



Preliminary Ignition Investigation Report

Ignition Database Index:	20241353
Electric Incident Investigation (EII) Number:	NR240916A
Incident Name:	Rosa
PG&E Facility Ignition?	Yes
CPUC Reportable Ignition?	Yes
Date & Time of Incident:	September 16, 2024 @ 1100 hours
Street Address:	3780 Santa Rosa Road
City:	Lompoc
County:	Santa Barbara
Latitude/Longitude:	34.5949093115, -120.3616852881
State Responsibility Area (SRA) / Local Responsibility Area (LRA) / Federal Responsibility Area (FRA)	State Responsibility Area
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):	512
Fire Potential Index (FPI) Rating: FIA	R2
Fire Potential Index (FPI) Rating: Circuit	R2
Was there a PSPS event at the time of ignition?	No
Suspected Initiating Event:	PG&E Equipment
Failure Driver:	All types of equipment/facility failure
Failure Sub-driver:	Splice/Clamp/Connector
Circuit:	Cabrillo 1103
Circuit Protection Zone:	Cabrillo1103 LR Y46
Nominal Voltage:	12kV
Pole SAP Equipment ID:	101909085
Subject to PRC 4292 Veg Pole Clearance:	No
PG&E Equipment associated with ignition:	Automatic wire splice
EPSS enabled at time of ignition?	Yes
Fault Type:	Line to Ground
Wire Down (Primary)?	Yes
Lead Agency/Agency Having Jurisdiction:	CAL FIRE
Fire Size:	10-99
FAS Field Remarks:	Crew to repair wire down
HAWC Summary:	Resources responded to the Rosa vegetation fire at San Julian Rd X Hwy 1 in Lompoc (Santa Barbara

	County). The fire has forward progress stopped at approx. 20 acres. There was an outage in the immediate area impacting approximately 276 customers (OIS#: 2569648) on the CABRILLO 1103, an EPSS circuit. The outage was later isolated and reduced to 4 customers. In retrospect and after further investigation into this incident it has been determined that the CABRILLO 1103 circuit was in fact EPSS enabled at the time of ignition. This information was not available at the time of report due to a technological issue as to the timing when the data source info is pulled into the HAT. All effected parties are aware. SIPT E643 responded to the incident. PSS [REDACTED] is engaged. Tman responded. Notifications have been made to PSS, HAWC Ops, DCC.
Injuries / Fatalities / Property Damage / Media Attention:	No injuries, fatalities, property damage or media attention
Weather Conditions:	At 1100 hours near the Incident Location: Temperature: 58.7°F Relative Humidity: 78% Wind Speed: 17.7 mph Wind Gust: 23.9 mph out of the west-northwest
Red Flag Warning (RFW) / High Wind Warning (HWW):	No Red Flag Warning or High Wind Warning Issued
911 Standby Relief Time:	3 minutes
OIS #:	2569648
ILIS #:	24-0111489
FAS #:	T006501870, T00650181
TOTL #:	N/A
Assigned Attorney:	N/A
Ignition Investigator & Phone:	[REDACTED]

Executive Summary

On September 16, 2024 at approximately 1058 hours, an anomaly occurred on the Cabrillo 1103 circuit which caused 276 customers to lose power at 1100 hours. PG&E became aware of an area wide outage and began procedures to identify the cause of the power outage.

The incident segment of the Cabrillo 1103 Circuit is a three phase, 12kV overhead distribution circuit with #4 aluminum conductor steel reinforced conductor (ACSR). This incident occurred in a Tier 2 High Fire Threat District (HFTD) and a High Fire Risk Area (HFRA). PG&E's Enhanced Powerline Safety Settings (EPSS) were enabled on the Cabrillo 1103 as of 0946 hours on September 16, 2024 due to the increase Risk Fire Index (RFI) forecasted for the day.

At 1103 hours, a PG&E troubleshooter was dispatched to patrol the Cabrillo 1103 circuit to identify why the circuit had experienced a power failure. He arrived at an onsite to inspect the Cabrillo 1103 circuit at 1134 hours. Due to the fire activity in the area, the troubleshooter identified SAP ID 101909085 as the Area of Interest.

The troubleshooter located one of three spans downed along the hillside due to a failed automatic splice. The conductor still hot from being energized just moments before, fell onto a dried grassy hillside causing the heat to ignite the dried grass where the conductor made contact with the dried vegetation.

The Santa Barbara County Fire Department received a first alarm at 1109 hours and arrived onsite at the incident location at 1149 hours. The first engine had difficulty reaching the location due to limited road access and its remote location. Upon arrival the fire department estimated the fire was 20-30 acres in size burning uphill. Santa Barbara County Fire Department utilized CAL FIRE as mutual aid. The fuel types transitioned from dried annual grasses to oak woodland fuels prior to full extinguishment. Forward progress of the fire was stopped at 1456 hours.

It was a cool and breezy day on September 16, 2024, near the Incident Location as a strong weather system moved through the territory. The high temperature for the day was 61.2°F at 1330 hours and the low temperature was 54.0°F at 0750 hours. The relative humidity was as high as 98% at 0000 hours and as low as 62% at 1350 hours. The strongest wind speed was 34.9 miles per hour (mph) out of the west-northwest at 1610 hours. The weather data was taken from a MesoWest station approximately 5.1 miles northwest of the Incident Location.

The failed automatic splice was removed from the scene and taken to Applied Technology Services (ATS), a PG&E facility where further analysis and destructive testing was performed on the material to determine a failure cause. General observations by the naked eye found the splice had deep cracks along with pitting, signs of heavy corrosion and missing funnel guides.

The splice underwent radiographic imaging to identify damage not visible to the naked eye. The results concluded that the springs inside were damaged, most likely from internal corrosion. Additionally, the failure point shows significant material loss that contributed to corrosion and believed to be the cause of the failure.

As the incident splice was analyzed, two other auto splices were removed from the Incident Location and sent into ATS for further analysis. These "sister" splices also showed indications of heavy corrosion, and cracking along the body. One of the splices had a crack that had grown algae inside, indicating the crack had been present for some time.

A post incident Safety Condition Assessment Review (SCAR) was completed at the Incident Pole post incident. The SCAR inspection assessed 29 splices near the Incident Location. Of the 29 splices, three of those were auto splices which were all found on the Incident Pole with some slight burn marks. These splices were later proactively replaced with compression splices under tag 129579462.

In addition, an Extent of Condition, (XoC) was performed on the automatic splices by the Asset Failure Analysis (AFA) team from this incident and another incident within the PG&E service territory earlier in 2024. Automatic splices used on aluminum conductor within agricultural territories along with high corrosion rates will have an emphasis to have automatic splices inspected and replaced if warranted through a new pilot program. In addition 104 open connector/splice notifications have been inspected by the Centralized Inspection Review Team (CIRT). An updated safety flash has been created specifically indicating that any damaged, corroded, or cracked splices identified will have an expedited priority to be worked within a seven-day period to prevent further incident. The prioritization for replacement of cracked splices or damaged splices was also updated in the 2025 inspection job aid.

A PG&E repair crew addressed the work orders for the decayed pole. On October 21, 2024 the wooden crossarms were removed and replaced with a 9'-foot light composite crossarm. In addition, all of the woodpecker holes were filled.

System Protection Analysis

The Cabrillo 1103 circuit was enabled with EPSS effective on September 16, 2024, at 0946 hours. The circuit was re-evaluated due to the increased fire potential in the area. As a result, Line Recloser (LR) Y46 was placed in Mode 3, with downed conductor detection (DCD) along with sensitive ground fault (SGF) settings of a 15-amp detection to engage EPSS.

LR Y46 detected a DCD high impedance trip as a result of a downed conductor near the Incident Location at 1058 hours. Phase A measured a 75-amp current; phase B measured a 71-amp current, Phase C measured an 82-amp current and the ground current measured at 10.7 amps. The LR opened and responded in 1.216 seconds, clearing the line in 1.629 seconds. The settings on the Cabrillo 1103 operated as designed as the device operated withing 1.216 seconds as the down conductor detection was sensed.

Ignition Impact

This ignition was named the "Rosa" fire. The fire burned 20 acres of dried annual grasses in a hillside due to a failed automatic splice that carried the #4 ASCR conductor. As the conductor broke away from the automatic splice, the conductor fell to the ground creating an ignition point.

Sequence of Events

September 16, 2024

- 1058 hours – First no light reported, LR Y46 opened, 276 customers impacted
- 1103 hours – Troubleshooter dispatched
- 1109 hours – First alarm, Santa Barbara County Fire Department (SBCFD)
- 1134 hours – Troubleshooter arrived onsite
- 1149 hours - Santa Barbara County Fire Department (SBCFD) arrived onsite
- 1205 hours – Fuse 7195 open
- 1242 hours – LR Y46 closed restoring 272 customers

- 1456 hours – Forward progress stopped, fire under control per SBCFD
- 1556 hours – Troubleshooter left site
- 1617 hours – Repair crew dispatched
- 1957 hours – Fuse 7195 closed, restoring four customers
- 2025 hours – Repair crew left site

Corrective Notification Associated with Ignition

Two corrective notifications were created to address post incident repairs. An “A” tag was created under EC Notification #129539020, which was to repair the downed conductor. This tag was completed on September 16, 2024 which consisted of repairing 500 feet of #4 ACSR conductor.

A second notification, EC Notification #129579462 was created on September 24 to remove three remaining automatic splices that were left near the Incident Location. These splices were collected and sent into ATS for further destructive testing. The three automatic splices that were removed were replaced with three high tension press on sleeves.

Pending Work

Type	Number	Description	Priority	Date Identified	Due Date
EC Notification	123641489	Rotten/decayed pole and crossarm	E	05/19/2022	05/19/2023
EC Notification	124347431	Rotten/decayed pole	E	08/23/2022	08/23/2023
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

Source Side Structure		
Info / Inspection	Most Recent Date	Findings
Install Date:	1953	40', Class 5, Douglas fir
Inspection:	05/19/2022	GO165 – Decayed/Rotten Pole and Crossarm
	07/30/2021	GO165 – No data report
Patrol:	06/23/2024	No items identified
	05/28/2023	No items identified
Corrective History:	05/19/2022	Pole Assessment to determine if replacement is required EC # 123641489
Aerial Inspection Records:	06/23/2024	No items identified
VM Inspection:	N/A	
EVM Inspection:	N/A	
Equipment Test:	N/A	

Pole Intrusive Test:	08/23/2022	Rot/Decayed
WSIP Inspection:	N/A	

*Incident Location: Pole SAP ID: 101909085

Load Side Structure		
Info / Inspection	Most Recent Date	Findings
Install Date:	1946	40', Class 5, Douglas fir
Inspection:	05/19/2022	GO165 Inspection – no issues identified
	07/30/2021	GO165 Inspection – no issues identified
Patrol:	06/23/2024	No items identified
	05/28/2023	No items identified
Corrective History:	N/A	
Aerial Inspection Records:	06/23/2024	No items identified
VM Inspection:	N/A	
EVM Inspection:	N/A	
Equipment Test:	N/A	
Pole Intrusive Test:	08/23/2022	No Issues identified
WSIP Inspection:	N/A	

*Incident Location: Pole SAP ID: 101922587

Hazard Barrier Analysis:

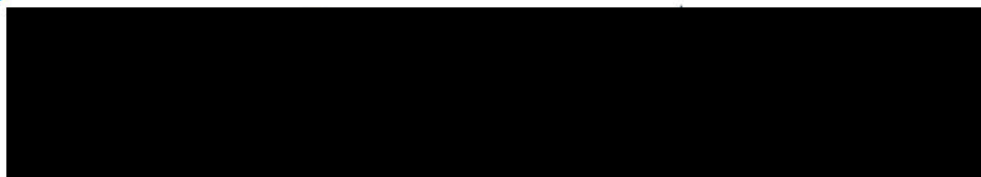
Hazard	Equipment Failure	Sub-Hazard	Connector Failure (Primary Distribution)
Target	Automatic Splice Failure leading to 20-acre fire in Tier 2 HFTD		
Barrier	Expected vs. Observed Performance	Why did the barrier not prevent the ignition event? (See ICF Codes)	Opportunity
Barriers that Negatively Affected Ignition			
Distribution Facility Inspection	<p>Expected Performance: Simple, visual inspection to identify obvious structural problems or hazards, such as damaged line equipment or corrosion with noticeable metal damage.</p> <p>Observed Performance: Barrier did not perform as expected</p>	A1B1C2D3 – Fatigue damage not visually apparent	Ground inspections did not identify weak or damaged splices that posed a risk
Barriers that Positively Affected Ignition			

Enhanced Powerline Safety Settings - Downed Conductor Detection	<p>Expected Performance: Automatically turn off power when a downed conductor is detected.</p> <p>Observed Performance: Barrier performed as expected</p>	N/A	Recloser operated as programed for DCD, resulting in de-energized line.
Barriers that were Assessed as Opportunities			
Infrared Inspections	<p>Expected Performance: Identify abnormal conditions such as connector temperatures greater than conductor temperatures and count number of splices.</p> <p>Observed Performance: Barrier did not exist</p>	N/A	IR inspections in HFTD/HFRA in high corrosion areas can identify equipment that will need to be replaced to prevent wildfire
Distribution System Hardening Program	<p>Targets conductor replacement in high wildfire risk areas and areas most impacted by PSPS</p> <p>Observed Performance: Barrier did not exist</p>	N/A	Opportunity to have the conductor replaced in HFRA area

Potential Next Steps / Associated CAP Items:

The Asset Failure Analysis (AFA) has identified several CAP items not specifically related to this incident to address the auto splice failures. The pilot program to inspect and identify damaged auto splices is still currently underway.

Single Line Diagram



LEGEND



Substation



Fuse



Line Recloser



Area of Interest

Photos and Diagrams of Events

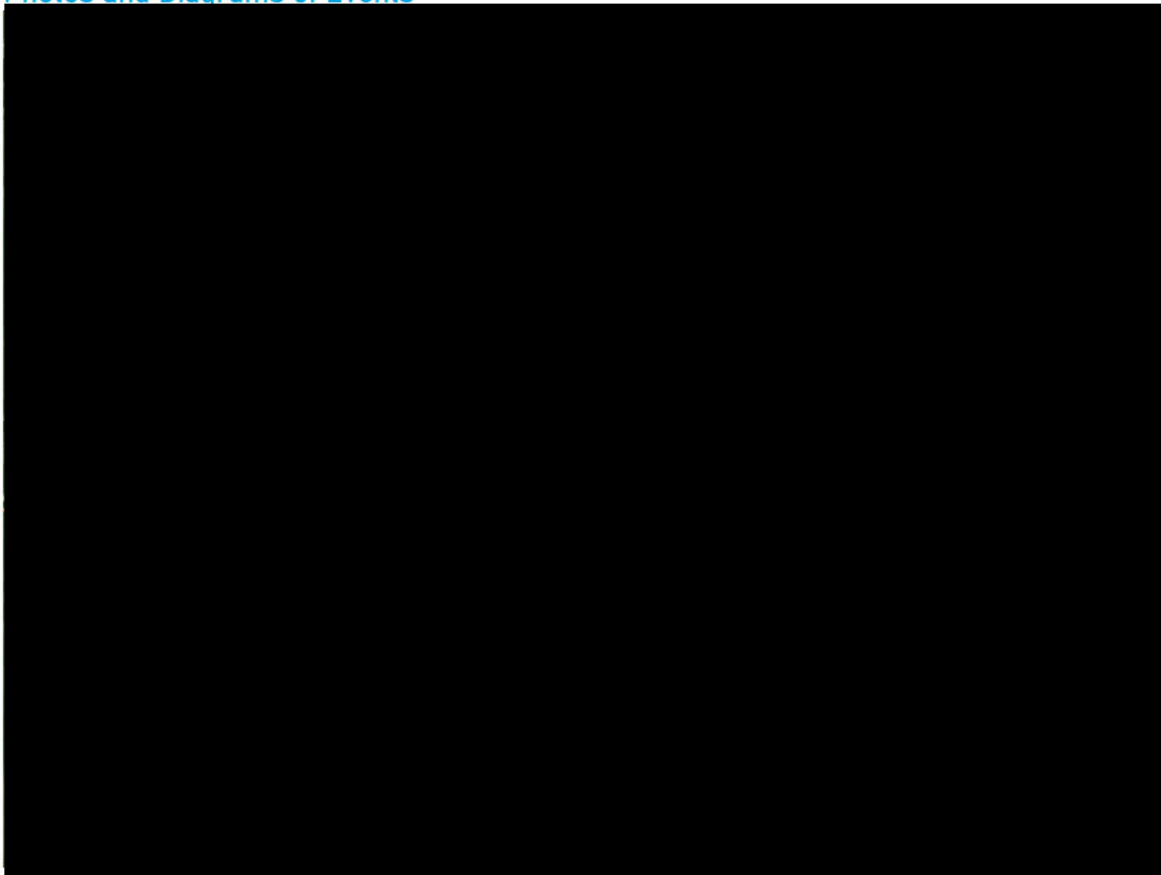


Figure 1 – Google Earth image of Incident Location.



Photo 2 - Photo taken by inspector during 07/30/2021 GO 165 inspection SAP ID 101909085.



Figure 3 - Photo taken on 08/23/2022 during PTT inspection, SAP ID 101909085

This report is preliminary and based on available information as of **January 9, 2025**; event data is subject to change based upon subsequently discovered information.

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Internal

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Figure 5 - Photo taken on 08/06/2024 during inspection, showing pole is decayed



Figure 6 - Photo taken on 08/06/2024 during inspection, showing pole is decayed, base has woodpecker damage



Figure 7 - Photo taken on 09/16/2024 by troubleshooter, SAP ID 101909085.



Figure 8 – Photo of failed connector/splice taken by troubleshooter 09/16/2024.

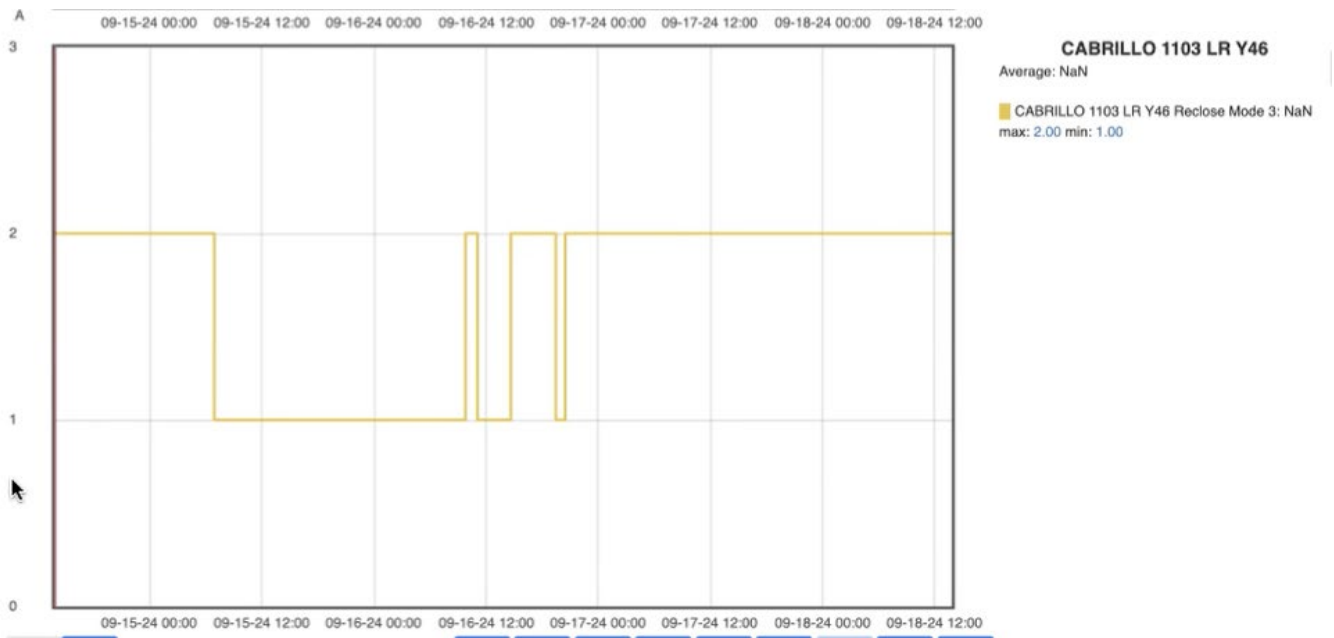


Figure 9 - Photo supplied 10/24/2024 by EPSS engineer showing LR Y46 was EPSS enabled at time of incident.

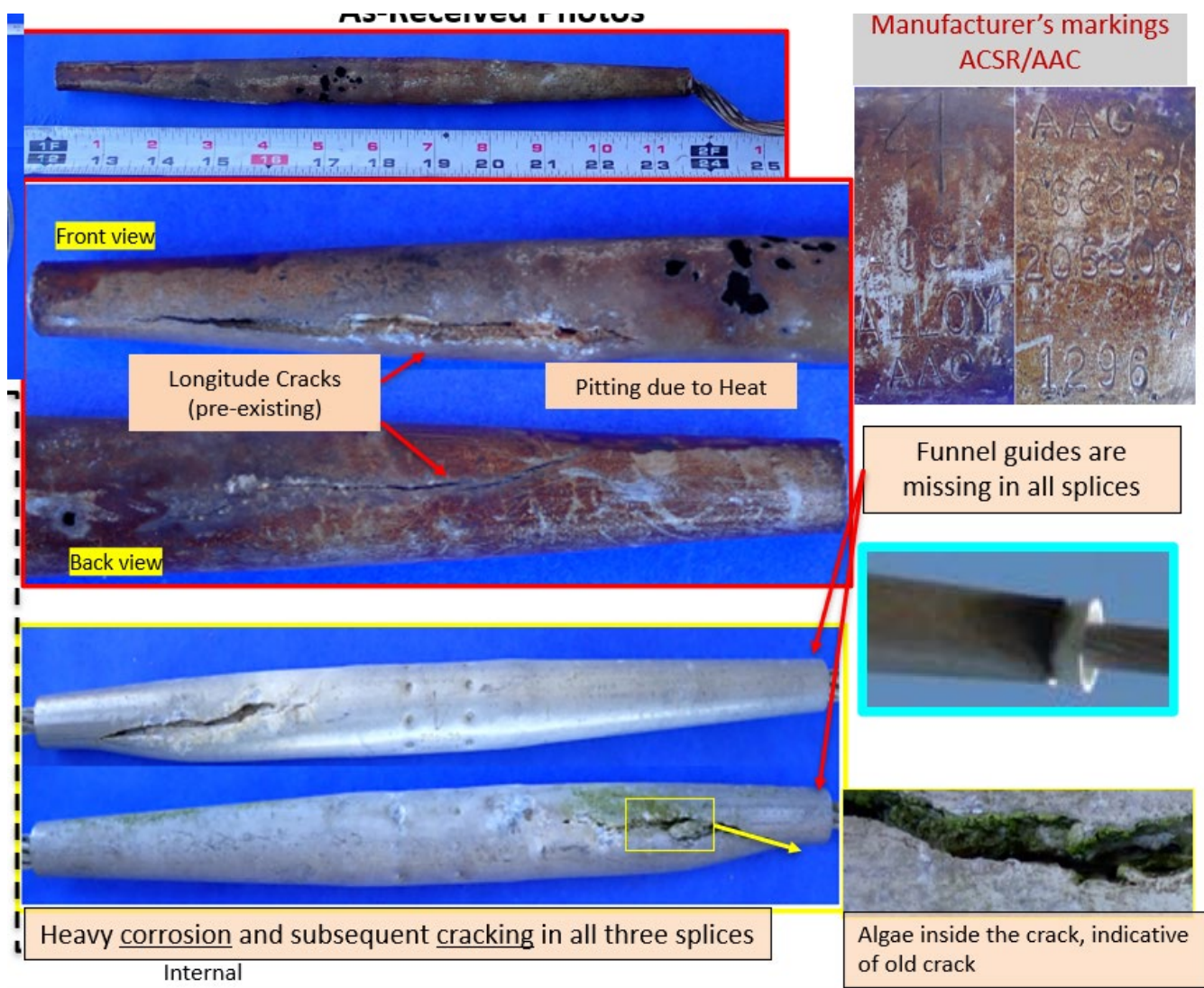


Figure 10 - Photo supplied by ATS 10/8/24, showing condition of failed splice and sister splices

Attachments

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

[REDACTED]

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