CALIFORNIA PUBLIC UTILITIES COMMISSION Safety and Enforcement Division Electric Safety and Reliability Branch

Incident Investigation Report

Report Date: May 6, 2019

Incident Number: E20171020-01

Utility: Pacific Gas and Electric Company (PG&E)

Date and Time of Incident: October 8, 2017 at approximately 2130 hours

Location of the Incident: 995 Maacama Lane Healdsburg, CA County: Sonoma

Fatality / Injury: None reported

Property Damage: >\$50,000

Utility Facilities Involved: Fulton 1102, 12 kV Circuit

Violation(s): Yes

I. Summary

On October 8, 2017, at approximately 2130 hours, a Valley Oak tree failed and fell onto PG&E 12 kV overhead conductors near 995 Maacama Lane in the city of Healdsburg in Sonoma County. The tree made contact with PG&E's conductors and caused the ignition of the Youngs Fire, which burned 89 acres and damaged a residence and multiple structures and vehicles. No fatalities or injuries were reported.

Based on SED's review, SED found that PG&E violated the Commission's General Order (GO) 95, specifically, one violation of GO 95, Rule 31.1 and one violation of GO 95, Rule 35:

GO Rule	Violations
GO 95, Rule 31.1	Hazardous tree not identified and abated
GO 95, Rule 35	Vegetation clearance not maintained

A. Rules Violated

GO 95, Rule 31.1, states in part:

"A supply or communications company is in compliance with this rule if it designs, constructs, and maintains a facility in accordance with the particulars specified in General Order 95, except that if an intended use or known local conditions require a higher standard than the particulars specified in General Order 95 to enable the furnishing of safe, proper, and adequate service, the company shall follow the higher standard.

For all particulars not specified in General Order 95, a supply or communications company is in compliance with this rule if it designs, constructs and maintains a facility in accordance with accepted good practice for the intended use and known local conditions."

GO 95, Rule 35, states in part:

"Where overhead conductors traverse trees and vegetation, safety and reliability of service demand that certain vegetation management activities be performed in order to establish necessary and reasonable clearances, the minimum clearances set forth in Table 1, Cases 13 and 14, measured between line conductors and vegetation under normal conditions shall be maintained. (Also see Appendix E for tree trimming guidelines.) These requirements apply to all overhead electrical supply and communication facilities that are covered by this General Order, including facilities on lands owned and maintained by California state and local agencies."

B. Witnesses

No.	Name	Title
1	Brandon Vazquez	CPUC Lead Investigator
2	Charlie Laird	CAL FIRE Lead Investigator
3	Jeremy Ward	CAL FIRE Fire Captain

C. Evidence

No.	Source	Description
1	PG&E	Initial Online Incident Report, 10/20/17
2	CPUC	Individual Data Request #1, 11/16/17
3	PG&E	20-day Incident Report, 11/17/17
4	PG&E	Individual Data Request #1 Response, 2/28/18 through 5/4/18
5	CPUC	Follow-up Data Request #1, 5/17/18
6	CPUC	Individual Data Request #2, 6/6/18
7	PG&E	Follow-up Data Request #1 Response, 6/8/18
8	CPUC	PG&E Evidence Viewing, 6/11/18
9	PG&E	Individual Data Request #2 Response, 6/13/18 through 6/29/18
10	CPUC	Data Request #2, 7/19/18
11	CPUC	Follow-up Data Request #3, 7/27/18
12	PG&E	Data Request #2 Response, 8/3/18 through 9/21/18
13	CPUC	Data Request #3, 8/16/18
14	CAL FIRE	CAL FIRE Investigation Report and Attachments, 8/22/18
15	CPUC	CAL FIRE Evidence Viewing, 8/22/18
16	PG&E	Follow-up Data Request #3 Response, 8/24/18
17	PG&E	Data Request #3 Response, 8/31/18 through 9/21/18
18	CPUC	Data Request #4, 10/19/18
19	PG&E	Data Request #4 Response, 11/15/18 through 12/14/18
20	CPUC	Data Request #5, 1/3/19
21	PG&E	Data Request #5 Response, 1/25/19 through 2/6/19
22	CPUC	Data Request #6, 2/8/19
23	PG&E	Data Request #6 Response, 2/15/19 through 3/18/19
24	CPUC	Data Request #7, 2/25/19
25	PG&E	Data Request #7 Response, 3/18/19

II. Background

On January 17, 2014, Governor Edmund G. Brown Jr. proclaimed a State of Emergency and directed state officials to take actions to mitigate conditions that could result from the drought and cause a fire. On February 18, 2014, in response to the proclamation, SED issued a letter to PG&E directing PG&E to take all practicable measures to reduce the likelihood of fires caused by utility facilities, including, increasing inspections, taking corrective actions and modifying protective schemes. On June 12, 2014, the California Public Utilities Commission (CPUC) issued Resolution ESRB-4 directing all Investor Owned Electric Utilities (IOU) to take remedial measures to reduce the likelihood of fires started by or threatening utility facilities. On October 30, 2015, Governor Edmund G. Brown Jr. declared a Tree Mortality State of Emergency due to tree mortality caused by the state's prolonged drought and bark beetle infestations.

On October 8, 2017 at approximately 2130 hours, a Valley Oak tree failed and fell onto the overhead conductors of PG&E's Fulton 1102, 12 kV three-phase circuit, which ignited the fire. Three phases of conductor were brought down as a result. The incident caused power interruptions to 37 customers. The Youngs Fire burned approximately 89 acres and damaged a residence, multiple structures, and multiple vehicles. No fatalities or injuries were reported for the Youngs Fire.

Weather station EW3235, located approximately one mile south of the incident location, recorded a temperature of 74 degrees Fahrenheit, north-north-east wind speeds of 5 miles per hour (mph), wind gust up to 15 mph, and a relative humidity of 15% around the time of the incident.¹

¹ Weather conditions per MesoWest (www.mesowest.utah.edu)



Figure 1: Incident Location (Source: Google Maps)

III. SED's Review and Analysis

A. PG&E's Distribution Facilities Inspection Program

Rural areas, such as the incident area, are defined by GO 165 as "those areas with a population of less than 1,000 persons per square mile". GO 165 requires biennial patrol inspections and detailed inspections at five-year intervals for rural areas.

GO 165 defines a patrol inspection as a "simple visual inspection" meant to identify "obvious" structural problems and hazards (e.g., leaning poles, loose crossarms, etc.) and may be carried out during other company business. The incident area crosses a District boundary between North Bay and Sonoma on the subject circuit. SED reviewed PG&E's North Bay July 2013 and August 2015 and PG&E's Sonoma October 2012 and July 2016 distribution patrol inspection records in proximity to the incident location. For the Sonoma 2012 patrol inspection, PG&E identified a pole for replacement (EC tag #101131644).² PG&E documented no abnormal conditions or issues during the other patrol inspections.

² Bates PGE-CPUC_00019935_CONFIDENTIAL

GO 165 defines a detailed inspection as one where facilities are "carefully examined" to gather and record conditions of overhead facilities. A detailed inspection is meant to identify "obvious" structural problems and hazards, in addition to issues such as loose hardware, transformer oil leaks, contaminated insulators, etc. SED reviewed PG&E's North Bay October 2012 and September 2017 detailed inspection records in proximity to the incident location. In addition, SED reviewed PG&E's Sonoma May 2009 and July 2014 detailed inspection records in proximity to the incident location. Two vegetation related work orders resulted from the North Bay 2012 detailed inspection. The first work order (EC tag #106281878)³ was to replace a service drop damaged by contact with vegetation. The second work order (EC tag #106281942)³ was for a pole with missing high voltage signs and vegetation contact above the anchor guy insulator. PG&E categorized these work order as Priority E. Priority E requires completion within 12 months of the issue being identified. One work order (EC tag #113254677)⁴ for a pole with missing high voltage signs located on the subject conductor span resulted from the North Bay 2017 detailed inspection. PG&E categorized this work order as Priority F. Priority F requires completion by the next detailed inspection, which would be five years after the inspector identified the issue.

There were six open work orders on the subject conductor span scheduled for completion past the date of the incident.⁵ Additionally, in 2016, Osmose Utility Services, Inc. conducted an infrared (IR) inspection of the subject circuit that resulted in the replacement of an overhead connector.

Based on the aforementioned PG&E distribution patrol and detailed inspection records, SED did not identify a violation of applicable GO 95 and 165 rules.

B. PG&E's Vegetation Management Program

The GO 95 rules applicable to Vegetation Management (VM) include:

- 1. Rule 31.1 Design Construction and Maintenance.
- 2. Rule 35 Vegetation Management.
- 3. Rule 37 Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1 Cases 13 and 14.

In order to comply with the applicable GO 95 rules, PG&E's Distribution Vegetation Management Standard⁶ (DVMS) outlines the general strategy used to identify:

1. Conductor radial clearance issues;

³ Bates PGE-CPUC_00019844_CONFIDENTIAL and PGE_CPUC_00019860_CONFIDENTIAL

⁴ Bates PGE-CPUC_00019740_CONFIDENTIAL

⁵ Bates PGE-CPUC_00019546_CONFIDENTIAL

⁶ Bates PGE-CPUC_00005827_CONFIDENTIAL. Utility Standard TD-7102S, Published on 9/4/15. Rev 1.

- 2. Trees that will encroach PG&E's minimum distance requirements; and
- 3. Hazard trees that have the potential to strike conductors.

In order to implement their strategy, PG&E's DVMS prescribes annual vegetation patrols and completion of identified vegetation work for all primary and secondary distribution facilities.

i. Routine VM Inspections

PG&E's VM contractors, specifically Pre-Inspection (PI) personnel, work with VM Vegetation Program Managers (VPM) to create an annual plan for routine patrols (i.e., PIs). Vegetation work is prescribed during PIs by PI personnel. PG&E's VPM then schedules the vegetation work to be completed on an annual basis by Tree Contractor (TC) personnel. PG&E also uses a combination of LiDAR⁷ and spectral imagery to allow VM to identify hazardous trees in high fire danger areas. Trees identified using these technologies are then inspected from the ground and abated as necessary. However, PG&E also allows the use of aerial patrols in place of ground patrols.

For the incident location, PG&E contracted Western Environmental Consultants, Inc. for PIs and The Davey Tree Expert Company for vegetation work (i.e., trimming and removal).

Vegetation PIs are performed by a Consulting Utility Forester (CUF), an individual qualified by PG&E, who inspects all vegetation that has the potential to grow into or fall into the distribution primary conductors before the next inspection and identify vegetation that is currently causing strain/abrasion of secondary conductors.

PG&E's PI contract specification⁸ requires a CUF to have at least two years' experience in line clearance tree pruning work, or equivalent experience as determined by PG&E. The PI contract specification also notes that PG&E desires that a CUF have an associate's degree in forestry, arboriculture or a related field; however, an associate's degree is not a requirement. The CUF should be "familiar with the Contractor's work practices, proper arboricultural techniques and practices, proper integrated pest management practices, PG&E's Tree Pruning Specification, PG&E's Pre-Inspection Specification and requirements, and all applicable legal and regulatory requirements."⁹

SED reviewed PG&E's VM records from January 2, 2013 to April 25, 2017. SED focused on reviewing documented PIs and accompanying vegetation work requests. Based on PG&E's VM records, a total of six PIs were conducted and five vegetation

⁷ LiDAR (an acronym of Light Detection And Ranging) is a surveying technology that measures distance by illuminating a target with a laser light. (Source: Wikipedia.)

⁸ Bates PGE-CPUC_DR-071918_General_Q04. PG&E Pre-Inspection contract specification. Section 3.2.

⁹ Id.

work requests for clearance trimming were generated. None of the vegetation work requests prescribed clearance trimming for the subject tree. On April 25, 2017, a routine PI identified a Valley Oak tree, a Walnut tree, and a California Bay tree for trimming.¹⁰ During the last PI conducted on April 25, 2017, PG&E did not identify the subject Valley Oak tree for removal. The vegetation work was completed on June 28, 2017. Furthermore, no third parties denied vegetation work requests at the incident location during this time, and there was no pending vegetation work scheduled at the incident location at the time of the fire.

ii. Enhanced VM Inspections

In addition to routine VM, Drought State of Emergency and Commission Resolution ESRB-4 enhanced PIs for Catastrophic Event Memorandum Account (CEMA) were conducted on September 24, 2016 and September 22, 2017. The September 22, 2017 CEMA PI was the last VM inspection activity conducted at the incident location prior to the incident.¹¹ Furthermore, no vegetation work was prescribed as a result of the aforementioned CEMA PIs. CEMA is an account used to recover the cost associated with the restoration of service and facilities affected by catastrophic events that have been declared as disasters or states of emergency by federal or state authorities. PG&E will file an application to recover the CEMA balance through rates. The amount to be recovered are the reasonable costs incurred, which are determined after CPUC review and audit of the recorded CEMA balance.

iii. PG&E VM Quality Control (VMQC) and VM Quality Assurance (VMQA)

PG&E's VMQC program audits PI and TC personnel for any vegetation work that is missed or not performed correctly. PG&E does not require routine VMQC audits and PG&E describes selected locations as "computer-generated" and "randomized". PG&E did not conduct a VMQC audit of the incident area.

PG&E conducts annual VMQA audits for each division. VMQA audits are required to be performed annually by PG&E's VMQA standard. PG&E's VMQA program audits PG&E facilities for any compliance violations (e.g., GO 95 or Public Resource Code (PRC) 4293). The incident location is part of PG&E's North Coast Division and was previously part of PG&E's North Bay Division prior to 2014. SED reviewed PG&E's 2012 to 2013 North Bay VMQA audits and PG&E's 2014 to 2017 North Coast VMQA audits. For the North Bay Division, from 2012 to 2013, a total of 3 audits were conducted. For the North Coast Division, from 2014 to 2017, a total of 11 audits were conducted. The most recent audit was conducted from May 1 to August 2, 2017 during which PG&E found 15 non-compliant trees, 18 trees with potential to become non-compliant within 90 days, and 27

¹⁰ Bates PGE-CPUC_00019561-00019562_CONFIDENTIAL

¹¹ Bates PGE-CPUC_00019549_CONFIDENTIAL

facility protect trees.¹²

iv. Applicable PG&E VM Procedures

PG&E's Distribution Routine Patrol Procedure¹³ (DRPP), Section 2.6 "Hazard Trees/Facility Protection Trees", describes trees that should be identified as hazard trees/facility protection trees during VM patrols and/or pre-inspections as, "(T)rees or portions of trees that are dead, show signs of disease, decay or ground or root disturbance, AND may fall into or otherwise impact primary or secondary conductors, THEN PRESCRIBE work to make tree Facility Safe per Facility Protect and work Difficulty Classification Procedure."

PG&E's Vegetation Management Hazard Tree Rating and Scoring (HTRS) Procedure¹⁴ aids inspectors in prescribing work for potentially hazardous trees. The procedure indicates a Valley Oak tree as a tree with a "Very High" failure potential.

C. PG&E's Infrastructure Condition

SED investigated compliance with GO 95 construction standards and GO 95, Rule 31.1 during their review of PG&E's infrastructure. Apart from the subject conductor span, no PG&E facilities were significantly damaged by the fire. The subject conductors, installed in 1941, were #6 Copper Wire.

Based on CAL FIRE's field observations, SED did not identify any GO 95 violations by PG&E.

D. PG&E Equipment Operations and Maintenance

SED verified compliance of GO 95, Rule 31.1 during their review of PG&E distribution equipment operations and maintenance records. The subject conductor span was protected upstream by Fuse 751, Line Recloser 4522, Line Recloser 4994, and the Fulton 1102 Circuit Breaker (See Figure 2).



¹² Bates PGE-CPUC_00006854_CONFIDENTIAL

¹³ Bates PGE-CPUC_00005468_CONFIDENTIAL. PG&E Distribution Routine Patrol Procedure. Utility Procedure TD-7102P-01. Rev: 1. Published: 10/27/15.

¹⁴ Bates PGE-CPUC_00005426_CONFIDENTIAL. PG&E Vegetation Management Hazard Tree Rating and Scoring Procedure. Utility Procedure: TD-7102P-07. Rev: 1. Published: 10/13/2014.

Figure 2: Single-line Diagram of the Fulton 1102 Circuit. It shows the protective devices upstream of the incident location/area of interest. Not Drawn to Scale. (Source: PG&E)



Figure 3: Legend for the single-line diagram. (Source: PG&E)

Device ID	Brand	Туре
Fulton 1102 CB	SEL	351
LR 4994	Cooper	Form 6 – PV4
LR 4522	Cooper	Form 6 – PV4
Fuse 751	Part 22	10T

Table 1: List of the brand and type of the protection devices. (Source: PG&E)

i. Event Timeline

The Fulton 1102 CB, LR 4994, and LR 4522 had data recording capability prior to, during, and after the fire, except from 2217 to 2320 hours on October 8, 2017. SED reviewed the Supervisory Control and Data Acquisition (SCADA) load data recorded at the Fulton 1102 CB, LR 4994, and LR 4522 from October 7 to 10, 2017. LR 4994 and LR 4522 did not record data at consistent or close time intervals. SED also reviewed records from smart meters on the subject circuit located upstream and downstream of the incident location.

<u>October 8, 2017</u>

At 2139 hours, a smart meter located upstream and four smart meters located downstream of the incident location recorded NIC Power Down events¹⁵. From 2139 to 2145 hours, eight smart meters located upstream of the incident location recorded a series of off/on events. At 2145 hours, twenty-six smart meters recorded NIC Power Down events.

¹⁵ A "NIC Power Down" event is a recorded log event when a smart meter initiates a shutdown (Source: PG&E).

At 2142 hours, LR 4522 recorded a peak load of 83.4 Amps (See Figure 4). At 22:16:58 hours, LR 4522 registered an outage on all phases. At 2217 hours, the Fulton 1102 CB opened due to a downed conductor on Highway 101 and de-energized the circuit. This coincides with the outage recorded at LR 4522. At 2258 hours, a PG&E troubleman reported three blown fuses at Fuse 751. At 2320 hours, the Fulton 1102 CB was closed via SCADA as repairs for the downed conductor had been completed, which re-energized the subject circuit, but not the incident location since Fuse 751 remained open. Coincidently at 2320 hours, LR 4522 recorded nonzero amperage readings on all phases.



Figure 4: SCADA plot of the load data recorded at LR 4522 on October 8, 2017 from 2000 to 2400 hours.

October 10, 2017

At 1311 hours, a PG&E lineman closed Fuse 751 in order to restore power to the incident location.

Based on PG&E's outage reports, smart meter data, and SCADA load data, SED did not identify a violation of GO 95, Rule 31.1.

E. Field Observations and Review of Physical Evidence

The subject Valley Oak tree was approximately 50 feet tall, rooted approximately 20 feet uphill from the 12 kV conductors, and had a diameter at breast height of 30 inches (See Attachment A - CAL FIRE Sketch 2). PG&E personnel determined that it failed at a height of approximately 19 feet above ground (See Figures 5-7). An extended vertical cavity in the subject tree is visible from the ground (See Figures 5 & 6).

Figure 5: Subject Valley Oak Tree (Source: PG&E)

Figure 6: Extended Cavity (Source: PG&E)

Figure 7: Top of Subject Trunk (Source: PG&E)

On October 8, 2017, a PG&E troubleman arrived at the incident location in response to a wire down. At 2258 hours, the troubleman reported three blown fuses at Fuse 751. The troubleman subsequently found three phases of downed conductor approximately twelve spans down of Fuse 751. The troubleman also observed an active fire in the area and four to five fire engines. On October 10, 2017, a PG&E lineman replaced the downed conductors and closed Fuse 751. – (Source: Attachment B)

On October 19, 2017, Charlie Laird, CAL FIRE Lead Investigator, arrived at the incident location. Mr. Laird subsequently identified a section of conductor suspended in trees and bushes; a limb from one of the trees (subject tree) and a small branch from the limb showed evidence of electrical arcing. Mr. Laird identified a downed Valley Oak tree

13

(subject tree) which had a large vertical open cavity in the upper portion of the trunk and a hollow area at its base. Additionally, Mr. Laird noted that portions of the tree were brittle and easily broken by hand. Mr. Laird collected four sections of conductor and the subject Valley Oak tree branch. CAL FIRE Fire Captain Jeremy Ward interviewed a nearby homeowner who was home at the time of the fire. The homeowner stated that he was awoken by his wife at approximately 2130 hours because the power had gone out. The homeowner subsequently walked outside his home to retrieve a flashlight from his truck and saw the fire. The homeowner also stated the fire was burning below his home near a portion of the downed Valley Oak tree, and he observed conductors arcing but was unsure if the arcing was located on or above the ground. (Source: Attachment A)

On June 11, 2018 at 0900 hours, SED met with Ryan McLean at PG&E's evidence storage location to view evidence PG&E had collected for each incident location. SED observed six sections of the subject Valley Oak tree. Each section of tree was hollow, which indicated that the tree had an extended cavity present throughout most of its trunk (See Figures 8-16). There was rams-horn present on sections one and four (See Figures 8 & 12). A rams-horn is new callous tissue that grows inward on the edge of the wound to create a columnar growth on each side of the wound; trees create rams-horns in response to massive trunk wounds.¹⁶ In section four, the cavity is open and off-center (See Figure 12). Open cavities decrease strength more than internal cavities because they remove the outer tree rings, which provide most of a trees' strength, and off-centered cavities can significantly reduce the strength of a tree.¹⁷

¹⁶ <u>https://www.austintreeexperts.com/blog/cavity-tree-internal-decay-hollow/</u>

¹⁷ Kane, Brian, et al. "COMPARING FORMUALE THAT ASSESS STRENGTH LOSS DUE TO DECAY IN TREES." Journal of Arboriculture, vol. 27, no. 2, Mar. 2001, pp. 80–81.

Figure 8: Section 1 of the subject tree. Note it is hollow.

Figure 9: Close-up view of Section 1. Note that it is hollow throughout its length.

Figure 10: Close-up view of Section 2. Note that it is hollow throughout its length.

Figure 11: Opposite end of Section 2.

Figure 12: Close-up view of Section 4. Note that it is hollow throughout its length.

Figure 13: Section 4 of the subject tree. Note the external cavity.

Figure 14: Close-up view of the external cavity.

Figure 15: Section 5 of the subject tree. Note the burn marks.

Figure 16: Note that the extended hollow/cavity ends at Section 5.

A study¹⁸ published in the Journal of Arboriculture examined the assessment methods used by arborists, tree surgeons, and foresters to determine if visual inspection of trees could accurately determine the amount of decay and/or area of cavities and the remaining strength. The study found that visual inspection was reasonably accurate, and accuracy increased with feedback. Values that resulted from the study were as follows: 0.4% and 2%, respectively, for mean deviations of predicted area of decay and predicted loss in strength from actual values; +12 to -15% and +8 to -8%, respectively, for the interquartile range for predicted decay area and strength loss. Based on the study published in the Journal of Arboriculture and the signs of decay and structural weakness (i.e., brittle areas of wood, large vertical open cavity in the upper portion of the trunk, and hollow area at the base of the trunk) observed by Mr. Laird and SED, it appears that the subject tree should have been identified as a hazard/facility protect tree by PG&E's qualified CUF during a routine VM PI due to the proximity of the tree to the subject conductor span and the visibility of the large vertical open cavity from the ground (See Figure 5).

Based on the evidence that SED reviewed and CAL FIRE's observations, SED's investigation determined the following:

¹⁸ Kennard, Deborah K., et al. "THE PREDICTABILITY OF TREE DECAY BASED ON VISUAL ASSESSMENTS." Journal of Arboriculture, vol. 22, no. 6, Nov. 1996, pp. 249.

PG&E's contracted CUF should have identified the decay compromising the strength of the subject tree during a routine VM PI. PG&E's VM activities, such as tree removal, are generally performed by specifically trained contractors who have extensive experience in vegetation related work around utility facilities. Contractors and employees are obligated to follow PG&E standards and should use them correctly to identify hazardous trees for removal. PG&E's DRPP describes various factors that contractors and employees should look for during VM patrols and/or pre-inspections. Under Section 2.6 "Hazard Trees/Facility Protection Trees", the document describes trees that should be identified as: "(T)rees or portions of trees that are dead, show signs of disease, decay ... AND may fall into or otherwise impact primary or secondary conductors, THEN PRESCRIBE work to make tree Facility Safe per Facility Protect and work Difficulty Classification Procedure."¹³ PG&E's VM HTRS Procedure describes a defect as a failure likelihood that causes "a reduction of wood strength (structural integrity)."¹⁴ Therefore, PG&E's VM procedures contained criteria that contractors and employees could have used to properly identify the subject tree as a hazard/facility protect tree during routine VM PIs. Consequently, SED concluded that PG&E followed poor VM practices by failing to properly identify a tree that had a visible extended open cavity and upon close inspection was noticeably internally decayed and structurally weakened. Therefore, SED found PG&E in violation of GO 95, Rule 31.1 for failing to maintain its electric facilities safely and properly by not identifying the subject tree as a hazard tree during its routine VM PI on April 25, 2017.

GO 95, Rule 35, requires a minimum radial clearance of 18 inches between 12 kV overhead conductors and vegetation. The subject tree contacted PG&E's 12 kV overhead conductors on October 8, 2017. Therefore, SED found PG&E in violation of GO 95, Rule 35 for failing to maintain the minimum required clearance between the subject 12 kV conductors and subject tree.

On August 22, 2018 at 1000 hours, SED met with Mr. Laird. SED received a hard copy of CAL FIRE's Investigation Report and viewed the evidence collected from the incident location. Mr. Laird stated that he arrived at the incident location on October 19, 2017. He stated that repair work had been conducted, so objects may have been moved from their original location (See Attachment A – CAL FIRE Sketch 1). Furthermore, because of how much the incident location had been disturbed, Mr. Laird could not conclusively determine where each piece of evidence was originally located. The evidence viewed was identified as follows:

- ... E1 was a section of conductor located approximately 30 feet from the specific origin area (SOA).
- ... E2 was a section of conductor located on the ground approximately 15 feet from the SOA. The conductor had significant charring and oxidation.
- ... E3 was a small Valley Oak branch located in the lower section of the SOA. The branch showed signs of arcing and abrasion and in conjunction with E5 (See Figures 17 & 18). Mr. Laird stated that the foliage appeared to be green when he initially arrived on scene.

- ... E4 was a section of conductor that was suspended in trees and bushes above the SOA.
- ... E5 was a section of conductor located approximately 5 feet from the SOA. Signs of charring and oxidation were present on conductor. One portion of the conductor, approximately 3-4 inches in length, showed signs of arcing, with arc beads present (See Figure 19).

Figure 17: Subject branch (E3).

Figure 18: Subject branch (E3).

Figure 19: Arcing on the subject conductor (E5).

IV. CAL FIRE's Investigation

Mr. Laird's investigation concluded that the subject Valley Oak tree failed and fell onto the subject conductor span. The subject conductor(s) failed because of the contact and subsequently arced, which ignited the fire.

SED's investigation correspondingly found that the subject Valley Oak tree failed and brought down the subject conductor span, which subsequently arced and started the fire. Furthermore, SED's review of PG&E's outage reports found that the three fuses at Fuse 751 (located immediately upstream of the incident location) had blown.

CAL FIRE identified no violations by PG&E.

V. Conclusion

Based on the evidence that SED reviewed, SED's investigation found the following:

- ... PG&E violated GO 95, Rule 31.1 by failing to maintain its facilities to allow for safe, proper, and adequate service. PG&E failed to identify the subject tree, which had an extended internal cavity and large vertical open cavity, as a hazard tree during the last VM PI. The extended internal cavity and large vertical open cavity weakened the trunk and caused the subject tree to fail, fall onto the subject conductors, and subsequently ignite the fire.
- ... PG&E violated GO 95, Rule 35 by failing to maintain the rule's minimum clearance requirements for the hazardous subject tree that fell into the overhead conductors.

If SED becomes aware of additional information that could modify SED's findings in this Incident Investigation Report, SED may re-open the investigation and may modify this report or take further actions as appropriate.

VI. Attachments

Attachment A – CAL FIRE Investigation Report – Case No. 17CALNU010487 Attachment B – PG&E Maacama Incident Description and Factual Summary Attachment C – PG&E Data Request #5 Response, Common Question #1 "Circuit Map"

ATTACHMENT A

CAL FIRE Investigation Report Case Number 17CALNU010487

ראו בוס	Jalifornia	ì			Wildla	nd Fire	e Investigat	ion	Incide	ent Nu	mber		17CALN	U0104	187
E-66a (REV.10-2013)					· .		Inci	dent E)ate		Oct 20	, 2017	7		
			1983) 1973 - 1975 1974 - 1975 1974 - 1975			Loc	ation					Ł			
Fire	Name	Region	Unit	В	att	Cc	ounty	<u>.</u>	City/Area	a					
YOU	NGS	CNR	LNU		13	So	noma		Healdsbu	rg		 	Fire Caus	e Class	s
		Origi	n Location				Latitude		Longi	tude			Electrica Line's I	Powe Down	r
0000995 00005	MAACAM/ RD. DEAD	A LN Heal -END	dsburg CA	95448			38 38.0440		-122 45	.7310		ł			-
	,						Authority		Time Re	ported			Date Rep	orted	
							SRA		09:48	PM		Sur	nday, Oct	08, 20 ⁻	17
		Prope	rty Burned				Response Are	a	Est. Tin	ne Ign			Date of Ig	nition	_
					Lassia Restaura	5-5-6-740, A 194 -	H14		09:40	РМ		Sur	nday, Oct	08, 20 ⁻	17
•						Con	ditions	9. 99 9							
Red Flag	Wea	ther Obser	ver	Device	Weather C	Observati	on Date		Time	Temp °I	RH	%	Wind Di	. N	APE
Y		PICWW		Digital	Clear, les	s than 1/	10 Oct 08, 20	017 -	10:00 PM	74	1	0	Shifting		5
Elevation	Slope %	Aspect	M	aterial Fi	rst Ignited		Arrival Fire Size	ac, Coi	ntrol Fire Si	ze ac.	Suppr	essic	n Actions	Prior t	o F
185	0	None		grass a	nd duff		1.00		89.00				No		
,		<u> </u>	*** *	т. Ц. н.	1	Caus	e Class			•					
AR	SON	C	AMPFIRE		DEBRIS BU	RNING	ELECTRICAL	POWER	र <u></u> EC	UIPME	NT		LIGH	INING	
Excl	uded	E	Excluded		Exclud	ied	Include	bd	E	xolude	ıd		Excl	uded	
PLAYING	WITH FIRE	R	AILROAD		SMOKI	NG	VEHICL	E	ОТ	HER/MI	ISC		·····		_
Excl	uded	E	Excluded		Exclud	ed	Exclude	эd	E	Exclude	ŀd	ļ			
									4 ⁵⁴ 9 9						
			7		Vict	im, Witi	ness, Subject	e de la compañía de l Ante compañía de la co							
					Vict	im, Witi /éhicle/	nèss, Subject Equipment								
			2 4 		Vict	im, Witi /ehicle/l	ness, Subject Equipment								
			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Vict	im, Witi /ehicle/l	nèss, Subject Equipment		- 199 						
					yict v	im, Witi 'éhicle/l	ness, Subject Equipment								
			A A A A A		Vict	im, Witi 'ehicle/l	ness, Subject Equipment								
					Vict	im, Witi 'éhicle/l	ness, Subject Equipment								
			A The second sec		Viet	im, Witi 'ehicle/i	ness, Subject Equipment								
					Vict	im, Witi 'éhicle/i	ness, Subject Equipment								
					Vict	im, Witi 'ehicle/	ness, Subject Equipment								
					Vict	im, Witi 'éhicle/	ness, Subject Equipment								
					Vict	im, Witi 'ehicle/	ness, Subject Equipment								
					Vict	ím, Witi ′éhicle/	ness, Subject Equipment								
					Vict	im, Witi 'ehicle/	ness, Subject Equipment								
					Vict	ím, Witi 'éhicle/	ness, Subject Equipment								
					Vict	im, Witi 'ehicle/	ness, Subject Equipment								
					Vict	ím, Witi /ehicle/	ness, Subject Equipment								
					Vict	im, Witi 'éhiclê/i	ness, Subject Equipment								
					Vict	ím, Witi 'ehicle/	ness, Subject Equipment								
					Vict	im, Witi 'éhiclê/i	ness, Subject Equipment								
					Vict	ím, Witi /ehicle/	ness, Subject Equipment								

Ļ

State of California	Wildland Fire Investigation	Incident Number	17CALNU010487
GAL FIRE LE-66a (REV.10-2013)		Incident Date	Oct 20, 2017
the second s	NARRATIVE Details of the investigation.		
See LE-71	· · · · · · · · · · · · · · · · · · ·	······································	
,			
r -			
• •			
			•
· · · ·			

State of Califo	rnia		Wildl	and Fire	e Investig	gatio	n Ir	cident N	lumber	17CAL	NU0104
, AL FIRE E-66a (REV.10-20	13)							Incident	Date	Oct	20, 2017
						•					
				·					-		
•											
									,		
							ı				
											·
,											
DISPATCH	RPT FC-34	FIRE	RPT FC-18		HOTOS		CHP RPT		SKETCH		DIAGRA
SUPPLEMEN	TAL RPT LE-71	EVID	RPT LE-75e	🛛 РНОТ	OS LE-75p		MAPS	ОТН	IER:	i	
eporting Officer:	William C Laird				Signature	Z	P			• • • • • • • • • • • • • • • • • • • •	
Date Report Completed:Jul 10, 2018				•••••••••••••••••••••••••••••••••••••••	Badge Number 2369						
Reviewing Officer: Joe Backust N					Signature:						
					<u> </u>			120	De-	Young	js 029

Incident Location				Incident S	tatus: CLS
Location: 995 MAACAN Lo Cross: YOUNGS R City: GEYSERVIL Loc Com:	MA LN ,GEYSERVILLE D L County:	SONOMA	Hi Cross: Map Page:	Apartment: DEAD-END 324_A_1	
Latitude: 38.628467 Longitude: -122.7670 Legal: 17_T09N_R UTM: 10 520276	61 08w_M 4275574	Agency: Jurisdiction; DPA Agency:	CAGEY CAGEY CAGEY	Dispatch Zone: Battalion: Resp. Area: Atom:	2 1413 H14 H14
LEGAL 17	_T09N_R08W_M	0			
Reporting Party Inform	mation				·
Caller Name: BC TURB Caller Loc:	BEVILLE	······		Caller Phone: Call Source: FLD	
Incident Type/Response	e information				·····
Final Incident Type: Dispatch Level: H Incident Date/Time Sur	FIRE, WILDLAND Respons	Initial ae Plan: FWLR	Incident Type R	: FIRE, WILDLAND esponse Level: 1	
Incident Call Rec.: Incident Keystroke: Incident Entry: Incident Dispatch: Incident Closed:	10/20/2017 8:40:: 10/20/2017 8:51:: 10/20/2017 8:52:: 11/04/2017 7:25::	32 28 38 37	Personnel ID GWHITE	CAD Works LNUCA	station DO2
Status:	Contained:			Controlled:	····
Fire Report Person: Investigation Report	CHARLIE LA Person: CHARLIE LA	AIRD AIRD	,	Total Acres Burned	:
Time Summary: WAI GEN 8:51:28 8:52	CLS :38 7:25:37				
Unit Status Details					
<u>Incident Remarks:</u> 10/20/2017 8:51:28	INCIDENT CREATED THE CENTRAL LNU C PER CHIEF TURBEVI UP WITH IA DONE T DIVERTED AS THEY TURBEVILLE THIS I 21:51.	PER CHIEF TURB OMPLEX. CAD CA LLE, RESOURCES HE HEALDSBURG WERE RESPONDIN NCIDENT WAS DI	EVILLE. YOUNGS THUP. WAS NEVEN ASSIGNED TO TH CAL FIRE ENGINI G TO THE TUBBS SPATCHED BY REN	INCIDENT. PART OF R CREATED IN CAD. HE TUBBS MOPPED IT ES THAT WERE . PER CHIEF DOM ON 10/8/17 AT	GWHITE

Interagency Report of Incident and Dispatch Action

FREQA	10/20/2017	8:52:3	8		GWHITE	LNUCAD02
Command: LNU	WEST SR:14	Primary	Tactical:CDF TAC 6	Alternate	Tactical:CDF TAC 10	Air to Air:AIR
TAC 6 Air t	co Ground:CD	F A/G 2	Victor:122.575			

Incident Loc	cation				Inci	dent Status: CLS
Location: Lo Cross: City: Loc Com:	HWY 101 MP OOJ 19088 BLK	005.00/SQU Cour S HWY 101	AW ROCK @ =L(38 aty: MENDOCID ,HOPLAND	.912172,-123.0531 Hi Crc NO Map P	79) ,HOPLAND Apar oss: age: 200/200	tment:
Latitude: Longitude: Legal: UTM:	38.912172 -123.05317 02_T12N_R1 10 495389	9 1W_M 4307032	Agency: Jurisdi DPA Age	CAMEU ction: CAHOP ncy: CAMEU	Dispatch Battalion Resp. Are Atom:	Zone: OTHER n: ea: MENDOC
LEGAL	02_	T12N_R11W_M		0		
Caller Name Caller Loc Incident Typ	e: : pe/Response	Informatio	<u>n</u>		Caller Phone: Call Source:	c2c
Final Incid Dispatch L Incident Dat Incident C	dent Type: 1 evel: H te/Time Sum all Rec.:	MED, TRAFFI	C COLLISION I Response Plan:	Initial Incident : BCN1	Type: MED, TRAFFIC Response Level:	COLLISION
Incident K Incident E Incident D Incident C Fire Information	eystroke: ntry: ispatch: losed: ation	09/01/2017 09/01/2017 09/01/2017 09/01/2017	17:48:08 17:48:08 17:48:08 19:04:19	Personnel CISWKS	ID CA	D Workstation CISWKS
Status: Fire Repor Investigat	t Person: ion Report	Cor NA Person:	itained:		Controlled: Total Acres 1	Burned ;
<u>Time Summar</u> GEN 17:48:08	<u>y:</u> CLS 19:04:	19				
<u>Unit Status</u>	Details]				
<u>Incident Re</u> 09/01/2017 09/01/2017 09/01/2017 09/01/2017	<u>marks:</u> 17:48:20 17:48:20 17:48:20 17:48:21	Exter at 09/01/2 Medical Ca Party Call RED MOTORC Request fo	nal Remarks fro 017-17:48:20 se #: 17006537 er. YCLE ON ITS SIN or CLD(LNU-CLD)	om MEU for MEU:CA has been aborted DEUNKNOWN INJ from MEU MEUCAD	HOP:17012514 Statu . Abort text: 10. 02 CROSGROVE, KELL	s GEN CISWKS 4th MASSA MASSA EN D. CISWKS

Incident Number: 17-CAMEU 010487 Incident Name: HWY 101 MP 005.00/SQUAW R Event Number: 17010137

Interagency Report of Incident and Dispatch Action

NEWINC 09/01/2017 17:48:20	CISWKS	CISWKS
From MEU: Key: MEU:CAHOP: 17012514. County: MENDOCINO.	RA: MENDOC. Type: MTC (MTC).	Site incno:
CAMEU010487/2017. Jur incno: CAHOP0000000210/2017. Nam	e: HWY 101 MP 005.00/SQUAW R.	Loc: HWY 101 MP
005.00/SQUAW ROCK @ =L(38.912172,-123.053179) ,HOPLAND	. Loc cmts: 19088 BLK S HWY	101 , HOPLAND.
Lat/Lon: 38912172/-123053179. Map: 102. Legal: 02_T12N	_R11W_M. Remarks: none. Hazard	is: none.
CAD-CIS 09/01/2017 17:48:21		POLLRÖSI
Successful DSP from MEU to LNU. Incident site # 010487 , Auto-Aid Id LNU-CLD.Event Identifiers: CAD: MEU, Age temp Id: , Kind/Type needed:, Qual. needed:, Cat descr needed:, Requesting User Agc:, Req. User:, Fill resour Cell phone:, Remarks:.	. Event #17012514. Resources: : CAHOP, Event #:17012514, Red : , Cat Xlat: NO CAT, Ross Tes Ce Ros ID: , Ros Name: , Res I	CLD (CLD) ROS ID quest #:, CAD kt: , When STD:, Res ETA:,
ROSDEFER 09/01/2017 18:32:28	SPUTMAN	LNUCAD04
Closed Received Request for CADRequestID , Resource CL By SPUTMAN at wks LNUCAD04;	D, Event Number CAMEU17010137	; Action: DEFER;

FDID	Sta	ate	Date	Station	Incident No	Exposure
49555	Calif	ornia	10-20-2017	LNU	00 10487	0
Basic						
Incident Type		Forest w	oode or wildland fire	·····		
Tuoidaut Aid		rolest, w				
Aid Given or	Pacaivad	Automat	ic aid received		. •	
Incident Dates	Received.	Automat				
Incident Dates	Alarm	10-08-20	17 21-48-00		,	
	Arrival	10-08-20	17 22:00:00			
CAD Reported	Contained Time:	10 00 20				
Actual Conta	ined Time:	10-09-20	17 17:26:00			
(Controlled:	10-09-20	17 17:26:00			
Last Ur	nit Cleared:	10-09-20	17 17:26:00			
Shifts & Alarms	•					
Shift	or Platoon:					
	Alarms:					
· · · · · · · · · · · · · · · · · · ·	District:	141				
Actions Taken						
	1:	Contain	fire (wildland)			
Resources					·	
~		Apparatus		Perso	onnel	
S	uppression:	0		0		
	EMS:	0		0		
	Other:	0 December		U vi kovicen tile ek		
		Resource	e counts do not inclu	de ald received in	resources.	
Losses		Losses		Droff	re Value	
	Property'	750000		Tion		
	Content:	100000				
Casualties						
Cusulines		Deaths		Injur	ies	
F	ire Service:	0		0		
Civilian/Oth	ner Service:	0		0		
Other Informati	on					
Detector Alerted	Occupants:					
Hazardou	s Materials Released:					
Mixed Us	e Property:					
Pro	operty Use:	Undeter	mined			

Location

Youngs 034

https://www.cdf.nfirsonline.com/nfirsCDF/49555/nfirs.nsf/PrintIncident?OnenAgent&Tvp... 2/26/2019

Location Type: Adjacent to Lat/Long: 38.634067 / -122.762183 Street Address: 00000995 MAACAMA Lane Apt./Suite/Room: City: Healdsburg State: California ZipCode: 95448 Cross Street or Directions: YOUNGS RD, DEAD-END

Officer in Charge

ID: Name: Marshall Turbeville Position or rank: Assignment: Date Signed Off: 10-20-2017

Reporter

ID: Name: Charlie Laird Position or rank: FC Assignment: Date Signed Off: 10-20-2017

Remarks

Fin Type = FWL

Wildland Fire

Area Type: Rural/urban or suburban

CalFile Fire Cause: Electrical Power

Fire Cause Subcategory 1: Line's Down

Fire Cause Subcategory 2:

Wildland Fire Cause: Other cause

Area Type: Rural/urban or suburban

Wildland Fire Cause: Other cause

Human Factors Contributing To Ignition

1: None

Factors Contributing to Ignition:

1: High wind

Fire Suppression Factors:

1: Power lines down/arcing

Heat Source: Heat source: other

Mobile Property Type:

Equipment Involved: Electrical power (utility) line

Youngs 035

Weather Infomation	· · · · · · · · · · · · · · · · · · ·
Weather Station ID:	
Weather Type:	Clear, less than 1/10 cloud cover
Wind Direction:	Shifting winds
Wind Speed MPH:	5
Air Temperature:	74
Relative Humidity	10
Fuel Moisture:	10
Fire Danger Deting:	
File Danger Kating.	3
Number of Buildings	3
Threatened	3
Federal Responsibility Area	
Acres Burned:	0.00
State Responsibility Area	80.00
Acres Burned:	02.00
Local Responsibility Area	0.00
Acres Burned:	00.00
Total Acres Burned:	89.00
Primary Crops Damaged	·
Property Management	
Property Ownership at fire origin:	Tax paying
Fed Agency Code:	
Percentage of the total acre	s burned for each ownership type.
Ownership	% of Total Acres Burned
Private - Tax Paying:	100
NFDRS Fuel Model At	E. Hawdwood litter
Origin:	
Person Responsible for Fire	
Person Involved:	
Gender:	
Ago. Activity:	
Right of Way	······································
Horizonal distance from	
ROW:	
Type of ROW:	
Fire Behavior	
Elevation:	185
Relative Position on Slope:	
Aspect:	None
Flame Length:	
Kate of Spread (Chains per	
Hour):	
SUPPLEMENTARY INVESTIGATION REPORT



STATE OF CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION LE 71 (REV. 7/2011)

DAY	MONTH	DATE	YEAR	COUNTY	REGION	UNIT	CASE NUMBER
SUN	ОСТ	10/8	2017	Sonoma	CNR	LNU	

1 (All times and distances are approximate)

2

On the night of October 8th 2017 I was assigned to Engine 1473 as the company officer. Between 9PM and 10PM Engine 1473 self dispatched from Healdsburg Station 48 to a vegetation fire with power lines down in the area of Maacama Lane cross of Chalk Hill Road. The dispatch came across the Redwood Empire Dispatch Communications Authority(REDCOM) dispatch channel. Engine 1473 went responding on both Control 2(a REDCOM channel) and the Cal Fire St. Helena Emergency Command Center channel(LNU Local). It took roughly 10-15 minutes to arrive in the

9 general area of the fire.

10

Once in the general area of the fire, Chief Marshall Tuberville(Battalion 1411) guided both Engine 11 1463 and 1473 into the fire. During this time all radio traffic on all dispatch channels, both REDCOM 12 and LNU Local were overwhelmed by fire dispatches and priority traffic. No report on conditions was 13 able to be given to either command center from that time forward. There is also no record of when 14 Engine 1473 arrived at scene. My initial size up of the fire was a 1/2 acre vegetation fire with a slow 15 rate of spread with one structure on fire and one structure threatened with power lines down in the 16 fire and on the roadway. The fire's location was as dispatched through REDCOM. Engine 1473 17 became Maacama IC. The incident name was changed to "Youngs" sometime the next day. I was 18 not present when the name change took place. 19

20

Engines 1463 and 1473 were the first fire suppression resources at scene. I saw the power line down in the road which was cordoned off for safety. There was another powerline and or a broken off part of the same powerline which had fallen in the burn close to the left flank. This line was hung up in the canopy and was arching both the ground and on a 30 foot tall tree trunk.

25

After this initial size up I led my engine crew and the firefighters from Engine 1463 up the right flank with a progressive hoselay. Both crews stopped forward progress and stopped the spread of the fire to the structure connected to the fully involved structure. The fully involved structure was made up

OFFICERS INITIALS

of a chicken coup and an open car port. It was at this time which I saw three vehicles fully involved in and near the carport. It took roughly 30 minutes to wrap the fire with hose and another hour to complete handline construction around the fire. The total size of the fire ended up at around ½ acre and the house which shared an overhang with the fully involved carport was saved. Engines from Geyserville, Healdsburg, and Forestville Fire Departments arrived during the suppression efforts and took part in fire suppression and mop up.

7

8 Pacific Gas and Electric(PG and E) showed up roughly 45 minutes after I arrived at scene. The PG
9 and E employee deenergized the downed power lines which were spotted upon my arrival to the
10 scene. It is not known if he deenergized all other lines in the area which had not fallen.

11

After the power lines were deenergized, engine crews mopped up in the area where the power line 12 had been laying on the ground near the left frank. It was at this point where I talked to Chief 13 Marshall Turbeville directly and it was recommended that I start releasing resources as soon as 14 possible due to the amount of fires going on in Sonoma County. Chief Marshall Turbeville also 15 instructed me to mop up in a timely manner so we would leave the suppressed fire as soon as I felt it 16 would not jump our containment lines or rekindle. Chief Turbeville believed that the Tubbs fire would 17 burn through that location within a matter of hours. Through the rest of our mop up phase Chief 18 Turbeville would periodically check in on our status and repeat those same instructions multiple 19 20 times over the radio.

21

It was at this time that I conducted a preliminary fire investigation. I narrowed down my General 22 Origin Area(GOA) to the area by the left flank where the powerline was down. I walked around the 23 GOA twice, once in either direction. I determined this to be the GOA based on the fact that this was 24 where I saw the downed power line actively arching on a 30 foot tall tree trunk and the ground itself. 25 I did not take any weather or Lat/Long for the fire. The only weather information I noted was that 26 winds were approximately 10-15 miles per hour with gusts somewhere around 45 miles per hour. 27 The predominant wind was out of the East although we had frequent wind shifts. The temperature I 28 estimated to be in the 65-80 degree range. This is a very rough estimate as we had such a large 29 variation in wind speeds resulting in changes in wind chill factors. My investigation lead me to 30 believe that the fire spread from the GOA up the hill in a southern direction to catch the vehicles and 31 carport/chicken coup on fire. This is the area we referred to as the head of the fire. The fire also 32. backed down the hillside in the leaf litter until it reached the road. Predominant eastern winds 33

- 1 allowed the fire to spread west of the GOA approximately 100-150 feet which we called the right
- 2 flank. Erratic winds may have assisted the fire in spreading east approximately 30-40 feet to what
- 3 was referred to as the left flank.
- 4
- 5 During my preliminary investigation I made a note of cause classes which I saw or didn't see in order
- 6 to rule out what may have caused this fire:
- 7 *I ruled out equipment as I did not see any signs of equipment working in the area.
- 8 *I ruled out railroads as there were no railroad tracks in the area.
- 9 *I ruled out campfires as there were no signs of a campfire of any type.
- 10 *I ruled out lightning as there was no lightning in the area that night.
- 11 *I ruled out playing with fire as I did not see any signs of playing with fire. No one was in the area of
- 12 the fire or seen fleeing the scene.
- 13 *I ruled out debris burning as I did not see any signs of debris burning in the area.
- 14 I ruled out vehicles as there were no vehicles in close proximity to the GOA. The fire burned uphill to
- 15 the vehicles catching them on fire. Upon further investigation none of the parked/burned vehicles
- 16 were driven that day.
- 17 *I ruled out smoking as I saw no evidence of smoking.
- 18 *I ruled out miscellaneous as I did not see anything out of the ordinary in the GOA.
- 19 *I saw no evidence of arson though I cannot rule this factor out.
- 20 *Lincluded power lines as I saw the downed power line on the ground actively arching in the fire
- 21 itself. This leads me to believe the fire was caused by the downed power line.
- 22

I released the Forestville, Geyserville, and Healdsburg engines approximately forty five minutes after
 I conducted this fire investigation. At this time Engine 1463 and Engine 1473's crews continued to

25 mop up while I took Engine 1473 to get a tank of water to continue mop up operations. This took

- 26 approximately thirty minutes. Upon returning to the scene we finished mop up with the 500 gallons I
- 27 had shuttled back. It was at this time that I walked the perimeter of the fire as I had the firefighters
- grid the interior of the fire. I determined it was sufficiently mopped up according the Chief
- 29 Turbeville's instructions. I felt comfortable leaving the fire without the threat of a rekindle.
- 30
- 31 Engine 1463 and Engine 1473 left the scene sometime between 12AM and 2AM that night.
- 32 End of report.
- 33

3 OF 4

OFFICERS INITIA

	1					
1						
2			•			
3						
4		,				
5						
6						
7						
8						
9						
10		• •	·			
11						
12						
13			•			
14						
15						
16						
17					,	
18						
19						
20		•				
21						
22						
23						
24						
25						
	PRINTE	DNAME	SIGNA	THRE I	BADGE NUMBE	R
	Micha	1 Mayol	mil	M	3879	7/107708

OFFICERS INITIAL S

CAL	SUPPL	EMENT.	ARY INVE	STIGATION REF	PORT	INC		
	STATE OF CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION LE 71 (REV. 7/2011)						17CALNU010487 case name YOUNGS	
DAY	MONTH	DATE	YEAR	COUNTY	REGION	UNIT	CASE NUMBER	
SUN	OCT	8	2017	SONOMA	CNR	LNU		

1 WITNESS STATEMENT

Elias VALENCIA
 DOB:
 CA DL:
 Male,

10 On Thursday, October 19th, 2017, Elias VALENCIA met us near the origin of the YOUNGS 11 fire on Maacama Lane, near Healdsburg, California. VALENCIA said he was at home when the fire 12 started. VALENCIA said when he first saw the fire, he saw wires arcing and fire going up the hill 13 towards his home. VALENCIA described the fire was about the size of a truck with flames about 14 three feet tall. He said he saw it when he went outside to get a flashlight from his truck because the 15 power went out. He said it was about 9:30 PM on Sunday (October 8th, 2017) when the power went 16 out. He said his family, also at the house, left, but he stayed until after the fire department came. 17 He said the fire department had the fire stopped, but it later restarted and burned his house after he 18 left about 11:30 PM. VALECIA said he could not tell if the arcing he saw was on or above the 19 ground. VALENCIA told us the address for his home, which he rented, was 20 VALENCIA indicated he first saw the fire near a portion of a down oak tree. When asked if he heard anything before the power went out, he said no. VALENCIA said he went to 21 22 sleep about 8:30 PM because he is up early for work, and his wife woke him up when she began 23 calling for a flashlight because the power was out.

24

7

8

9

VALENCIA described the weather as windy and pointed in a direction to the south (thedirection the main fire had traveled).

PRINTED NAME	SIGNATURE	BADGE NUMBER	DATE
Jeremy Ward	Sow	4005	10-20-2017

Youngs 041

SUPPLEMENTARY INVESTIGATION REPORT STATE OF CALIFORNIA DEPARTMENT OF EODESTRY AND FIRE PROTECTION							INCIDENT NUMBER 17CALNU010487		
DAY	MONTH	DATE	YEAR	COUNTY	REGION	UNIT	CASE NUMBER		
SUN	OCT	8	2017	SONOMA	CNR	LNU			

On Thursday, October 19th, 2017, I was assigned with two other Cal Fire officers to
 investigate a fire that occurred Sunday, October 8th, 2017. The fire occurred in the area of Maacama
 Lane, off Young Road, near Healdsburg, California.

4

5 While at scene, I met a nearby resident who identified himself as Alistair DUNN. I explained 6 to DUNN I was there to assist with the investigation of the fire. DUNN said he heard the fire started 7 from an electrical wire that fell. He suggested we talk to Geyserville Fire Department fire fighters, as 8 well as Tom GORE, who he said worked as a vineyard manager for Constellation Brands. He 9 indicated Constellation Brands owned or operated some of the vineyards in the area. DUNN 10 provided a phone number for GORE.

11

12 I then met with other Cal Fire officers, Charlie Laird and Mike Keating at the north end of the
13 fire near the origin. Cal Fire Battalion Chief Marshall Turbeville also arrived and provided
14 information as to the fire's location when he arrived at scene on Sunday October 8th.

15

I phoned Tom GORE at the number provided by DUNN at approximately 11:50 AM. GORE 16 told me an employee who lived on site told him a P.G. & E. line fell and started the fire. He said the 17 fire department responded and thought they had put the fire out, but it later restarted. GORE 18 provided me the resident's name and phone number. GORE said it was the resident, Elias 19 20 VALENCIA, who reported the fire to him. GORE was not able to respond the night of the fire so he , another Constellation Brands employee. GORE offered to 21 sent Tony BERTOLLI (22 call VALENCIA and have him meet us at the scene. I asked him to do so and phoned VALENCIA to 23 confirm. VALENCIA agreed to meet us.

24

VALENCIA arrived at scene and provided an account of events around the time of the fire.
 VALENCIA's statement is described in detail in a separate supplemental report. VALENCIA
 identified an area where he first saw the fire which he described as about the size of a truck.

OFFICERS INITIALS

1 Based on the information provided by Chief Turbeville and VALENCIA, Officer Keating and I

- 2 assisted Officer Laird with processing the scene by placing fire pattern indicator flags, identifying,
- 3 and collecting evidence.

PRINTED NAME	SIGNATURE	BADGE NUMBER	DATE
Jeremy Ward	tould	4005	10-20-2017

OFFICERS INITIAL

CAL	SUPPL	EMENT	ARY INVE	STIGATION REI	PORT	IN	
FIRE	STATE OF DEPARTM		17CALNU010487				
V	LE 71 (RE)	V. 7/2011)					
DAY	MONTH	DATE	YEAR	COUNTY	REGION	UNIT	CASE NUMBER
SUN	OCT	8	2017	SONOMA	NORTH	LNU	

- 1 All times and measurements are approximate.
- 2
- On Sunday, October 8, 2017, at 9:48 PM, Redwood Empire Dispatch Communications Authority 3 (REDCOM) dispatched a vegetation fire in the area of 995 Maacama Lane in the community of 4 Heladsburg. CAL FIRE resources as well as local government resources responded to the incident. 5 The incident was named Youngs and was run on REDCOM frequencies due to overwhelming radio 6 traffic from multiple incidents occurring in the Unit at the time. The fire was initially contained at 7 approximately one acre and subsequently burned approximately 89 acres. To my knowledge, three 8 9 structures and multiple vehicles were damaged by the fire. 10 On Wednesday October 18, 2017, I was advised of the Youngs fire and requested to conduct an 11 12 origin and cause investigation. 13 I responded to the fire on Thursday October 19, and arrived at scene at approximately 9:48 AM. I 14 met with CAL FIRE Fire Captain Mike KEATING and CAL FIRE Fire Captain Jeremy WARD who 15 16 were assigned to assist with the investigation. 17 18 Captain WARD told me the following in summary; WARD had spoken to a nearby resident who identified himself as Alistair DUNN. DUNN told 19 him he had heard the fire started from electrical lines which fell. DUNN told him Tom GORE 20 was a vineyard manager for Constellation Brands which owned and or operated vineyards in 21. the area. DUNN provided Captain WARD a telephone number for GORE. 22 23 I was told CAL FIRE Battalion Chief Marshall TURBEVILLE was one of the initial responders at the 24 time of the fire. I called Chief TURBEVILLE and requested he meet me at the fire. Chief 25 26 TURBEVILLE arrived at scene and told me the following in summary; TURBEVILLE was the first resource at scene the night of the fire. Fire engines which were 27 responding to a different fire, were diverted to the Youngs fire. Due to the large amount of fire 28

OFFICERS INITIALS

activity and large amount of radio traffic on the CAL FIRE dispatch frequencies, this incident
 was managed through REDCOM. He estimated the fire was approximately one acre in size.
 Chief TURBEVILLE told me he saw a power line or lines down on the ground arcing at the
 time of the fire and he showed me the location. Chief TURBEVILLE did not know when the
 additional acres burned.

6

. .

7 Captain WARD contacted GORE via telephone who told him the following in summary (See WARD's8 LE-71);

9 Elias VALENCIA was an employee who lived on site. VALENCIA reported the fire to GORE
10 and told him a Pacific Gas and Electric (PG&E) power line fell and started the fire. GORE
11 contacted VALENCIA and requested him to return to the fire to speak with us.

12

VALENCIA arrived at scene and was interviewed by WARD. VALENCIA told Captain WARD the
following in summary (See WARD's LE-71);

- VALENCIA was home the night of the fire. He went to sleep at approximately 8:30 PM and 15 was woken up by his wife at approximately 9:30 PM. She told VALENCIA the power went out 16 and asked him to get flashlights. When VALENCIA went outside to his truck to retrieve a 17 18 flashlight he saw the fire. VALENCIA described the fire as about the size of a truck with flames about three feet tall. The fire was below his home, near a portion of a down oak tree, 19 burning up hill towards his home. VALENCIA said he saw wires arcing but was not sure if the 20 arcing was on or above the ground. VALENCIA's FAMILY evacuated but he stayed until 21 about 11:30 PM. VALENCIA said the fire department had the fire stopped but it later 22 23 restarted and burned his house after he left.
- 24

Captain KEATING, Captain WARD and I began walking laps around the area Chief TURBEVILLE 25 initially saw burning. Within this area was the location where VALENCIA described seeing the fire, 26 27 described as near the downed oak tree and the size of a truck. A power pole was located on either side of the area and electrical conductor lines were noted strung between them. Multiple sections of 28 electrical conductor line were found in and around the area, located on the ground as well as a 29 section suspended in trees and bushes. Evidence of saw work was noted throughout the area 30 located under the electrical conductor lines, standing trees as well as branches on the ground 31 32 showed fresh cuts with no charring noted.

33

Identifying fire pattern indicators including but not limited to; angle of char, sooting, staining, 1 protection and ash deposits, we identified a general origin area (GOA) of approximately forty feet by 2 forty feet. We used colored pin flags to mark fire pattern indicators as they were located; red flags З represented advancing fire pattern indicators, yellow flags represented lateral fire pattern indicators, 4 5 and blue flags represented backing fire pattern indicators. We continued identifying fire pattern 6 indicators until we identified a specific origin area (SOA) of approximately ten feet by ten feet. The SOA was in-line with the portion of the downed oak tree which also appeared to have had saw work 7 performed. A section of conductor line was suspended in trees and bushes above the lower portion 8 9 of the SOA. One limb, the conductor was suspended on, showed evidence of electrical arcing. A 10 small branch was suspended with the limb and the conductor line, one end of it showed what appeared to be a fresh saw cut, it had evidence of electrical arcing. Green flagging was tied to the 11 12 conductor line to identify it in the digital photographs. The area had been heavily disturbed with 13 evidence of foot traffic and vegetation being cut, moved and or removed. A visual search of the SOA 14 found no ignition source for the fire.

15

The portion of downed oak tree appeared to have broken from the oak tree trunk located just uphill 16 17 of it (See image IMG 0110.JPG). The top of the oak tree trunk had a large vertical open cavity and 18 a spot, located in the upper portion, where daylight could be seen through it (See image 19 IMG 0061.JPG). The base of the portion of downed oak tree had a hollow area (See images IMG 0113.JPG and IMG 0114.JPG). Areas of it were brittle and were easily broken by hand. The 20 21 portion of downed oak tree was located, on the ground, extending underneath the overhead 22 electrical conductors and communication line. Due to the saw work, I could not tell the dimensions 23 of it at the time it fell.

24

1 took digital photographs of the sections of electrical conductor line which were located and
collected them as evidence. I also took digital photographs of the small branch with evidence of
electrical arcing and collected it as evidence. I transported the evidence items and secured them in
the CAL FIRE Santa Rosa evidence storage.

29

On Tuesday, November 21, 2017, at 2:45 PM, I spoke to CAL FIRE Fire Apparatus Engineer
 Michael MAUEL. MAUEL told me the following in summary:

Engineer MAUEL was the company officer on Engine 1473 on October 8, 2017 and
 responded to the Youngs Incident. He was one of the first arriving resources and estimated

OFFICERS INITIALS

the fire at one half of an acre in size. He described seeing an energized electrical conductor 1 line down and actively arcing on the left flank of the fire, and was not sure if it was one line or 2 multiple. He said Pacific Gas and Electric arrived at scene approximately 30 minutes to an 3 hour after his arrival and de-energized the conductor line or lines. Engineer MAUEL did not 4 know what caused the conductor line or lines to come down. He saw two vehicles and what 5 appeared to be a chicken coop near a residence involved with fire. Once contained, handline 6 was constructed around the fire. Engineer MAUEL left the scene between approximately 7 8 12:30 and 1:00 AM.

9

10 I reviewed a PG&E document titled "20 Day Report for Electric Incident Report EI171008L" (See
attached). The document described an incident which occurred on 10/8/2017, located at 955
Maacama Lane, in Healdsburg. The Description of Incident included the following:

PG&E found that a Valley Oak tree (not a White Oak as initially reported) had broken near its mid-section and fallen on to the Fulton 1102 (12Kv) Circuit, resulting in wires down. Based on these measurements, the Valley Oak tree had a diameter at breast height of approximately 30 inches and was rooted uphill approximately 20 feet from the distribution conductors.

17

18 It is my opinion the above-mentioned report is referencing the oak tree which fell in the GOA of the 19 Youngs Fire. This is supported by witness reports of seeing electrical conductors arcing in the area 20 at the time of the fire as well as the portion of tree which I saw down on the ground and the sections 21 of electrical conductor found.

22

23 Conclusion / Determination

Based on my training, experience and the facts and evidence gathered during the investigation, it is my opinion the subject oak tree failed and fell, severing the energized electrical conductor(s). The energized electrical conductor(s) arced and ignited receptive fuel.

- 27
- 28
- 29
- 30 31
- PRINTED NAME
 SIGNATURE
 BADGE NUMBER
 DATE

 Charlie Laird
 2369
 05/22/2018

 4 OF 4
 OFFICERS INITIALS of

Youngs 047





Listing of [1 62 file(s)	Folder: Phot 0 subfolder(ographs] (s) 34	Ph at 0.0	oto log.tx 3:48:13 PM MB (356,55	t 4 on 3/21/2018 50,506 byte(s))
Filename	Date/time o	ligitized		Caption	
IMG_0054.JPG	10/19/2017	12:00:04	PM	View of	area TURBEVILLE initially saw
IMG_0055.JPG	10/19/2017	12:00:14	PM	View of	area TURBEVILLE initially saw
IMG_0056.JPG	10/19/2017	12:00:35	РМ	View of	area TURBEVILLE initially saw
IMG_0057.JPG	10/19/2017	12:00:55	ΡM	View of	area TURBEVILLE initially saw
IMG_0058.JPG	10/19/2017	12:01:07	РМ	View of	power pole across driveway with tire
IMG_0059.JPG	10/19/2017	12:01:31	PM	View of	tire marks and conductor line on
IMG_0060.JPG	10/19/2017	12:01:43	РМ	View of	area TURBEVILLE initially saw
IMG_0061.JPG	10/19/2017	12:02:06	PM	View of	oak tree.
IMG_0062.JPG	10/19/2017	12:02:12	PM	View of	portion of oak tree on the ground
IMG_0063.JPG	10/19/2017	12:02:42	ΡM	View of	conductor on ground.
IMG_0064.JPG	10/19/2017	12:03:11	. PM	View of	conductor on ground.
IMG_0065.JPG	10/19/2017	12:06:07	РМ	View of	conductor on ground.
IMG_0066.JPG	10/19/20 1 7	12:07:17	РМ	View of	conductor on ground.
IMG_0067.JPG	10/19/2017	1:14:50	PM	View of	power pole.
IMG_0068.JPG	10/19/2017	1:15:13	PM	View of	power pole hardware.
IMG_0069.JPG	10/19/2017	1:15:30	PM	View of	base of power pole.
IMG_0070.JPG	10/19/2017	1:16:36	PM	View of	power pole across driveway.
IMG_0071.JPG	10/19/2017	1:16:46	PM	View of	power pole hardware across driveway.
IMG_0072.JPG	10/19/2017	1:17:15	PM	View of	base of power pole across driveway.
IMG_0073.JPG	10/19/2017	1:24:23	PM	View of	Evidence Item 1.
IMG_0074.JPG	10/19/2017	1:24:28	PM	View of	Evidence Item 1.
IMG_0075.JPG	10/19/2017	1:40:38	PM	View of	conductor on ground.
IMG_0076.JPG	10/19/2017	1:40:47	РМ	View of	conductor on ground.
IMG_0077.JPG	10/19/2017	1:40:57	РM	View of	conductor on ground.
IMG_0078.JPG	10/19/2017	1:44:59	PM	View of	Evidence Item 2.
IMG_0079.JPG	10/19/2017	1:45:03	РМ	View of	Evidence Item 2.
IMG_0080.JPG	10/19/2017	1:48:29	PM	View of	flag field.
IMG_0081.JPG	10/19/2017	1:48:41	PM	View of	flag field.
IMG_0082.JPG	10/19/2017	1:49:00	PM	View of Page 1	flag field.

.

Photo log.txt

- ---

. . .

THE

~

TMG-0002.16	10/19/2017	1:49:55	PM	view of flag field.
IMG_0084.JPG	10/19/2017	2:05:14	РМ	View of conductor line identified with green
IMG_0085.JPG	10/19/2017	2:06:00	PM	View of conductor line suspended in trees
IMG_0086.JPG	10/19/2017	2:06:16	PM	View of conductor line identified with green
IMG_0087.JPG	10/19/2017	2:06:26	PM	View of conductor line identified with green
IMG_0088.JPG	10/19/2017	2:06:36	PM	View of conductor line identified with green
IMG_0089.JPG	10/19/2017	2:06:45	PM	View of conductor line identified with green
IMG_0090.JPG	10/19/2017	2:06:57	РМ	View of conductor line identified with green
IMG_0091.JPG	10/19/2017	2:07:02	PM	View of conductor line identified with green
IMG_0092.JPG	10/19/2017	2:07:58	PM	View of conductor line identified with green
IMG_0093.JPG	10/19/2017	2:08:10	PM	Close up view of charred branch.
IMG_0094.JPG	10/19/2017	2:08:31	PM	Close up view of charred branch.
IMG_0095.JPG	10/19/2017	2:10:14	PM	View of conductor line identified with green
IMG_0096.JPG	10/19/2017	2:13:48	PM	View of conductor line identified with green
IMG_0097.JPG	10/19/2017	2:17:59	РМ	View of Evidence Item 3.
IMG_0098.JPG	10/19/2017	2:29:03	РМ	View of Evidence Item 4.
IMG_0099.JPG	10/19/2017	2:29:11	РМ	View of Evidence Item 4.
IMG_0100.JPG	10/19/2017	2:31:52	PM	View of conductor on ground.
IMG_0101.JPG	10/19/2017	2:33:47	PM	Close up view of conductor.
IMG_0102.JPG	10/19/2017	2:34:08	PM	Close up view of conductor.
IMG_0103.JPG	10/19/2017	2:39:41	PM	View of Evidence Item 5.
IMG_0104.JPG	10/19/2017	2:39:46	PM	View of Evidence Item 5.
IMG_0105.JPG	10/19/2017	2:42:35	PM	View of branch after conductor and
IMG_0106.JPG	10/19/2017	2:42:42	РМ	View of branch after conductor and
IMG_0107.JPG	10/19/2017	2:42:47	PM	View of branch after conductor and
IMG_0108.JPG	10/19/2017	2:44:39	PM	View of oak tree and portion of oak tree on
IMG_0109.JPG	10/19/2017	2:44:48	PM	View of oak tree and portion of oak tree on
IMG_0110.JPG	10/19/2017	2:45:00	PM	View of oak tree and portion of oak tree on
IMG_0111.JPG	10/19/2017	2:45:13	РМ	View of oak tree.
IMG_0112.JPG	10/19/2017	2:45:31	РМ	View of portion of oak tree on ground.
IMG_0113.JPG	10/19/2017	2:45:38	PM	View of portion of oak tree on ground.
		•		

Page 2

Youngs 051

Photo log.txt M View of portion of oak tree on ground. IMG_0114.JPG 10/19/2017 2:46:00 PM IMG_0115.JPG the ground. View of oak tree and portion of oak tree on 10/19/2017 2:46:40 PM

October 8, 2017

17CALNU010487



1 of 4

October 8, 2017

17CALNU010487



2 of 4

October 8, 2017

17CALNU010487



3 of 4



IMG_0114



IMG_0115

4 of 4

Youngs 056

Aerial photo log.txt Listing of [1 Folder: Aerial Photographs] at 3:46:29 PM on 3/21/2018 9 file(s) 0 subfolder(s) 106.6 MB (111,767,256 byte(s))

Filename	Date/time digitized	Caption
IMG_0001.JPG IMG_0002.JPG IMG_0003.JPG IMG_0004.JPG IMG_0005.JPG IMG_0006.JPG IMG_0007.JPG IMG_0008.JPG	10/23/2017 11:50:05 PM 10/23/2017 11:50:17 PM 10/23/2017 11:50:28 PM 10/23/2017 11:50:37 PM 10/23/2017 11:50:41 PM 10/23/2017 11:50:43 PM 10/23/2017 11:50:47 PM 10/23/2017 11:51:23 PM	Aerial photograph looking south west. Aerial photograph looking south. Aerial photograph looking south east. Aerial photograph looking east. Aerial photograph looking north east. Aerial photograph looking north east. Aerial photograph looking north east. Aerial photograph above origin.
IMG_0009.JPG	10/23/2017 11:51:32 PM	Aerial photograph above origin.

Page 1

October 8, 2017

17CALNU010487



CAL
AINCE JAM

DAY

SUN

SUPPLEMENTARY INVESTIGATION REPORT

STATE OF CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION LE 71 (REV. 7/2011)

YEAR

2017

RT	INCIDENT NUMBER					
	17CALNU010487					
	CASE NAME YOUNGS					
REGION	UNIT	CASE NUMBER				
NORTH	LNU					

1 All times and distances are approximate.

DATE

8

MONTH

OCT

2

٠

3	On Tuesday, April 24, 2017, at approximately 10:30 AM, while reviewing aerial digital photographs I
4	took on October 24, 2017 (IMG_0001.JPG through IMG_0009.JPG), I realized the date and time
5	stamp on the images was incorrect, due to it being set incorrectly in the camera. The photographs
6	show from 11:50 PM through 11:51 PM on October 23, 2017. I believe the photographs should
.7	show from 11:50 AM through 11:51 AM on October 24, 2017. This was isolated to the camera I
8	used to take the aerial photographs only.
9	
10	
11	
12	·
13	
14	
15	
16	
17	
18	• ·
19	
20	
21	
22	
23	· · ·
24	
25	
26	

COUNTY

SONOMA

PRINTED NAME	SIGNATURE	BADGE NUMBER	DATE	
Charlie Laird		2369	05/15/2018	
	1 OF 1			
		Yo	ungs 059	

Weather Conditions for E3235

Observations Prior to: 10/09/2017 11:00 PDT Weather Conditions at: 10/09/2017 10:49 PDT

Graphical Links	10:49	Max Since 0:00 (PDT)	Min Since 0:00 (PDT)	24 Hour Maximum	24 Hour Minimum
Temperature	75.0° F	75.0 at 10:49	67.0 at 7:34	84.0 at 15:15	67.0 at 7:34
Dew Point	22.6° F	24.8 at 10:04	18.6 at 8:34	45.2 at 11:44	12.6 at 14:02
Wet bulb temperature	51.0° F	51.0 at 10:49	46.8 at 7:34	58.5 at 12:16	46.8 at 7:34
Relative Humldity	14%	17 at 10:04	14 at 10:49	42 at 11:14	7 at 14:02
Wind Speed	1.0 mph	14.0 at 3:33	1.0 at 10:49	14.0 at 3:33	0.0 at 20:19
Wind Gust	9.0 mph	35.0 at 0:19	7.0 at 10:34	35.0 at 0:19	3.0 at 19:17
Wind Direction	NE	-	-	~	-
Pressure	29.70 in	29.70 at 10:49	29.63 at 4:04	29.70 at 10:49	29.58 at 16:02
Altimeter	29.88 in	29.88 at 10:49	29.81 at 4:04	29.88 at 10:49	29.76 at 16:02

*Note: Observations above in yellow indicate that they are older than the last row of observations below.

Tabular Listing of 98 Observations from 10/08/2017 10:12 PDT to 10/09/2017 10:49 PDT:

	Time (PDT)	Temperature ° F	Dew Point ° F	Wet bulb temperature ° F	Relative Humidity %	Wind Speed	Wind Gust mph	Wind Direction	Pressure in	Altimeter in	Precipitation 24hr in	Precipitation since local midnight	Quality
	10:49	75.0	22.6	51.0	14	1.0	9.0	NE	29.70	29.88	0,00	0.00	OK
	10:34	74.0	23.4	50,7	15	3.0	7.0	NE	29.70	29.88	0.00	0.00	K
	10:19	72.0	21.8	49.5	15	3.0	12.0	NNW	29,70	29.88	0.00	0,00	O R
	10:04	72.0	24.8	50.2	17	1.0	13.0	Е	29.70	29.88	0.00	0.00	O R
	9;49	72.0	21.8	49.5	15	6.0	12.0	ENE	29.69	29.87	0.00	0.00	ЮK.
	9:34	71.0	21.0	48.9	15	5.0	12.0	ENE	29.70	29,88	0.00	0.00	ŌK -
	9:19	71.0	21.0	48.9	15	5,0	16,0	NE	29.70	29.88	0.00	0.00	O K
	9:04	70.0	20.2	48.3	15	8.0	18.0	ENE	29.70	29,88	0.00	0.00	OK
	8:49	69.0	19.4	47.7	15	7,0	17.0	ENE	29.70	29.88	0.00	0.00	ØŘ.
	8:34	68.0	18.6	47.1	15	10.0	21.0	ENE	29.69	29.87	0.00	0.00	Ø K
	8:19	68.0	20.1	47.4	16	8.0	18.0	ENE	29.68	29,86	0,00	0.00	ίοκ.
	8:04	68.0	20.1	47.4	16	4.0	12.0	ENE	29.68	29.86	0.00	0.00	OK
	7:49	68.0	20.1	47.4	16	4.0	18.0	NE	29.68	29.86	0.00	0.00	ŌK.
	7:34	. 67.0	19.3	46.8	- 16	4.0	10.0	NNE	29.68	29.86	0.00	0.00	íCK.
	7:19	67.0	20.8	47.0	17	1.0	8.0	E	29.68	29.86	0.00	0.00	ŐK.
	7:04	67.0	19.3	46,8	16	3.0	8.0	NNE	29.68	29.86	0.00	0.00	ØK.
	6:49	68.0	18.6	47.1	15	4.0	13.0	ENE	29.67	29.85	0.00	0,00	OK
	6:34	69.0	19,4	47.7	15	5.0	15.0	NNE	29.67	29.85	0.00	0.00	迎接
	6:19	68.0	20.1	47.4	16	6.0	12.0	NNE	29.67	29.85	0.00	0.00	(OK)
	6:04	68.0	20.1	47.4	- 16	2.0	11.0	N	29.66	29.84	0.00	0.00	<u>OK</u>
	5:49	68.0	20,1	47.4	6	5.0	12.0	NNE	29.65	29.83	0.00	0.00	0e
	5:34	68,0	20.1	47.4	16	5.0	18.0	ENE	29.65	29.83	0.00	0.00	创的
	5:19	68.0	21.6	47.7	17	6.0	15.0	NE	29.65	29.83	0.00	0.00	ØR
	5:04	68.0	21.6	47.7	17	7.0	15.0	ENE	29.64	29.82	0.00	0.00	<u>OK</u>
	4:49	68.0	20.1	47.4	16	4.0	16.0	NE	29.64	29.82	0.00	0.00	QK.
	4:34	69.0	20.9	48.0	16	7.0	18.0	NE	29.64	29.82	0.00	0.00	(91)
	4:19	68.0	20,1	47.4	16	4.0	19.0	ENE	29.64	29.82	0.00	0.00 ·	j <u>ok</u>
į	4:04	69.0	20.9	48.0	16	8.0	24.0	N	29.63	29.81	0.00	0.00	OK
	3:48	69.0	20.9	48.0	16	9.0	21.0	ENE	29.63	29.81	0.00	0.00	(0)ks
	3:33	69.0	20.9	48.0	16	14.0	22.0	NE	29.63	29.81	0.00	0.00	Ю.К.
	3:18	69.0	22.4	48.3	17	11.0	27.0	ENE	29.63	29.81	0.00	0.00	QK
-	3:04	69.0	20.9	48.0	16	11.0	26.0	E	29.64	29.82	0.00	0,00	<u>l</u> OK
	2;48	69.0	20.9	48.0	16	10.0	19.0	ENE	29.64	29.82	0.00	0.00	D K
	2:33	69.0	20.9	48.0	16	8.0	17.0	ENE	29.65	29.83	0.00	0.00	<u>ok</u>
	2:18	69.0	20.9	48.0	16	8.0	17.0	NNW	29.65	29.83	0,00	0.00	1015
	2:03	70.0	21.7	48.6	16	7.0	25.0	NE	29.65	29.83	0.00	0.00	K

http://mesowest.utah.edu/cgi-bln/droman/meso_base_dyn.cgi?product=&past=1&stn=E3235&unit=0&time=LOCAL&day1=9&month1=10&vear1=200760 1/3

3/1	3/2018					MESO\	WEST ST/	ATION INT	ERFAC	E			
	1:48	70.0	21,7	48.6	16	9.0	22.0	ENE	29.65	29.83	0.00	0.00	OK
	.1:33	70.0	21.7	48.6	16	8.0	22.0	ENE	29.66	29.84	0.00	0.00	OK.
	1:18	70.0	21.7	48.6	16	5.0	22.0	ESE	29.65	29,83	0.00	0.00	OK
	1:08	70.0	20,2	48.3	15	5.0	21.0	Ν	29.65	29.83	0,00	0.00	ĨŐK.
	0:49	71.0	21.0	48.9	15	11.0	23.0	ENĖ	29.65	29.83	0.00	0.00	OK.
	0:40	71.0	21.0	48.9	15	10.0	24.0	ESE	29.65	29.83	0.00	0.00	OK
	0:19	71.0	21.0	48.9	15	3.0	35.0	NNE	29.64	29.82	0.00	0.00	D K
	0:05	71.0	21.0	48.9	15	13,0	26.0	WNW	29.65	29.83	0.00	0.00	OK
ĺ	23:50	71.0	21.0	48.9	15	6.0	14.0	N	29.65	29.83	0.00	0.00	OK-
	23:33	71.0	21.0	48.9	15	8.0	17.0	ESE	29.65	29.83	0.00	0.00	OK
	23:20	72.0	21.8	49.5	15	8.0	17.0	ENE	29.65	29.83	0.00	0.00	<u>OK</u>
	23:06	72.0	21.8	49.5	15	5.0	24.0	NN₩	29.64	29.82	0.00	0.00	QK.
	22:47	72.0	21,8	49.5	15	4.0	21.0	NW	29.65	29.83	0.00	0.00	D C
	22:33	72.0	21.8	49.5	15	7.0	20.0	ENE	29.64	29.82	0.00	0.00	OK
	22:17	73.0	21.0	49.8	14	4.0	15.0	ENE	29.64	29.82	0.00	0.00	OK.
	22:04	73.0	21.0	49.8	14	6.0	15.0	NE	29.64	29.82	0.00	0.00	OK:
	21:48	74.0	21.8	50,4	4	5.0	15.0	NNW	29.64	29,82	0.00	0.00	QK.
	21:34	74,0	23.4	50.7	15	5.0	14.0	NNE	29.63	29.81	0.00	0.00 ·	D K
	21:17	73.0	24.2	50.5	16	3.0	12.0	ESE	29.63	29.81	0.00	0.00	DR
	21:11	73.0	24.2	50,5	16	3.0	9.0	NNE	29.63	29.81	0.00	0.00	DK
	20:47	74.0	25.0	51.1	16	3.0	13.0	SE	29.63	29.81	0.00	0.00	OK
	20:42	73.0	24.2	50.5	16	4.0	12.0	SSE	29.62	29.80	0.00	0.00	<u>OK</u>
	20:19	74.0	26.4	51.4	17	0.0	11.0		29.62	29.80	0.00	0.00	IOK
	20:03	74.0	25.0	51.1	16	2.0	11.0	S₩	29.62	29.80	0.00	0.00	<u>OK</u>
	19:47	73.0	24.2	50.5	16	2.0	5.0	WNW	29.62	29.80	0.00	0.00	QK.
	19:31	72.0	24,8	50.2	17	1.0	4.0	ENE	29.62	29.80	0.00	0,00	OK.
	19:17	72.0	26.2	50.5	18	0.0	3,0		29.61	29.79	0.00	0.00	KOK
	19:05	75.0	24.2	51.3	15	2.0	8.0	NW	29.61	29.79	0.00	0.00	OK
	18:47	75.0	24.2	51.3	15	1.0	11.0	NE	29.61	29.79	0.00	0.00	<u>OK</u>
	18:31	76.0	25.0	51.9	15	4.0	8.0	ENE	29.61	29.79	0.00	0.00	OK.
	18:16	77.0	24,2	52.2	14	3.0	8.0	NNW	29.61	29.79	0.00	0.00	<u>lok</u>
	18:06	77.0	24.2	52.2	14	2.0	9.0	NE	29.60	29.78	0.00	0.00	IOK.
	17:40	78.0	23.2	52.4	13	3.0	7.0	ENE	29.60	29.78	0.00	0.00	OK
	17:39	79.0	22.1	52.6	12	4.0	14.0	NNE	29,60	29.78	0.00	0.00	<u>OK</u>
	17:25	79.0	20,0	52,2	11	8.0	16.0	NNE	29.60	29.78	0.00	0.00	IOK.
	17:05	80.0	18.5	52.3	10	8.0	19.0	ENE	29.59	29.77	0.00	0.00	<u>OK</u>
•	10:52	80.0	10.1	51.9	9.	11.0	19.0	ENE	29.60	29.78	0.00	0.00	<u>iok</u>
	10:33	81.0 -	10.9	52.5	9	8.0	18.0	NE	29,59	29.77	0.00	0.00 ·	<u>ØK</u>
	16:15	82.0	14.9	52,6	8	10.0	18.0	E	29.59	29.77	0.00	0,00	<u>OK</u>
	10:02	84.0	14.9	52.6	8	8.0	21.0	N	29.58	29.76	0.00	0.00	<u>EQK</u>
	15:45	83.0	14.4	53.1	8	10,0	17.0	ENE	29.58	29,76	0.00	0.00	OK
	15:15	84.0	10.4	53.6	ð	7.0	14.0	NNE	29.58	29.76	0.00	0.00	<u>ek</u>
	10:00	04.U	10.4	53.0	ð o	5.0	18.0	NE	29.58	29.76	0.00	0.00	
	14:45	83.0	12.0	53.1	8	7.0	17.0	NE	29.58	29.76	0.00	0.00	OK
:	14:50	04.U 02.0	10.4	53.0	0 7	8.U 8.0	10.0	E	29.58	29.76	0.00	0.00	
	14:02	04.0	12.0	54.1	/ 0	8.0 7.0	20.0	ENE	29.60	29.78	0.00	0,00	
-	13.40	0-4,0 . 92 ()	17.1 07.1	J4.1 55 2	ל 12	7.U 2.0	14.0		29.60	29.78 20.70	0.00	0,00	(OK)
	13:29	02'N 02'N	2771 781	33.3 55 1	13	5.U 6 A	13.0		29.61	29.79	0.00	0.00	NO KST
	13110	02.U 97.0	20.1 201	55.1	14	0.U 5.0	10.0	ENE	29.62	29.80	0.00	0.00	STORE
	10.45	04.U 90.0	∡ð.1 21.2	23,1 23,1)4	5,0	14.0	ENE	29.62	29.80	0.00	0.00	<u>IQK</u>
	12:40	80.0 80.0	207	33.1 55.5	17	0.0	12,0	NE	29.62	29.80	0.00	0.00	OK
	12:44	00.0 77.0	52.1 44 0	20'2 22'2	10	0.0	12.0	ENE	29.62	29.80	0.00	0.00	<u>Q</u>
	12:16	//.U 75.0	44.9	28.3 57.7	54 24	1.0	0.0	NNW	29.63	29.81	0.00	0.00	OK
	12:00	73.0	44.1	57.1	34 20	0.0	4.0	5 1312	29.63	29.81	0.00	0.00	<u>ioks</u>
	11:44	73.0	42.2	57,1	57	2.0	7.0	ΝW	29.63	29.81	0.00	0.00	QKS

3/13/2018					MES	OWEST S	STATION IN	TERFAC	E		·	
11:42	72.0	45.0	56.6	38	1.0	7.0	N	29,63	29.81	0.00	0.00	
11:14	69.0	44.9	55,5	42	3.0	9.0	ESE	29.64	29.82	0.00	0.00	SOK.
10:59	67.0	45.0	54.7	45	0,0	5.0		29.65	29.83	0.00	0.00	AR ST
10:53	67.0	45.5	54.9	46	1.0	7.0	NW	29,65	29.83	0.00	0.00	ink i
10:28	65.0	45.9	54.3	50	1.0	6.0	NNW	29.65	29.83	0.00	0.00	lők
10:14	64.0	46.0	53.9	52	1.0	7.0	Ν	29.65	29.83	0.00	0.00	
10:12	63.0	45.1	53.1	52	1.0	7.0	NW	29.65	29.83	0.00	0,00	O K

STATION INFO ID: E3235 NAME: EW3235 Healdsburg LATITUDE: 38.61467 LONGITUDE: ~122.77117 ELEVATION: 166 ft MNET: APRSWXNET/CWOP LAND COVER: 2001 USGS DATA COURTESY OF: APRSWXNET/Clitzen Weather Observer Program

http://mesowest.utah.edu/cgi-bin/droman/meso_base_dyn.cgl?product=&past=1&stn=E3235&unit=0&time=LOCAL&day1=9&month1=**1%ormig**@ 1062, 3/3

Weather Conditions for PICWW

Observations Prior to: 10/09/2017 11:00 PDT Weather Conditions at: 10/09/2017 11:00 PDT

Graphical Links	11:00	Max Since 0:00 (PDT)	Min Since 0:00 (PDT)	24 Hour Maximum	24 Hour Minimum
Temperature	74.6° F	74.6 at 11:00	46.0 at 8:00	87.5 at 15:00	46.0 at 8:00
Dew Point	18.6° F	26.0 at 9:00	11.9 at 1:00	40.7 at 11:00	11.9 at 1:00
Wet bulb temperature	50.0° F	50.0 at 11:00	37.8 at 8:00	57.2 at 13:00	37.8 at 8:00
Relative Humidity	12%	45 at 8:00	10 at 1:00	45 at 8:00	7 at 17:00
Wind Speed	1.7 mph	7.2 at 0:00	0.0 at 5:00	12.6 at 23:00	0.0 at 5:00
Wind Gust	8.8 mph	35.1 at 0:00	4.4 at 9:00	35.1 at 0:00	4.4 at 9:00
Wind Direction	SSW	H	-	-	_
Solar Radiation	521.0 W/m*m	521.0 at 11:00	0.0 at 7:00	724.0 at 14:00	0.0 at 7:00

*Note: Observations above in yellow indicate that they are older than the last row of observations below.

Tabular Listing of 26 Observations from 10/08/201	17 10:00 PDT to	10/09/2017	11:00 PDT:
---	-----------------	------------	------------

Time (PDT)	Temperature ° F	Dew Point ° F	Wet built temperature ° F	Relative Humidity %	Wind Speed mph	Wind Gust reph	Wind Direction	Solar Radiation W/m*ni	Precipitation 1hr	Quality
11:00	74.6	18.6	50.0	12	1.7	8.8	SSW	521.0	0.00	N/A
10:00	68.9	20.9	47.9	16	3.2	6.6	SW	334.0	0.00	N/A
9:00	60,1	26.0	45.0	27	1.1	4.4	E	142.0	0.00	N/A
8:00	46.0	25.9	37.8	45	0.1	5.0	WNW	12.0	0.00	N/A
7:00	47.7	23.4	38.0	38	0.2	6.6	ESE	0.0	0.00	N/A
6:00	52.9	19.0	39.7	26	1.0	5.5	SSW	0.0	0.00	N/A
5;00	55.8	21.4	41.8	26	0.0	10.5		0.0	0.00	N/A
4:00	68.8	14.1	46.6	12	1.2	21.3	WNW	0.0	0.00	N/A
3:00	69.5	12.7	46.7	11	5.5	23.0	NNE	0.0	0.00	N/A
2:00	71.4	14.2	47.8	11	4.7	24.8	NE	0.0	0.00	OK
1:00	71.3	11.9	47.4	10	3.4	30.7	NE	0,0	0.00	DK
0:00	71.7	14.4	48.0	11	7.2	35.1	NNE	0.0	0.00	OK
23:00	72.6	12.9	48.2	10	12.6	34.9	Ν	0.0	0.00	OK
22:00	74.1	14.1	49.0	10	5.4	20.8	SSW	0.0	0.00	OK
21:00	66.3	20.2	46.6	17	1.1	8.1	NE	0.0	0.00	10 184
20:00	69.8	21.6	48.5	16	1.0	9.9	SSE	0.0	0.00	<u>OK</u>
19:00	67.3	22.3	47.5	18	0.4	4.7	S	27.0	0.00	M
18:00	80.3	16.3	52,1	9	9.3	20.2	NE	193.0	0.00	DE
17:00	84.0	13.3	53.2	7	10.2	21.5	NE	383.0	0.00	
16:00	85.6	14.5	54.0	7	9.2	20.8	NE	545.0	0.00	1918
15:00	87.5	19.0	55.4	8	2.6	18.9	E	661.0	0.00	
14:00	86.6	25.8	56.4	11	8,7	16.2	NE	724.0	0.00	ielke
13:00	80.9	37.3	57,2	21	1.5	5.0	SSE	719.0	0.00	OK
12:00	75.7	39.3	55.9	27	1.7	9.9	W	659.0	0.00	(0) (5)
11:00	69.6	40.7	54.0	35	2,6	10.5	NW	545.0	0.00	OK
10:00	66.4	40.7	52.7	39	1.8	9.7	NNW	386.0	0.00	OK.

STATION INFO ID: PICWW NAME: Alexander Valley - Piccolo LATITUDE: 38.67540 LONGITUDE: -122.82542 ELEVATION: 185 ft MNET: WWG-SONOMA LAND COVER: 2001 USGS DATA COURTESY OF: Western Weather Group

http://mesowest.utah.edu/cgi-bin/droman/meso_base_dyn.cgi?product=&past=1&stn=PiCWW&unit=0&time=LOCAL&day1=9&montly_durgs1063 1/1

ATTACHMENT B

PG&E Maacama Incident Description and Factual Summary

MAACAMA INCIDENT DESCRIPTION & FACTUAL SUMMARY

For completeness, this incident description and factual summary should be read in conjunction with the Factual Report Guidance and the contemporaneously submitted response to Question 29.

Background:

On October 20, 2017, PG&E filed an Electric Safety Incident Report (Incident No. 171020-8587) concerning an incident that occurred near 955 Maacama Lane, Healdsburg, Sonoma County (the "incident location" as defined by the CPUC's December 7, 2017, letter). When PG&E visited the incident location to conduct an inspection, PG&E observed that a California White Oak/Valley Oak tree had broken near its mid-section and was laying on the ground near fallen conductors for the Fulton 1102 (12 kV) Circuit.

According to the CPUC's Data Request, dated November 16, 2017, the Maacama incident started at 9:50 PM on October 8, 2017.

Incident Overview:



The incident location is served by the Fulton 1102 (12 kV) Circuit. On October 8, 2017, at 9:39 PM, a smart meter (service point 7095533205) located approximately a quarter mile upstream from the incident location (but downstream of Fuse 751), recorded a NIC power down event. At that same time, four meters downstream of the incident location also recorded NIC power down events. From 9:39 PM to 9:45 PM, smart meter (service point 7095533205) and 7 other smart meters upstream of the incident location but downstream of Fuse 751 recorded a series of power off/on events. At 9:45 PM, 26 smart meters downstream of Fuse 751 (including the 7 that had recorded off/on events from 9:39 PM to 9:45 PM) recorded NIC Power Down events, making for a total of 31 smart meters recording NIC Power Down events. PG&E has not received messages from the other 4 smart meters downstream of Fuse 751.

Based on PG&E records, on October 8, 2017, at 10:17 PM, Fulton 1102 Circuit Breaker opened and remained open, de-energizing the circuit.

According to PG&E records, a troubleman was the first PG&E employee to access the incident location. Per the troubleman, on the night of October 8, 2017, he arrived on scene to patrol the incident location in response to a wire down. At 10:58 PM, the troubleman reported that three of three fuses at Fuse 751 were blown. Per the troubleman, he replaced the blown fuses but left them open and tagged them "Man on Line" and continued to patrol beyond Fuse 751. Per the troubleman, he continued to patrol and found three phases of conductor down approximately 12

spans downstream from Fuse 751, at the incident location. Per the troubleman, he cleared the wires and left them on site. Per the troubleman, he observed that fire was active in the area and that four or five fire engines were on site working to contain the fire.

Based on PG&E records, at 11:20 PM, Fulton 1102 Circuit Breaker was closed via SCADA by operators after the source of the outage (a wire down on Highway 101) was cleared. The incident location remained de-energized because based on PG&E records, Fuse 751 was open.

On October 10, 2017, a PG&E lineman arrived at the incident location to replace the downed conductor. Based on PG&E records, at 1:11 PM, Fuse 751 was closed, restoring power to the incident location.

On October 18, 2017, PG&E visited the incident location to conduct an inspection. PG&E observed that a California White Oak/Valley Oak tree had broken near its mid-section and was laying on the ground near fallen conductors for the Fulton 1102 (12 kV) Circuit. The conductors were #6 Copper Wire installed in 1941. The California White Oak/Valley Oak tree had a diameter at breast height of approximately 30 inches and was rooted uphill approximately 20 feet from the distribution conductors. The California White Oak/Valley Oak tree is estimated to be approximately 50 feet tall. PG&E believes the California White Oak/Valley Oak tree broke at a height of approximately 19 feet above ground. PG&E also observed damage to a dwelling, structures and vehicles.

Evidence Collection:

On December 19, 2017, PG&E collected six pieces of the California White Oak/Valley Oak tree. PG&E does not know whether any fire agency has collected evidence associated with the Maacama incident location.

Timeline:

Maacama								
Event	<u>CPUC Bates Number</u>	CAL FIRE Bates						
	Reference	Number Reference						
October 8, 2017, 9:39 PM: A smart		PGE-CF_00000056						
meter (service point 7095533205)								
located upstream of the incident location								
and four smart meters located								
downstream of the incident location								
recorded a NIC power down event.								
October 8, 2017, 9:39 PM – 9:45 PM: A		PGE-CF_00000056						
smart meter (service point 7095533205)								
and seven others upstream of the								
incident location recorded a series of								
power off/on events.								
October 8, 2017, 9:45 PM: 26 smart								
meters downstream of Fuse 751								

Maacama							
Event	<u>CPUC Bates Number</u>	CAL FIRE Bates					
	<u>Reference</u>	Number Reference					
(including the 7 that had recorded							
intermittent power from 9:39 PM to 9:45							
PM) recorded NIC Power Down events.							
PG&E has not received messages from							
the other 4 smart meters downstream of							
Fuse 751.							
October 8, 2017, 9:50 PM: According							
to the CPUC's data request, the							
Maacama incident started.							
October 8, 2017, 10:17 PM: Based on	PGE-CPUC_00015697	PGE-CF_00136182;					
PG&E records, Fulton 1102 Circuit		PGE-CF_00004995					
Breaker opened and remained open, de-							
energizing the circuit.							
October 8, 2017, 10:58 PM: A	PGE-CPUC_00015643	PGE-CF_00136179					
troubleman was on site and reported that							
three of three fuses at Fuse 751 were							
blown. Per the troubleman, he found							
three phases of conductor down at the							
incident location.							
October 8, 2017, 11:20 PM: Fulton	PGE-CPUC_00015697	PGE-CF_00136182					
1102 Circuit Breaker was closed							
remotely via SCADA.							
October 10, 2017: Based on PG&E	PGE-CPUC_00012217						
records, a lineman replaced downed							
conductors at the incident location.							
October 10, 2017, 1:11 PM: Based on	PGE-CPUC_00015643	PGE-CF_00136179;					
PG&E records, Fuse 751 was closed,		PGE-CF_00004995					
restoring power to the incident location.							
October 18, 2017: PG&E visited the							
incident location to conduct an							
inspection.							

Source List:

Source	Brief Description
PGE-CPUC_00007964	SCADA Data produced to CPUC
PGE-CPUC_00007965	SCADA Data produced to CPUC
PGE-CPUC_00012215	PG&E Evidence Log Produced to CPUC
PGE-CPUC_00015643	ILIS Outage Report 17-0085970
PGE-CPUC_00015697	ILIS Outage Report 17-0085251
Maacama Initial	10/20/2017 Electric Incident Report submitted to the CPUC
Electric Incident Report	
to the CPUC	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 5	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 7	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 8	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 9	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 27	
Response to Maacama	Response to CPUC E20171020-01 Data Request #1 (11/16/2017)
Question 28	
PGE-CPUC_00012217	Electric Overhead Tag, Notification No. 113702897
AMI Smart Meter Data	AMI Smart Meter Data produced to CAL FIRE on 12/8/17 (PGE-
CDU C L	CF_00000056)
CPUC Letter	December 7, 2017 Letter from CPUC to PG&E Regarding
	Clarification for Commission's November 21, 2017 Data Request
CPUC Data Request for	November 16, 2017 Data Request Regarding E20171020-01
Maacama Incident	
Single Line Diagram	Single Line Diagram for Maacama Incident Location (PGE-
	CF_00004995)
Maacama ED PI Device	Maacama ED PI Device Alarms Log
Alarms Log	

Factual Report Guidance:

PG&E is providing the Incident Description and Factual Summary (the "Report") for the incident location, as defined by the CPUC's December 7, 2017, letter. In addition to Question 29, the Report provides a complete response to Questions 3 and 4.

PG&E's review and collection of records are ongoing, and the Report is based on information that PG&E believes may be relevant to the incident location, as defined by the CPUC's December 7, 2017, letter, based on information currently known. In preparing the Report, PG&E has not included data or information that may not be relevant to the incident location, as defined by the CPUC's December 7, 2017, based on information currently known, for example:

- Transmission-level outages, which because of their wide-spread impact, may have caused an outage at the incident location, unless the source of the outage appears to have been related to the incident location or the transmission-level outage de-energized the incident location; or
- Certain minor alarms sent by protection devices that did not result in a sustained outage at the incident location.

Raw data has, however, been provided in response to other questions.

PG&E has not reviewed potentially relevant information that may be in the possession of any other entity. The cause of the incident is still under investigation and it is premature to draw conclusions about whether the "fire location" or "incident location" addressed by the Report is a point of origin.

Moreover, PG&E has relied on some information provided by third parties, such as the CPUC. For example, PG&E has relied on the start time provided by the CPUC in generating this Report. PG&E is not presently able to validate this information.

For these reasons, among others, the facts described in the Report may or may not be relevant to questions of causation or origin with respect to any incidents, and there may also be other facts not in the Report that are relevant to questions of causation or origin of any incidents.

In addition, please find a list of additional explanations related to particular points.

Single Line Diagrams

For ease of reference, PG&E has included a single line diagram in the Report. The reference to "area of interest" in the single line diagram refers to the incident location, as defined by the CPUC's December 7, 2017, letter. The single line diagram shows the incident location and the location of all protection devices upstream of the incident location back to the distribution circuit breaker at the substation. Smart Meters are not shown on the single line diagram, although they may be referenced in the Report.

Below please find a legend that explains the symbols used in the diagram.



First Responder

As indicated above, in response to Question 4, PG&E has included in its Report an account of the first PG&E employee who responded to the incident location.

Repair and/or Restoration Work

PG&E has included information related to when repair and/or restoration work was completed. PG&E has not attempted to include all dates on which repair crews were present at or near the incident location, as defined by the CPUC's December 7, 2017, letter, either in the incident overview or the timeline.

<u>Timeline</u>

As indicated above, in response to Question 3, PG&E has included a timeline of certain equipment operations and actions of PG&E employees at or near the incident location, including during the period 12 hours prior to the CPUC's designated start time, until the date when PG&E was granted access to the incident location. PG&E has not included every possible data point during the timeline time period. Rather, as indicated above, the timelines include information that PG&E believes may be relevant to the incident location, as defined by the CPUC's December 7, 2017, letter, based on information currently known. Where records have been produced, PG&E provided the Bates number. Within a single row, some information may be based on records that have been produced, while other information may be based on records or other information that have not been produced.

Operational Data

PG&E has relied on certain operational data sets (*e.g.*, SCADA, AMI) in preparing the Report. There may be data discrepancies between different operational data sources. For example, timestamps of a common event across different operational data sources may differ. In the Report, PG&E has documented to the best of its ability the most accurate occurrence time based on its current understanding.

SCADA Data

SCADA (Supervisory Control And Data Acquisition) data includes alarm and event data remotely collected in real time from data-collection capable devices on PG&E's electric distribution and transmission circuits. Reclosers and circuit breakers are examples of devices

that may report SCADA data. Fuses do not have SCADA connectivity and, therefore, do not report SCADA data. SCADA alarms and events memorialize electrical events on a circuit. However, they are associated with the device that collected them and do not include information on the specific cause or precise origin location of the electrical event that they memorialize.

As noted above, PG&E has not included all SCADA events in the Incident Overview or the Timeline. For example, Minimum To Trip ("MTT") alarms have not been included. MTT alarms are generated when a SCADA-enabled device identifies a circuit load that exceeds a maximum threshold load but for less than a certain amount of time. MTT alarms can be frequent and do not include information on the specific cause or origin location of the event that triggered them. A record of all SCADA events and alarms that occurred during the requested time periods has been previously produced in response to Question 18, submitted to the CPUC on February 28, 2018, in the Bates range PGE-CPUC_00007964 to PGE-CPUC_00007965.

AMI Data

Smart Meters are electric meters designed to record customer electricity usage, primarily for billing purposes. They can record and transmit electrical data including usage, voltage and event data ("Smart Meter" or "AMI" data). In certain situations, data collected by these meters may be helpful to determine information about outages. For example, a Smart Meter's "last gasp" is an event that may show the time at which a specific Smart Meter lost power. In conjunction with data from other Smart Meters, "last gasp" data might indicate when a certain location on the electric grid lost power or some other secondary problem. A "NIC power down" is a recorded log event when a Smart Meter initiates a shut down. A "zero volt reading" occurs when a meter is partially energized (between 25% and 75%) at the time of a reading. Each of these readings will only occur if the communication from the Smart Meter is successfully received (or subsequently retrieved and downloaded if the Smart Meter is still accessible).

As noted above, PG&E has not included all AMI events in the Incident Overview or the Timeline. For example, sag or swell events have not been included. Smart Meters record these events when they detect a decrease (sag) or increase (swell) in voltage above or below a certain threshold for more than a certain period of time. Sag and swell events do not have specific timestamps; the data indicates only that they occurred during a certain time interval. Sag and swell events may indicate unusual activity; however, they do not indicate the location of that unusual activity. Smart Meter data was not requested in the November 16, 2017, Data Request and has not been produced in response to that Data Request.

Reclosing Device Operations

PG&E is providing certain times at which reclosing devices "operated" (opened or closed), which could include multiple operations depending on the device's settings before the device ultimately stayed closed or stayed open.

Outage Records

PG&E has relied on certain information from its Integrated Logging Information System Operations Database ("ILIS") in preparing the Report. As explained in response to Question 20, submitted to the CPUC on March 30, 2018, ILIS is PG&E's system of record for distribution transformer-level and above outages. ILIS is the application used by the distribution system operators to document information pertinent to the operation of the electric system. Due to the nature of how information is documented in the application, there may be discrepancies in outage start times and other information between ILIS and other data sources. For example, ILIS does not record single-customer or service-level outages, in accordance with CPUC Decision 96-09-045 and Advice Letter 3812-E on outage reporting requirements. Data from these ILIS records should be reviewed and considered together and in conjunction with those other data sources.

Outage cause information in ILIS is preliminary and is based on the best available information at the time, from initial field intelligence and through spot check quality reviews.

Smart Meter Service Point ID Numbers

Some PG&E records identify Smart Meters by their associated Service Point ID number ("SP_ID"), while other records identify Smart Meters by their associated "Badge" numbers. For consistency, the Report uses SP_ID to identify Smart Meters. PG&E will provide a translation between SP_ID and Badge numbers upon request.

Source List

At the end of the Report, PG&E has included a list of records on which it relied in drafting the Report. When PG&E indicates in a Report that information is per PG&E records, PG&E is referring to the records identified at the end of the Report. Where records have been produced, PG&E provided the Bates number. In addition to the items on the source list, PG&E relied on a variety of internal databases to make an assessment of location information regarding devices and individuals (*e.g.*, GIS, GPS) and observations made by the first PG&E employee who responded to the incident location.
ATTACHMENT C

PG&E Data Request #5 Response, Common Question #1 "Circuit Map"



Youngs 074 PGE-CPUC_00023064

CONFIDENTIAL