



PACIFIC GAS AND ELECTRIC COMPANY

ELECTRIC INCIDENT REPORT FORM

TO: CALIFORNIA PUBLIC UTILITIES COMMISSION

PG&E Reference Number: EI221116A	
CPUC Website	February 3, 2023 at 1550 hours
CPUC Recipient	Date & Time CPUC Notified
1-800-235-1076	PG&E
Telephone Number	Reported by
	415-973-2782
	Telephone Number

Report Type: 20-Day Report

- INJURY/FATALITY:** An incident which results in a fatality or personal injury to an employee or 3rd party rising to the level of in-patient hospitalization and is attributable or allegedly attributable to utility owned electric facilities. Incidents involving motor vehicles are not reportable unless they result in death or injury attributable or allegedly attributable to electrical contact with the utility owned electric facilities.
- MEDIA:** An incident that is attributable or allegedly attributable to Pacific Gas and Electric owned electric facilities and is subject to significant public attention and/or media coverage.
- PROPERTY DAMAGE:** A single electric incident where the property damage to PG&E or 3rd parties exceeds or is expected to exceed \$50,000 and is allegedly attributable to PG&E owned electric facilities.
- OPERATOR JUDGEMENT:** Any incident that is significant in the judgement of the operator, even though it may not meet the incident reporting criteria.

20-Day Report Sent to CPUC – Date: March 6, 2023

Initial Report Sent to CPUC – Date: February 3, 2023



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20-Day Report

PG&E Reference Number: EI221116A

Date and Time of Incident:		November 16, 2022 at 0700 hours	
Date and Time Incident Determined Reportable:		February 3, 2023 at 1415 hours	
Location of Incident:		[REDACTED]	
City:	San Bruno	Division:	Peninsula
County:	San Mateo	County:	San Mateo
Circuit/Facility:	San Mateo-Martin #6	Voltage:	115kV
Service Interrupted (Date and Time):	November 16, 2022 at 0700 hours	Total Customers Affected:	1
Service Restored (Date and Time):	N/A		

Description of Incident:

On November 16, 2022, PG&E was performing planned switching on the PG&E San Mateo-Martin #6 115kV Transmission Line to de-energize a section of the line for scheduled maintenance work. The objective of the switching was to de-energize the section of the line between San Mateo-Martin #6 115kV Switch 157 (“Switch 157”) at PG&E’s San Bruno North Transition Interchange (“San Bruno Interchange”) near the intersection of 7th Ave and Shaw Rd in San Bruno and Martin Substation in San Francisco. The other sections of the line were to remain energized.

At 0657 hours, a transmission troubleshooter at the San Bruno Interchange supporting the switching work received permission from PG&E’s Grid Control Center (“GCC”) to open Switch 157 and did so at 0700 hours. At this time, the breakers at Martin Substation were open and the breakers at San Mateo Substation were closed and on manual mode as per the switching plan. After the troubleshooter opened Switch 157, the troubleshooter heard a loud boom in the distance, quickly followed by a loud hissing sound near riser potheads approximately 20 feet from the troubleshooter’s position. Unsure of the cause of the hissing sound at the time, the troubleshooter moved towards his truck that was parked nearby to distance himself from the riser potheads. As the troubleshooter turned to move away, the troubleshooter noticed a large mushroom-like smoke cloud coming from the nearby [REDACTED]-owned Shaw Road Substation. The [REDACTED] Shaw Road Substation is served by a section of the San Mateo-Martin #6 115kV line that would have remained energized had the switching work proceeded as planned.

PG&E relay data shows that at around 0700 hours, the San Mateo-Martin #6 115 kV line relayed at the San Mateo Substation on a B phase-to-ground fault and did not test by design. PG&E metering data and data logs shared by [REDACTED] both show a loss of power at the [REDACTED] Shaw Road Substation at approximately the same time. Approximately 10 minutes after the switch opened, PG&E Supervisory Control and Data Acquisition (“SCADA”) logs show low pressure alarms from the nitrogen gas system at the San Bruno Interchange, which is used to insulate underground portions of the transmission line.

The troubleshooter called 911 to report the explosion and smoke, then called the GCC to inform them of the situation. The GCC informed the troubleshooter that the San Mateo-Martin #6 115kV line had relayed and that the line was de-energized. While on the phone with the GCC, the troubleshooter saw fire responders arriving and went to the [REDACTED] Shaw Road Substation across 7th Ave to support them. At the substation, the



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ELECTRIC INCIDENT REPORT FORM

troubleshooter saw equipment in the substation engulfed in flames. Oil from the equipment had spilled onto the ground and was also on fire. The troubleshooter directed the fire department to put out the oil fire on the ground but to not spray the equipment as other 115 kV lines ran through a corridor alongside the San Mateo-Martin #6 115kV line and there was the possibility of induced current on the otherwise de-energized line feeding the equipment.

While the fire department was suppressing the fire, the troubleshooter received a call from a PG&E transmission cableman who had been notified of the incident. The cableman informed the troubleshooter that the hissing sound that the troubleshooter heard at the San Bruno Interchange was likely nitrogen gas escaping from isolating unions on the nitrogen gas system at the interchange. The cableman said that ground faults from other locations on the line could damage the isolating unions. With the cableman to assist over the phone, the troubleshooter proceeded back across the street to the San Bruno Interchange. They confirmed that the leak was from damaged isolating unions and were able to stop the leakage on the nitrogen gas system.

After the troubleshooter stopped the leak, the troubleshooter returned to the [REDACTED] Shaw Road Substation. There, the troubleshooter was met by a PG&E Public Safety Specialist who had arrived on scene due to the fire. [REDACTED] Substation personnel arrived shortly after as did a second PG&E transmission troubleshooter to help with the response. At the substation, one unit of a metering combination current and potential oil-filled instrumentation transformer bank ("CT/PT") was damaged. The switch above the unit (Switch 110) was also damaged. The CT/PT failure also caused oil that was in the unit to be projected onto the 115kV PG&E insulators and 115kV conductor drop feeding the [REDACTED] switch.

PG&E transmission cablemen arrived on scene to repair the nitrogen gas system isolating unions and to refill the nitrogen system at the San Bruno Interchange. [REDACTED] personnel worked to isolate the CT/PT units at the substation. The PG&E troubleshooters patrolled the San Mateo-Martin #6 from Switch 157 to the San Mateo Substation and found no issues with the switch or the line and reported this information back to the GCC. At 2130 hours, the GCC re-energized that portion of line through the San Mateo Substation and saw no issues. The line was returned to normal operation at 2133 hours.

At the time of the incident, it was a mild, breezy, and mostly clear day on November 16, 2022 near the [REDACTED] Shaw Road Substation. The high temperature for the day was 68.0°F at 1545 hours and the low temperature was 44.1°F at 0556 hours. The relative humidity was as high as 94% at 2330 hours and as low as 21% at 1545 hours. The strongest wind speed was 18.4 mph at 1715 hours from the west-northwest. Neither the San Bruno Interchange nor the [REDACTED] Shaw Road Substation are in a Tier 2 or 3 High Fire Threat District ("HFTD").

On February 3, 2023, PG&E received a claim from [REDACTED] for the replacement of the damaged Switch 110 at the [REDACTED] Shaw Road Substation. PG&E reported this incident to the CPUC on the same day under the CPUC property damage incident reporting criteria due to the amount of the claim exceeding \$50,000.

PG&E replaced the overhead 115kV PG&E conductor drop to the [REDACTED] Shaw Road Substation on November 17, 2022. As of March 6, 2023, PG&E is continuing its work to replace the CT/PT units and, at the request of [REDACTED], Switch 110. [REDACTED] has informed PG&E that they are also performing work on the [REDACTED] relays in the substation. PG&E has collected the damaged CT/PT unit, the other two phases of the CT/PT bank, and the damaged nitrogen gas system isolating unions into evidence. Based on information provided to PG&E by [REDACTED] at the time of this report, [REDACTED] has kept the damaged Switch 110 on-site at the substation.

PG&E is continuing its investigation into this incident. This information is preliminary and all the times, customer numbers and measurements mentioned in this report are approximate.



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Attachments:

- DRU11401_Atch01 [REDACTED] Shaw Rd Substation Metering Field Orders_CONF.xlsx¹
- DRU11401_Atch02_TOTL Interruption Report INT-16368_CONF.pdf
- DRU11401_Atch03_Incident Diagram_CONF.pdf
- DRU11401_Atch04 [REDACTED] Shaw Rd Substation Single Line Diagram_PG&E_CONF.pdf²
- DRU11401_Atch05 [REDACTED] Shaw Rd Substation Drawings [REDACTED]_CONF.pdf³
- DRU11401_Atch06_Photos_CONF.pdf
- DRU11401_Atch07_LC Notification 124900266_CONF.pdf
- DRU11401_Atch08_LC Notification 124898652_CONF.pdf

¹ Accuracy tests are highlighted in this document.

² Note that this drawing does not include [REDACTED] assets at the substation load side of [REDACTED] transformer. [REDACTED] Switch 110 and the CT/PT units are highlighted on the drawing for the purposes of this report.

³ Drawings were provided to PG&E by [REDACTED]