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Exhibit Number	:	CA-08
Commissioner	:	Alice Reynolds
Admin Law Judge	:	Larsen
Witness	:	H. Wehrman

PUBLIC ADVOCATES OFFICE
CALIFORNIA PUBLIC UTILITIES COMMISSION

Testimony on the Koenigstein Ignition for Thomas Fire and Debris Flow Cost-Recovery Application

The Koenigstein Ignition

San Francisco, California
June 6, 2024

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THE KOENIGSTEIN IGNITION

I. INTRODUCTION

This testimony pertains to Southern California Edison Company's (SCE or Edison) application to recover costs associated with the December 2017 Thomas Fire and subsequent debris flows (Application 23-08-013).

This testimony presents the analyses of the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) regarding the origin and cause of the Koenigstein ignition, and SCE's investigation thereof.

This testimony relates specifically to Exhibit SCE-02, SCE's testimony on the Anlauf and Koenigstein ignitions, and Exhibit SCE-03, SCE's testimony on the prudence of its operations.

II. TIMELINE OF EVENTS

This section provides a timeline of events related to the fire ignition near Koenigstein Road on December 4, 2017.

December 3, 2017

- 10:40 am – National Weather Service issued a Red Flag Warning for Los Angeles and Ventura counties.[1]
- 9:55 pm – SCE's Ventura Switching Center blocked reclosing on all circuit breakers and reclosers within high fire-risk areas for Los Angeles and Ventura counties.[2]
- 10:00 pm – Red Flag Warning takes effect for the area around the Castro circuit.[3]

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[1] Ex. SCE-03 at 57-58.

[2] Ex. SCE-03 at 57-58.

[3] Ex. SCE-03 at 57.

December 4, 2017

- 7:27:04 pm – Phase-to-phase fault recorded by recloser 0179 (also referred to as RAR 0179 or "Mainline Remote Automatic Recloser").[4, 5] RAR 0179 was the nearest protective device upstream of the Koenigstein ignition area.[6, 7] The recloser did not operate (i.e., open) to de-energize the line.[8]
- 7:27:06 pm – Phase-to-ground fault first recorded by RAR 0179. Recloser did not operate to de-energize the line.[9]
- 7:27:09 pm – RAR 0179 correctly operated (i.e., opened) to de-energize the line in response to the phase-to-ground fault.[10]
- 7:27 pm - 911 call to VCFD from resident at 12695 Koenigstein Road[11] to report that their front yard was on fire.[12]
- 7:29 pm – 911 call to VCFD to report "a large flash" followed immediately by fire.[13]
- 7:30 pm – 911 call to VCFD to report "a couple of flashes" followed immediately by fire.[14]

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[4] Ex. SCE-02 at A2.

[5] Exhibit SCE-02, Appendix A at A1 and footnote 1.

[6] Response to data request CalAdvocates-SCE-A2308013-05, question 6, November 30, 2023.

[7] Ex. SCE-02 at 14.

[8] Ex. SCE-02 at A2.

[9] Per Ex. SCE-02 at A3, there were a total of three phase-to-ground events recorded by RAR 0179 over a period of about 2.4 seconds.

[10] Ex. SCE-02 at A3. The last phase-to-ground fault was recorded at 19:27:08 pm. RAR 0179 tripped 1.083 seconds later.

[11] Per Ex. SCE-02 at 73, the phase-to-ground fault occurred on the conductor span between poles 565 and 566. Per Table A-2 at A5, pole 566 is the transformer pole that serves 12695 Koenigstein Road.

[12] 911 call logs provided by SCE in response to data request CalAdvocates-SCE-A2308013-14, February 22, 2024, "Thomas Incident 911 calls Dec 4 12 hrs.wav".

[13] 911 call logs provided by SCE in response to data request CalAdvocates-SCE-A2308013-14, February 22, 2024, "Thomas Incident 911 calls Dec 4 12 hrs.wav".

[14] 911 call logs provided by SCE in response to data request CalAdvocates-SCE-A2308013-14, February 22, 2024, "Thomas Incident 911 calls Dec 4 12 hrs.wav".

Per Ex. SCE-02 at 73, two fuses operated in response to the phase-to-phase fault, which may correspond to the two flashes reported in this 911 call.

III. THE CONDUCTOR WAS LIKELY DAMAGED PRIOR TO DECEMBER 4, 2017

In its opening testimony, SCE posits that the Koenigstein ignition originated when a conductor span between poles 565 and 566 on SCE's Castro circuit separated and fell to the ground.[15] This conclusion agrees with the joint fire investigations led by the California Department of Forestry and Fire Protection (CAL FIRE) and the Ventura County Fire Department (VCFD), referred to here as the Koenigstein Fire Agencies.[16]

SCE states that its analysis of the separated conductor indicates the conductor reached temperatures of 1,600 to 2,700 degrees Fahrenheit.[17] SCE concludes that these elevated temperatures are consistent with resistance heating associated with a damaged conductor.[18]

Resistance heating occurs when excessive current passes through a high resistance conductor that dissipates some of the transmitted energy in the form of heat.[19] Distribution conductor is normally designed to carry normal operating current without excessive overheating. For example, Southwire Company, LLC (Southwire), a manufacturer of electric transmission and distribution cable, rates the ampacity of size 4 aluminum conductor with steel reinforcement (ACSR) as 140 amps,[20] which corresponds to an operating temperature of approximately 75 degrees Celsius.[21]

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[15] Ex. SCE-02 at 66, 73.

[16] *See*, report on the investigation by the Koenigstein Fire Agencies into the Koenigstein ignition, authored by CAL FIRE and the VCFD (Koenigstein Fire Agency Report), included in Ex. SCE-02, Appendix B.

Herein, "Koenigstein Fire Agencies" refers to the California Department of Forestry and Fire Protection (CAL FIRE) and the Ventura County Fire Department.

[17] Ex. SCE-02 at 69.

[18] Ex. SCE-02 at 69.

[19] See, e.g., https://depts.washington.edu/vehfire/ignition/electrical/resist.html

[20] Southwire ACSR spec sheet, available at https://assets.southwire.com/ImConvServlet/imconv/6e40b948ad8bbb2c69490138659678cbf373c912/origin

[21] Note, per SCE's responses to data requests CalAdvocates-SCE-A2308013-12, question 6, February 14, 2024 and CalAdvocates-SCE-A2308013-12, SCE rates the ampacity of #4 ACSR as 160 amps, which corresponds to an operating temperature of 90 degrees Celsius.

SCE states that it was unable to identify the nature of the damage to the conductor that led to the resistance heating.[22] SCE did identify flattened areas caused by abrasion near the separation location,[23] which SCE believes would not have caused the conductor to separate in the manner it did.[24] SCE concludes that part of the conductor is missing.[25] If SCE's conclusion is accurate, it is possible that this missing portion is where the original conductor damage was located.

A. The conductor was likely not damaged prior to April of 2015.

In April of 2015, SCE replaced pole 566,[26] which is one of the two poles supporting the span that separated in the Koenigstein ignition.[27] SCE states that the crew that performed the work did not identify any conductor damage at the time.[28] It is unclear whether the crew actively inspected the conductor for damage.[29] It is therefore likely that the damage that led to the line separation occurred during or after the pole replacement work (that is, between April of 2015 and December of 2017).

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[22] Ex. SCE-02 at 69.

[23] Ex. SCE-02 at 69.

[24] Ex. SCE-02 at 69.

[25] "The evidence of internal overheating and melting indicates resistance heating that is potentially suggestive of a damaged conductor. However, the only evidence of prior damage that I observed was abrasion on a few aluminum strands in two locations on the conductor. Specifically, two of the aluminum strands adjacent to the two separated ends of the conductor had flattened areas caused by abrasion. I understand from Dr. Russell that this is not the type of conductor damage that would cause the separation that occurred here." Ex. SCE-02 at 69.

[26] Ex. SCE-02 at 76.

[27] Ex. SCE-02 at 71.

[28] Ex. SCE-02 at 76.

[29] In response to data request CalAdvocates-SCE-A2308013-25, question 4, April 11, 2024, SCE provided records of the pole replacement in "CalAdvocates-SCE-A2308013-25 Contractor Work Order Packet.pdf" Page 27 of this pdf includes an overhead inspection checklist, which does not include a requirement to check the conductor for visible damage.

B. Inspection records do not indicate that damage to the conductor occurred between April of 2015 and December of 2017.

During the pole replacement in 2015, the contractor installed an avian protection device on the center phase conductor, which is the phase that separated and caused the Koenigstein ignition.[30] The avian protection device is an insulating polymer sheath that extended approximately 30 inches along the span on either side of pole 566.[31] SCE estimates that the location where the conductor separated was 24 to 31 inches from the pole, which would place it beneath or at the end of the avian protection device.[32] The avian protection device is opaque and shields the entire circumference of the conductor.[33]

SCE states that inspection records prior to December 4, 2017 did not indicate any conductor damage at this pole.[34] However, given the estimated location of the separation, this is to be expected. A visual patrol or detailed inspection would not be able to identify any conductor damage that existed beneath the avian protection device.

Further, SCE has no records of maintenance tags involving avian protection on the Castro circuit prior to 2019.[35] If an object had struck the conductor after the avian protection was installed, it is likely that the flexible polymer[36] of the avian protection would have also been damaged. However, it appears SCE did not observe any such damage between 2015 and 2017. The Koenigstein Fire Agencies collected the avian

[30] Ex. SCE-02 at 76.

[31] Ex. SCE-02 at 76.

[32] Ex. SCE-02, figure IV-48 at 80.

[33] See photos provided in response to data request CalAdvocates-SCE-A2308013-09, question 2, February 15, 2024.

[34] Ex. SCE-02 at 76.

[35] In response to data request CalAdvocates-SCE-A2308013-05, question 9, November 30, 2023, SCE provided a list of all maintenance tags involving avian protection from January 1, 2015 through November 1, 2023. The earliest maintenance tag in this list for the Castro circuit is dated January 10, 2019.

[36] In response to data request CalAdvocates-SCE-A2308013-09, question 6, February 8, 2024, SCE stated that the avian protection device is made of a flexible polymer.

protection device as evidence, but it is unclear whether any analysis of the avian protection device was performed.[37]

C. It is possible that damage to the conductor occurred during the replacement of pole 566 in 2015.

SCE's records of the pole replacement in April of 2015 contain photos of the pole before and after replacement, but do not record any work-in-process images.[38] The records provided by SCE do not rule out the possibility that the damage occurred during the pole replacement process. At the conclusion of this construction work, the contractors installed the avian protection device,[39] which would have covered and concealed any damage to the conductor.

SCE does not maintain quality control records of construction activities from 2016 and prior.[40] It is therefore not possible to determine whether SCE conducted quality control for the replacement of pole 566 in 2015, and if it had, whether it identified any defects. Quality control issues are discussed further in the testimony of Charles Madison (Ex. CA-09).

IV. SCE'S RECORDS DO NOT DEMONSTRATE THE COMPLETENESS AND VALIDITY OF ITS INSPECTIONS

As discussed above, the separation location was likely located under the avian protection device. Any pre-existing damage would therefore be hidden from visual inspection. Although SCE states that its inspection records prior to December 4, 2017 did not indicate any conductor damage at this pole,[41] this is to be expected if conductor damage was hidden from visual inspection under the avian protection device.

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[37] Koenigstein Fire Agency Report at 17.

[38] In response to data request CalAdvocates-SCE-A2308013-25, question 4, April 11, 2024, SCE provided records of the pole replacement in "CalAdvocates-SCE-A2308013-25 Contractor Work Order Packet.pdf"

[39] Ex. SCE-02 at 76.

[40] SCE's response to data request CalAdvocates-SCE-A2308013-29, question 5, April 24, 2024.

[41] Ex. SCE-02 at 76.

In 2017, SCE conducted an infrared inspection of the entire Castro circuit.[42] This inspection did not identify any "hot spots" that would require remediation.[43] However, SCE conducted its infrared inspection during the months of March through May of 2017,[44] when electric load is typically relatively low.[45] SCE did not have any requirement that the circuit be loaded to a specific amount (or a specific percentage of peak load) during the infrared inspection.[46]

Higher loading can amplify temperature differences, which can make it easier to identify hot spots.[47] SCE's guidance for hot spot identification was based on temperature differences, with a minimum temperature difference of 34 degrees Fahrenheit required to classify findings.[48]

SCE's infrared inspection policies do not require the recording of actual temperature differences unless a hot spot is identified.[49] SCE's infrared records for the inspection of the Castro circuit in 2017 consist of only a single line in Excel.[50] This manner of recordkeeping can obfuscate edge cases and lose useful information. As an example, a temperature difference of 33 degrees Fahrenheit would not have been

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[42] Ex. SCE-03 at 50.

[43] Ex. SCE-03 at 50.

[44] Ex. SCE-03 at 50.

[45] "Total U.S. hourly electricity load is generally highest in the summer months when demand peaks in the afternoon as households and businesses are using air conditioning on hot days. During the winter months, hourly electricity load is less variable but peaks in both the morning and the evening. Load is generally lowest in the spring and autumn when homes and businesses have less need for space heating or cooling." The US Energy Information Administration, *Hourly electricity consumption varies throughout the day and across seasons*, February 21, 2020, available at https://www.eia.gov/todayinenergy/detail.php?id=42915

[46] "SCE did not schedule and conduct IR inspections based on maximum loading times." SCE's response to data request CalAdvocates-SCE-A2308013-23, question 2, April 9, 2024.

[47] SCE's response to data request CalAdvocates-SCE-A2308013-23, question 1, April 9, 2024.

[48] Per SCE's response to data request CalAdvocates-SCE-A2308013-23, question 3, April 9, 2024, the lowest priority category for infrared inspections in 2017 was category 4, which corresponded to a temperature difference of 34 to 50 degrees Fahrenheit.

[49] SCE's response to data request CalAdvocates-SCE-A2308013-05, question 15, November 30, 2023.

[50] In response to data request CalAdvocates-SCE-A2308013-05, question 15, November 30, 2023, SCE provided records of its 2017 IR inspections on the Castro circuit.

recorded during the inspections in March through May of 2017. However, as SCE states, higher loading can amplify temperature differences.[51] Therefore, under heavier loading conditions, the same asset condition would stand out more sharply in infrared. A temperature difference of 33 degrees observed during low loading could increase to 34 or more when observed during high loading. This hypothetical asset would then register as a hot spot that would be classified as a finding.[52]

Due to the presence of the avian protection, only a non-visual inspection method, such as infrared, could have identified damage to the conductor under the avian protection device. However, SCE did not perform infrared under high loading, nor did SCE record temperature differences that did not meet its criteria for a "hot spot."[53] Consequently, there is no record of temperatures the infrared inspections measured in early 2017 at the location of the Koenigstein conductor separation.

It is possible that SCE's infrared inspections failed to identify the damage. Had SCE performed infrared inspections during heavy loading conditions, it is possible that such inspections would have detected the damaged conductor, which could have resulted in a repair or replacement prior to the conductor separation that led to the Koenigstein ignition.

Infrared inspections are discussed further in the testimony of Charles Madison (Ex. CA-09).

V. SCE HAD A HISTORY OF CONDUCTOR SEPARATIONS PRIOR TO 2017

SCE states that it began collecting data for downed conductor incidents in 2012.[54] However, SCE's wires-down database only dates back to 2015.[55]

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[51] SCE's response to data request CalAdvocates-SCE-A2308013-23, question 1, April 9, 2024.

[52] Per SCE's response to data request CalAdvocates-SCE-A2308013-23, question 3, April 9, 2024, the lowest priority category for infrared inspections in 2017 was category 4, which corresponded to a temperature difference of 34 to 50 degrees Fahrenheit.

[53] SCE's response to data request CalAdvocates-SCE-A2308013-05, question 15, November 30, 2023.

[54] Response to data request CalAdvocates-SCE-A2308013-36, question 2, May 3, 2024.

[55] Response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024.

I analyzed SCE's wires-down data, focusing on events with unknown causes. From 2015 through 2017, SCE recorded 831 wire-down incidents with unknown causes on its distribution lines (which is more than half of the total wire-down incidents in that time).[56] Of these incidents, 309 involved ACSR conductors.[57] In 66 records, SCE had not recorded any information at all on the conductor type, conductor size, or the cause of the wire-down event.[58]

During the years 2015 through 2017, SCE's data does not show a downward trend in the number of wire-down incidents with "unknown" causes.[59] Figure 1 below shows the number of wire-down incidents for each year from 2015 through 2020.

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[56] In response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024, SCE provided a subset of its wires down database, with line type limited to primary, secondary, and "unknown," and Cause limited to Arc, Connector Failure, Corrosion/Deterioration, Damaged Equipment, Damaged Wire, Equipment Failure, Other, Other Equipment, Other Equipment Failure, Splice Failure, Structure/Equipment/Hardware/Apparatus Failure, Unknown, and Wire Failure.

Per this database, SCE recorded 1,538 wire-down events in 2015-2017, 831 of which had an unknown cause.

[57] SCE's response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024.

[58] SCE's response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024. These 66 records have either "Unknown" or no data for the fields "Conductor Type," "Conductor Size," and "Suspected or Known Cause."

[59] In response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024, SCE provided a subset of its wires down database, with line type limited to primary, secondary, and "unknown," and Cause limited to Arc, Connector Failure, Corrosion/Deterioration, Damaged Equipment, Damaged Wire, Equipment Failure, Other, Other Equipment, Other Equipment Failure, Splice Failure, Structure/Equipment/Hardware/Apparatus Failure, Unknown, and Wire Failure.

Figure 1: Wires down incidents with "unknown" cause[60]

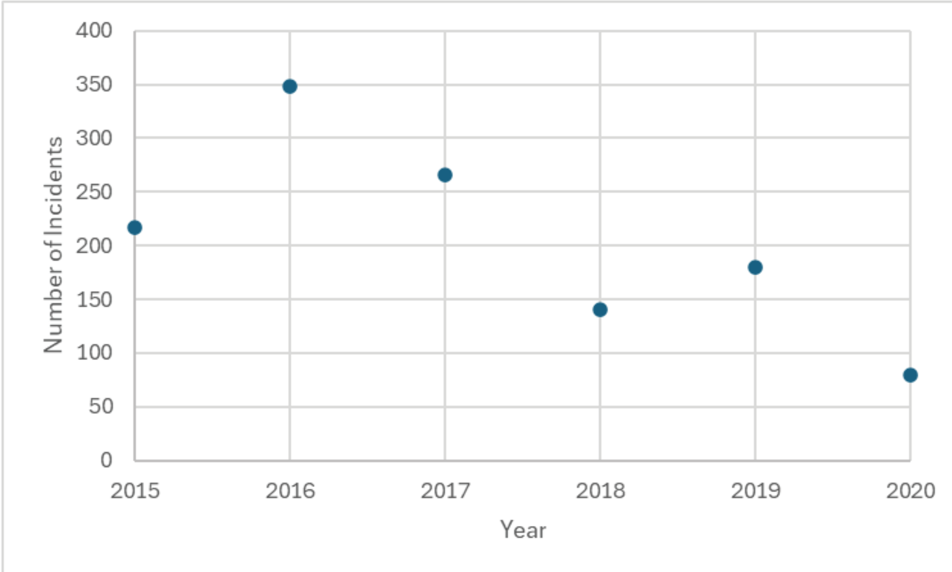

Figure 1 shows that there appears to be a general downward trend in wires down incidents with "unknown" cause from 2016 through 2020. However, there is no such trend in the years from 2015 through 2017.

In 2015 and 2016, SCE did not record any wire-down incidents related to "wire failure" or "damaged wire."[61] It is possible that incidents related to wire damage were recorded under another cause field, or as "unknown." If SCE did not collect data on whether wire-down incidents were related to damaged wire or wire failure prior to 2017, then SCE would have been unable to identify and remediate the root causes of such incidents.

VI. SCE HAD A HISTORY OF LINE SLAP INCIDENTS PRIOR TO 2017

SCE states that the line separation was preceded by a phase-to-phase contact.[62] As discussed further in my testimony on the Anlauf Ignition (Ex. CA-07), the Castro circuit

[60] Source data from SCE's response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024.

[61] Response to data request CalAdvocates-SCE-A2308013-36, question 1, May 3, 2024.

[62] Ex. SCE-02 at 71.

had experienced a history of line-slap incidents, and may not have been appropriately designed to mitigate the risk of line slap.

Additionally, in 2017, SCE had a practice of limiting conductor tension to mitigate aeolian vibration.[63] Reducing conductor tension makes line slap more probable in windy conditions. Refer to my testimony on the Anlauf Ignition (Ex. CA-07) for further discussion of this issue.

VII. SCE DID NOT KEEP COMPLETE RECORDS REGARDING CONDUCTOR INSTALLATION

SCE's system of record does not track conductor installation, and as a result, SCE is unable to state the date when the conductor that separated was first installed.[64] Nor can SCE identify the manufacturer of the conductor.[65]

Southwire, a manufacturer of ACSR similar to that used by SCE,[66] recommends certain operating temperatures designed to limit the loss of strength of the conductor to five to ten percent over the life of the line.[67] First, this indicates that, over many years of use, the physical strength of conductor can deteriorate. Second, it shows that high operating temperatures contribute to a loss of strength.

Because SCE does not track the age or manufacturer of conductor, it is limited in its ability to estimate loss of strength or other changes to physical properties that occur over long periods of time. And because these deteriorations may not be detectable through visual inspection,[68] SCE is limited in its ability to identify when such loss of strength has occurred.

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[63] SCE's response to data request CalAdvocates-SCE-A2308013-09, question 13, February 8, 2024.

[64] Response to data request CalAdvocates-SCE-A2308013-05, question 9, November 30, 2023.

[65] Response to data request CalAdvocates-SCE-A2308013-06, question 5, December 11, 2023.

[66] In response to data request CalAdvocates-SCE-A2308013-22, question 8, March 27, 2024, SCE provided an ampacity simulation using software developed by Southwire.

In response to an email on April 5, 2024, Southwire provided a separate ampacity simulation using the same software. Both simulations use identical physical and electrical properties for #4 ACSR.

[67] Response from Southwire to an email on April 5, 2024.

[68] For example, Southwire provides temperature limits meant to limit annealing of the aluminum in

(continued on next page)

In 2014, SCE launched its Overhead Conductor Program, which implemented a risk-informed approach for conductor replacement.[69] This program analyzed several risk factors related to conductor and ranked circuits for remediation and replacement.[70, 71] However, because SCE failed to retain records on the age or manufacturer of conductors, SCE's analysis of risk factors is limited. Had SCE tracked the age and manufacturer of conductors, it could have analyzed the risk associated with older conductors. Thus, tracking age and manufacturer could have enabled SCE to implement its Overhead Conductor Program in a more effective manner.

VIII. SCE'S RECLOSER SETTINGS DID NOT PROVIDE SUFFICIENT PROTECTION DURING A RED FLAG WARNING

SCE states that the line separation was preceded by a phase-to-phase contact.[72] A fuse operated to interrupt the fault.[73] The nearest upstream recloser, RAR 0179, registered the phase-to-phase fault, but did not immediately operate to de-energize the line.[74] Approximately two seconds later, the recloser recorded a phase-to-ground fault as a result of the separation of the conductor.[75]

In 2017, SCE did not employ "fast trip" or "fast curve" settings on its reclosers.[76] (This issue is further discussed in the testimony of Justin Hagler, Ex. CA-06.) If SCE had implemented such a program to address fire risk during Red Flag Warning days prior to December 4, 2017, RAR 0179 would presumably have been within the scope of the

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ACSR. Annealing refers to a change to the crystal structure of a material, which occurs internally and may not be visible from the ground or without magnifying equipment.

[69] Ex. SCE-03 at 30.

[70] Ex. SCE-03 at 30.

[71] "Under the program's risk assessment process, the Castro Circuit was ranked 1,139 out of 3,046 total circuits with overhead conductor and thus not scheduled for potential OCP project work until 2026." Ex. SCE-03 at 30-31.

[72] Ex. SCE-02 at 71.

[73] Ex. SCE-02 at 71.

[74] Ex. SCE-02 at 71.

[75] Ex. SCE-02 at 71.

[76] SCE's response to data request CalAdvocates-SCE-A2308013-31, question 15, April 25, 2024.

program, since it served a "Very High" fire-risk area.[77, 78] Fast curve settings shut off power rapidly when the recloser registers a fault current, which reduces the amount of energy released at the fault location.[79]

With fast curve settings enabled, it is possible that recloser RAR 0179 would have operated to de-energize the line in response to the phase-to-phase fault (the first fault at the Koenigstein location). Then, even if the conductor had still separated two seconds later, it would have been de-energized before it struck the ground, mitigating the risk of an ignition.

System protection settings are discussed further in the testimony of Herman Eng (Ex. CA-10).

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[77] Ex. SCE-03 at 9 (and footnote 4).

[78] Refer to the testimony of Benjamin Tang, Exhibit CA-04, for additional information about wildfire risk in the vicinity of the Castro circuit.

[79] SCE, *2023-2025 Wildfire Mitigation Plan R1*, October 26, 2023 at 331.

IX. WITNESS QUALIFICATIONS – HOLLY WEHRMAN

My name is Holly Wehrman. My business address is 505 Van Ness Avenue, San Francisco, California. I am employed by the California Public Utilities Commission as a Senior Utilities Engineer (Specialist) in the Public Advocates Office, Safety Branch.

I received a Bachelor of Science degree in aerospace engineering from the California Polytechnic State University, San Luis Obispo. After working in aerospace engineering in the private sector, I joined the CPUC in 2018 as a Utilities Engineer in the Gas Safety and Reliability Branch of the Safety and Enforcement Division. In this role, I performed inspections of gas facilities and audits of gas operations and maintenance records.

In 2020, I joined the Public Advocates Office (Cal Advocates) in the Wildfire Safety Section of the Safety Branch. Since joining Cal Advocates, I have participated in proceedings regarding wildfire mitigation plans (WMPs) at the California Office of Energy Infrastructure Safety since 2021 and, prior to that, the Wildfire Safety Division of the Commission. In particular, I have served as Cal Advocates' lead analyst and prepared comments related to Pacific Gas and Electric Company's (PG&E's) WMPs from 2021 through 2024. I have also reviewed and analyzed the WMPs of Bear Valley Electric Service.

In the Public Advocates Office, I have participated in several enforcement matters related to wildfires. These include preparing comments on the Enhanced Oversight and Enforcement process for PG&E, and Administrative Consent Orders or Administrative Enforcement Orders issued by the Safety and Enforcement Division related to the Zogg, Dixie, and Kincade Fires.

Additionally, I have participated in policy proceedings and resolutions related to wildfire safety and risk. I contributed testimony in PG&E's General Rate Case (A.21-06-021). I am working on the implementation of Senate Bill 884, which pertains to long-term undergrounding plans to reduce wildfire risk and improve reliability.

This concludes my statement of qualifications.