26, 2024.

Meteorology data pulled from the MesoWest weather observation site that was approximately one-mile northeast of the Incident Location indicating it was a fair and mostly dry day at 76.8°F with a relative humidity of 24%. Winds registered 2.7 Miles Per Hour (MPH) with gusts up to 4.9 MPH at the approximate time of the incident. Relative humidity was as high as 57% at 0620 hours and as low as 19% at 1900 hours.

Extent of Condition Summary

Asset Failure Analysis (AFA).

While the direct cause of the failure cannot be determined, per ATS analysis, the ignition was caused by the dripping of molten material from a failed H-connector, connecting the Copper jumper to an Aluminum Conductor Steel-Reinforced (ACSR) conductor. Inspection of the collected material shows significant thermal damage and loss of material on the connector, mostly concentrated around the aluminum conductor.

The cross-arm was rebuilt in 2019 by a contractor with new insulators, connectors, and jumpers. The connector subsequently failed five years later. The suspected cause is most likely poor workmanship. This type and size of connector need four crimps instead of the three that were done. H-type connectors are a very reliable connector when installed properly, but there has been an uptick in failures over the past few years that have been attributed to workmanship issues. Most of these new failures have failed within five years of installation.

Applied Technology Services (ATS).

The fire was ignited by molten material dripping from a failed H-connector that linked the copper jumper to the Aluminum Conductor Steel-Reinforced (ACSR) conductor. An inspection of the collected materials revealed extensive thermal damage and material loss on the connector, particularly around the aluminum conductor. Although workmanship in the form of inadequate crimping may have contributed to the failure, it is not known if it was a direct cause of the failure. The sister connectors did not exhibit problems like corrosion, loose connection, or the ingress of foreign materials hindering the electrical flow, (see Figures 7 and 8). The exact cause of the failure remains unknown at this time.

System Protection Analysis

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PG&E's Distribution Asset Planning team confirmed that Enhanced Powerline Safety Settings (EPSS) were enabled for the Atascadero 1103 12kV distribution circuit at the time of the ignition. On June 25, 2024, Line Recloser (LR) 440856 was EPSS-enabled, set to Mode 3, with Sensitive Ground Fault (SGF) set and Down Conductor Detection (DCD) enabled, although it did not trip on these targets. A Force Out (FO) fault occurred when a troubleshooter patrolled the line and confirmed arcing, then contacted the DO to open LR 440856, near pole SAP Pole ID: 101932126. The DO opened LR 440856 via Supervisory Control and Data Acquisition (SCADA), the event data was captured when the LR 440856 opened. LR 440856 did not capture any data prior to it being opened as the EPSS minimum to trip conditions were not met. Additionally, LR A06 and CB 1103 did not capture any event data. No Partial Voltage (PV) alarms were registered for this ignition. This fault was recorded as a Series high impedance fault with arcing, no ground fault component.

Ignition Impact

This ignition on June 25, 2024, resulted in a vegetation fire that was 100-foot by 100-foot spot (based on HAWC summary). The associated outage from this fire affected a total of 562 customers for a total of 511 customer minutes each. PG&E is not aware of any injuries, fatalities, media attention, or property damage associated with this ignition.

Sequence of Events

June 25, 2024

- 2013 hours: First event - First No Light (FNL) – Call from the FD requesting help.
- 2015 hours: Atascadero FD onsite
- 2029 hours: Troubleshooter dispatched.
- 2041 hours: Troubleshooter arrives onsite.
- 2123 hours: DO open LR 440856 via SCADA, multiple SmartMeter™ auto-generated outage reports began to come through
- 2124 hours: The Troubleshooter requests that the Distribution Operator (DO) de-energize the line, 562 customers were affected by the outage.
- 2210 hours: PG&E Repair crew dispatched.
- 2302 hours: PG&E Repair crew arrives onsite.

June 26, 2024

- 0444 hours: LR 440856 Closed – all 562 customers' power restored.
- 0445 hours: PG&E Repair has completed all work.

Corrective Notification Associated with Ignition

LC priority "A" Tag (#129127893) was created to replace all cross-arms and associated hardware on SAP Pole ID: 101932126. All repair work was completed by the PG&E Crew at 0445 hours on June 26, 2024.

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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

Source Side Structure		
Info / Inspection	Most Recent Date	Findings
Install Date:	January 1, 1951	Douglas Fir – Class 5 – Height 35'
Inspection:	June 17, 2022	GO165 Inspection – No declaration items reported
	N/A	
Patrol:	N/A	
	N/A	
Corrective History:	June 25, 2024	LC priority "A" Tag (#129127893) was created to replace all cross-arms and associated hardware on SAP Pole ID: 101932126.
Aerial Inspection Records:	May 28, 2019	SAP Pole ID: 101932126 - No abnormal conditions visible, (see Figure 9).
VM Inspection:	N/A	
EVM Inspection:	N/A	
Equipment Test:	N/A	
Pole Intrusive Test:	June 20, 2022	Inspection Result = Pass (New PTT reports do not provide %).
WSIP Inspection:	May 4, 2019	There were no compelling abnormal conditions reported

*Incident Location: SAP Pole ID: 101932126

Hazard Barrier Analysis:

Hazard	Utility work / Operation	Sub-Hazard	Equipment failure - Other Connector Failure (Primary Distribution)
Target	Arcing was visible on PG&E Assets, igniting a Fire.		

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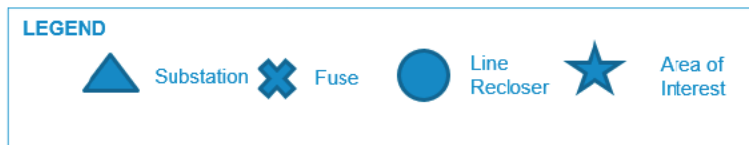
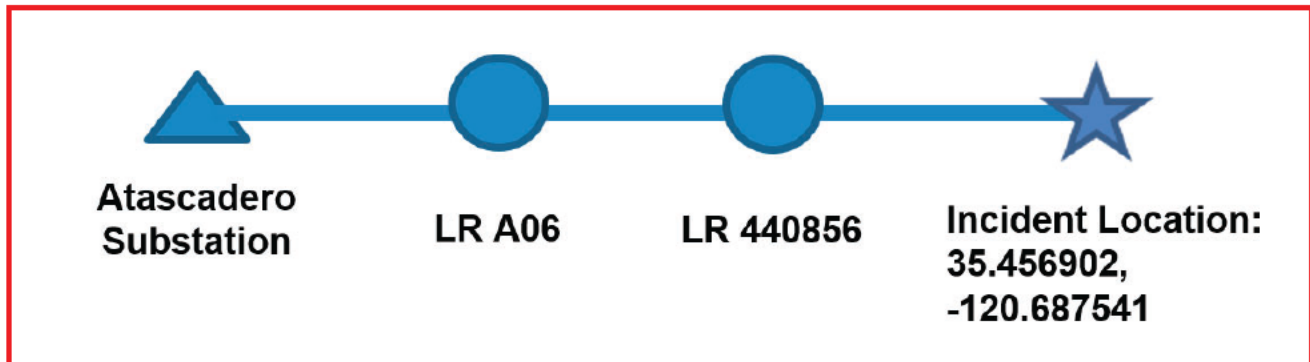
Barrier	Expected vs. Observed Performance	Why did the barrier not prevent the ignition event?	Opportunity
Barriers that were Assessed as Unknown			
Distribution Detailed Inspection	Expected Performance: Thorough examination of individual components, structures, and equipment through visual inspection and routine diagnostic tests. For connectors, identify burnt, corroded, incorrectly installed, equipment or deteriorated insulation.; Observed Performance: Unknown	A1B1C2D3 - Limitation: Visibility Limitation; Equipment Condition Visibility; Fatigue damage not visually apparent	Workmanship is not believed to be the cause of the failure, as similar connectors did not exhibit problems like corrosion or non-conductive materials hindering electrical flow The exact cause of the failure remains unknown at this time.
Enhanced Powerline Safety Settings - Instantaneous Trip Settings	Expected Performance: Automatically turn off power when a hazard is detected to reduce the risk of ignition in High Fire Risk Areas. Set protective devices to operate quickly when a fault occurs but not under typical operating conditions for the line.; Observed Performance: Barrier did not perform as expected	A1B2C2D2 - Limitation: Equipment Limitation; EPSS Limitation; Limited ability to detect high impedance faults	LR 440856 did not capture any data prior to it being opened as the EPSS minimum to trip conditions were not met.
Post-Outage Patrol	Expected Performance: Identify and locate the cause of an outage; Observed Performance: Barrier did not perform as expected	A1B1C2D3 - Limitation: Visibility Limitation; Equipment Condition Visibility; Fatigue damage not visually apparent	A troubleshooter was asked by a Distribution Operator (DO) for video proof of an arcing distribution connector before they would take an action to de-energize.

Potential Next Steps / Associated CAP Items:

Asset Failure Analysis (AFA) has recommended tailboarding crews with a 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 is fired wedges and of the distribution standards 041010, [here](#).

Single Line Diagram

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Photos and Diagrams of Events

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Figure 1 - Google Earth Diagram of the Atascadero 1103 12kV Circuit. The location of the fire is approximate based on reports and pictures provided.

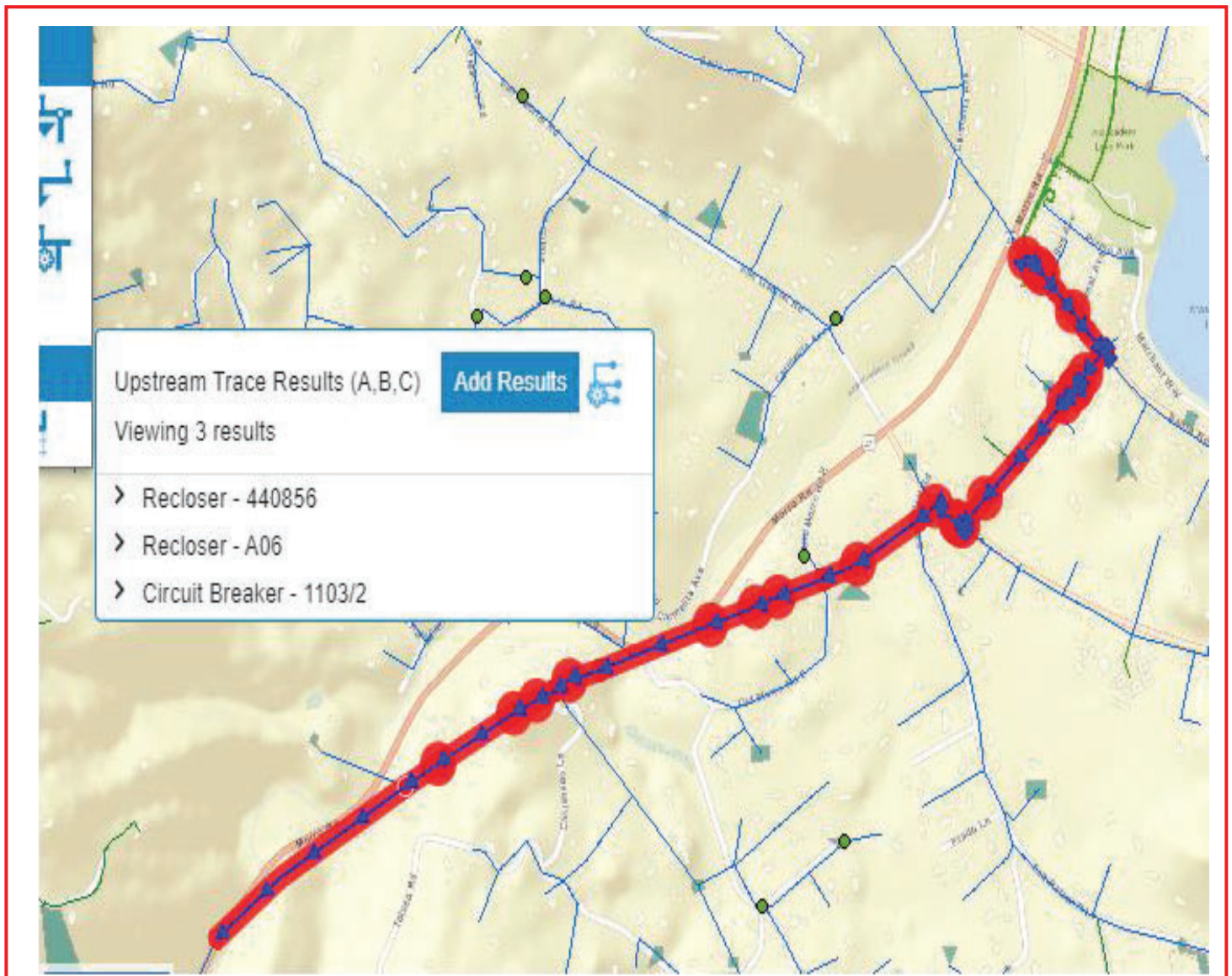


Figure 2 - EDGIS Diagram of the Atascadero 1103 12kV distribution circuit and upstream dynamic protective devices between the Substation and Incident location.



Figure 3 - 100-foot by 100-foot fire burn scar area at (SAP Pole ID: 101932126). Picture taken by the troubleshooter on June 25, 2024



Figure 4 – Arcing and burnt jumper at the dead-end strain bolted clamp shoe attached to the insulator at the top of the line-and-buck pole (SAP Pole ID: 101932126). Picture taken by the troubleshooter on June 25, 2024.



Figure 5 – Close-up view of the arcing and burnt jumper at the dead-end strain bolted clamp shoe attached to the insulator. Picture taken by the troubleshooter on June 25, 2024



Figure 6 – The Atascadero Fire Department was on site to control and suppress the less than 10-acre fire, picture taken by the troubleshooter on June 25, 2024.

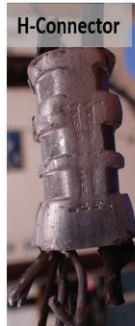


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EQUIPMENT INFO

SAP Equipment: 101932126
Year Pole Installed: 1951 (EDGIS)

Lat: 35.456902
Long: -120.687541

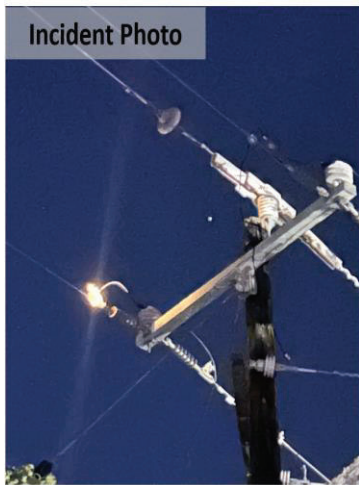


H-Connector



As-Received

Incident Photos



Incident Photo



Inspection 2019



Inspection 2022

Figure 7 - The vegetation fire was ignited by molten material dripping from a failed H-connector that linked the copper jumper to the Aluminum Conductor Steel-Reinforced (ACSR) conductor.



Figure 8 - An inspection of the collected materials revealed extensive thermal damage and material loss on the connector, particularly around the aluminum conductor.

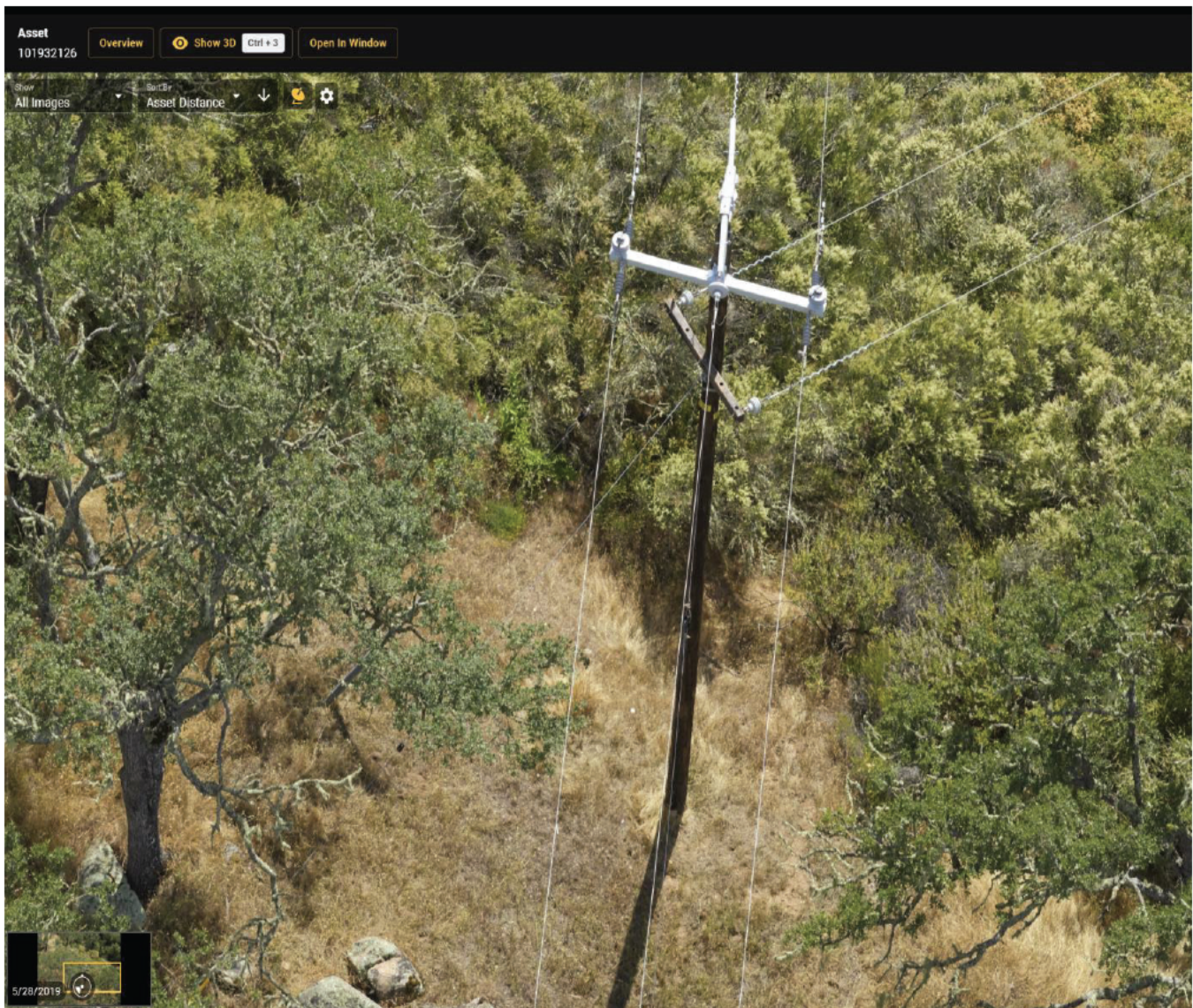


Figure 9 - SAP Pole ID: 101932126 (Incident Pole), picture taken from Shaper Shape dated May 28, 2019

Attachments

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



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

