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Witness: Yari

PREPARED REBUTTAL TESTIMONY OF

ALI YARI

ON BEHALF OF

SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

DECEMBER 16, 2016

#310790

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PREPARED REBUTTAL TESTIMONY OF ALI YARI

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

I. INTRODUCTION

Q. Please state your name and identify your current position.

A. My name is Ali Yari. I am the Director of Electric Grid Operations for San Diego Gas & Electric Company ("SDG&E"). In that position, I am responsible for overall transmission system operations and reliability functions.

Q. Have you previously submitted testimony in this proceeding?

A. No. My qualifications are attached to this testimony as Appendix 1.

Q. What is the purpose of your rebuttal testimony?

A. My rebuttal testimony responds to the Prepared Testimony of Mr. Nils Stannik on behalf of the Office of Ratepayer Advocates ("ORA") that was submitted in this proceeding on October 3, 2016 ("Stannik Testimony"). More specifically, I respond to Mr. Stannik's testimony regarding the Witch Fire, which he discusses on pages 6-17. I also respond to the portion of the testimony that Ms. Jennifer Betts submitted on behalf of the San Diego Consumers' Action Network ("SDCAN") on October 17, 2016 ("Betts Testimony") that presents an alternative and discredited theory for the ignition of the Witch Fire.

Q. How is your testimony organized?

A. In Section II, I begin my testimony by discussing SDG&E's actions and decisions with respect to the span of Tie Line 637 ("TL 637") between Poles Z416675 and Z416776 which is alleged to have been involved in the ignition of the Witch Fire. SDG&E has previously demonstrated that its actions and decisions with respect to the design, construction, maintenance and inspection of those facilities were reasonable and in compliance with applicable

requirements. As a result, SDG&E had no reason to suspect, prior to October 21, 2007, that its facilities would be involved in the ignition of the Witch Fire. Mr. Stannik has not refuted or even challenged those pre-October 21, 2007 actions and decisions. Instead, Mr. Stannik focuses entirely on SDG&E's actions and decisions on October 21, 2007, the day of the Witch Fire.

In Section III, I respond to Mr. Stannik's allegations about the events of October 21, 2007. I demonstrate that SDG&E's actions and decisions on that day, prior to the Witch Fire ignition, were reasonable based on the information available to it in real-time. Whereas Mr. Stannik concludes, without any basis other than hindsight analysis, that SDG&E's response to the faults on TL 637 was too slow, I show that in fact SDG&E was concerned about those faults, dispatched Troubleshooters and patrolmen to investigate, but simply could not discover the cause of the faults in time to avoid the Witch Fire, due to the Santa Ana winds that hampered patrols, the remote location of TL 637, and the fact that resources were also being devoted to other emergencies on that day.

While I do not believe that post-ignition events are relevant to the reasonableness of SDG&E's actions prior to the Witch Fire, Mr. Stannik has discussed certain post-ignition events, and I respond to that testimony as well. I show that Mr. Stannik has greatly mischaracterized those events in order to create the false impression that SDG&E delayed in de-energizing TL 637 and disabling automatic reclosing after it knew its conductors were implicated in the ignition. That is not true.

In Section IV, I respond to the Ms. Betts's adoption of an alternative Witch Fire ignition theory, whereby down guy wires purportedly caused phase-to-ground faults that led to multiple ignition points. Although the "expert" (who is not a witness in this case) who developed this theory has pressed it upon all levels of government, this theory has never been adopted by any

federal or state agency or court and is directly contrary to the findings of the investigation of the California Department of Forestry and Fire Protection ("Cal Fire"). While the Commission's 2008 investigation into the Witch and Rice Fires was pending,[1] SDG&E investigated the theory now advanced by SDCAN, and provided information to the Consumer Protection and Safety Division ("CPSD") that refuted it. Despite the fact that CPSD was generally opposed to SDG&E in the Witch/Rice OII, even the CPSD did not adopt the theory Ms. Betts now presents.

II. SDG&E'S ACTIONS AND DECISIONS REGARDING TL 637 PRIOR TO OCTOBER 21, 2007

Q. Please describe the SDG&E facilities alleged to have been involved in the ignition of the Witch Fire.

A. TL 637 is a 69 kilovolt ("kV") transmission line that connects two substations at Santa Ysabel and Creelman, from which power is routed to homes and other locations via distribution lines. TL 637 is approximately 14 miles long, and at the time of the 2007 Wildfires, there were over 150 poles supporting the three conductors (or powerlines). TL 637 traverses a remote, backcountry section of San Diego County that includes private and public lands, including lands owned by the County of San Diego, the U.S. Bureau of Land Management, and a small portion of the Cleveland National Forest. The route is shown in Figure 1 below:

[1] "Investigation on the Commission's Own Motion into the Operations and Practices of San Diego Gas & Electric Company Regarding the Utility Facilities linked to the Witch and Rice Fires of October 2007" I.08-11-006 (Issued November 12, 2008) (" Witch/Rice OII").

Figure 1 – Tie Line 637 Route

More detailed maps appear in Appendix 2.[2] The fire is alleged to have ignited in the vicinity of the span between Poles Z416675 and Z416676.

Q. What is your understanding of Cal Fire's theory as to how the Witch Fire ignited?

A. The Cal Fire Investigator, Matthew Gilbert, determined that a fault on TL 637 between Poles Z416675 and Z416676 on October 21, 2007 led to arcing of the lines, which created hot particles that landed in the grassy fuels in the fire origin area, igniting the fire that was then spread by the wind.[3] Mr. Gilbert concluded that the fire ignited after a fault that occurred at 12:23 pm on October 21, 2007 because an Air Tanker Pilot observed the fire at 12:29 pm.[4]

Q. Are you familiar with SDG&E's September 25, 2015 direct testimony regarding the facilities that Cal Fire alleged to have been involved in the ignition of the Witch Fire?

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[2] In the maps in Appendix 2, which were created using Google maps, with GIS information, the route of TL 637 is shown in red and extends between the Santa Ysabel and Creelman substations.

[3] "California Department of Forestry and Fire Protection Investigation Report," Witch Fire, Incident No. 07-CA-MVU-10432, at pp. 2, 14, 19.

[4] *Id*. at p. 14.

A. Yes. On behalf of SDG&E, Mr. Darren Weim testified about the engineering and inspections of TL 637.[5]

Q. What did Mr. Weim conclude about those facilities?

A. Based on his review of design and construction records dating back to 1959, he concluded that the facilities were properly designed and engineered. He also concluded that the facilities had been appropriately inspected and maintained, with over 34 inspections taking place in the ten years prior to October 2007.

Q. Did Mr. Stannik address or refute Mr. Weim's testimony regarding the design, engineering, inspection or maintenance of TL 637?

A. No.

Q. So has Mr. Stannik questioned or challenged the reasonableness of SDG&E actions and decisions with respect to those facilities as they existed, prior to October 21, 2007?

A. No. Mr. Stannik's testimony takes issue only with the actions and decisions SDG&E took on the day of the Witch Fire, October 21, 2007, particularly with respect to SDG&E's response to faults on TL 637.

Q. If, as Mr. Weim testified, the facilities were properly engineered and inspected, how did the faults occur on TL 637?

A. No one knows for sure, since there were no eyewitnesses to the ignition. But it is believed that the extreme winds altered the facilities and caused the conductors to come into contact with one another. No issues were noted during the recent inspections of TL 637 before the fire,[6] nor were there any faults on TL 637 between the date of the most recent inspection and

[5] Prepared Direct Testimony of Darren Weim on Behalf of San Diego Gas & Electric Company" (September 25, 2015) ("Weim Testimony"), pp. 11-18.

[6] Weim Testimony, pp.16-18.

the Santa Ana wind event in October 2007. There were faults after the fire, in November 2007 in lower winds, which also shows that the problem seems to have originated in late October 2007, and not before.

Q. Had there been any fire ignitions linked to TL 637 prior to the Witch Fire?

A. Not to my knowledge.

Q. Do you believe there is any evidence that SDG&E knew or should have known prior to October 21, 2007 that TL 637 would be involved in the ignition of the Witch Fire?

A. No, I do not.

III. SDG&E'S ACTIONS AND DECISIONS REGARDING TL 637 ON OCTOBER 21, 2007

Q. In his testimony regarding the events of October 21, 2007, Mr. Stannik testifies that "SDG&E's dispatch and response times to reported trips on TL637 are concerning, unreasonable, and directly led to the ignition of the Witch Fire."[7] What is your response to that allegation?

A. I disagree. As I discuss in subsection A below, SDG&E's actions and decisions on October 21, 2007 prior to the ignition of the Witch Fire were reasonable and prudent based on the information it had available in real-time (and under the circumstances of that day), and show that SDG&E promptly and reasonably responded to that information.

Mr. Stannik also devotes a significant portion of his testimony regarding the Witch Fire to events that took place after the ignition of the fire, which I discuss in subsection B below. While, I do not believe that post-ignition actions have any bearing on the reasonableness of SDG&E's conduct prior to the fire, which I understand is the issue in this phase of the case, I

[7] Stannik Testimony, p. 10.

also believe that Mr. Stannik has mischaracterized those post-ignition events by trying to create the false impression that SDG&E knew that its conductors were implicated in the ignition of the fire, yet did not de-energize or disable automatic reclosing on TL 637.

A. SDG&E's October 21, 2007 Pre-Ignition Actions and Decisions

Q. Please explain the events of October 21, 2007 on TL 637.

A. At 08:53 am on October 21, 2007, the first of four faults on TL 637 occurred.[8] The Transmission System Operator[9] at SDG&E Grid Operations received a notification of the fault through the Energy Management System. Based on the information available at Grid Operations, the System Operator did not know the specific location of the fault (other than that it occurred somewhere along the approximately 14 miles of TL 637), the nature of the fault (whether it was, for example, phase-to-ground or phase-to-phase), or the cause of the faults (whether it was caused by debris in the wind, blowing branches, animals, *etc*.).

The Transmission System Operator promptly dispatched Electric Troubleshooters at 09:05 and 9:08 to the substations at either end of TL 637 to gather additional information about the fault.[10] Troubleshooter Ray Necochea was dispatched to Santa Ysabel and Troubleshooter Mike Higbee was dispatched to Creelman. These Troubleshooters are highly skilled, qualified electric workers trained to recognize obvious safety hazards and to make conditions safe for the public and employees. Both of these Troubleshooters reported back to the Transmission System Operator at Grid Operations at approximately 10:00.[11] The Troubleshooters found that the

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[8] See Appendices 3 and 4. Appendix 3 is the Operations Shift Supervisor ("OSS") Daily Log from October 21, 2007. Appendix 4 is the Electric Switching Order for TL 637 on October 21, 2007.

[9] The Transmission System Operator's function is to implement real-time actions to ensure the safe and reliable operation of SDG&E's Transmission Grid and associated interconnections and to ensure compliance with FERC mandatory reliability standards.

[10] See Appendix 4.

[11] See Appendix 4.

protection devices at each end of the line operated and opened the circuit breakers, which remained open for ten seconds, and then reclosed the line, because the faults had cleared within the ten seconds.

Q. What is the significance of what the Troubleshooters learned at the substation?

A. They learned that the faults were temporary because they had cleared within 10 seconds, and so the flow of electricity was restored.

Q. Were any other observations communicated?

A. Yes. Troubleshooter Necochea asked if a patrol had been dispatched, and the Transmission System Operator responded that a patrol had not yet been initiated.[12] As discussed below, SDG&E generally initiates a patrol within one business day in this type of situation. The Transmission System Operator then asked Mr. Necochea if he could further investigate the TL 637 facilities himself, and Mr. Necochea responded that the wind was blowing "a gazillion miles an hour out here. I can't even see outside without my eyes watering."[13] Mr. Necochea further indicated that it wouldn't be possible to patrol TL 637 without a helicopter because "It'd take days" and that all he could "check is along the main roads here but then [TL 637] takes up into the mountains and stuff over Rancho."[14]

Q. After the first fault, did SDG&E know exactly where on TL 637 that fault had occurred or what had caused it?

A. No. The relay records available to the Troubleshooters showed that the fault occurred in "Zone 1." Zone 1 covers approximately 85 percent (or more than 11 miles) of the approximately 14 mile distance on TL 637 between the Santa Ysabel and Creelman substations. So SDG&E

[12] See Appendix 5.

[13] See Appendix 5.

[14] See Appendix 5.

would not have known that the faults occurred within the approximately 600 foot span between poles Z416675 and Z416676, where the Witch Fire is alleged to have originated. They also would not have known the cause of the fault.

Q. In your experience, would you assume that an indication of a transmission line fault meant that two conductors were coming into contact with one another?

A. No I would not, and based on my review of the evidence, neither Grid Operations nor the Troubleshooters knew that the conductors were contacting one another. Conductor-to-conductor contact is relatively rare, whereas on a windy day, a fault is not unusual given that there can be wind-blown vegetation or other debris that can come into contact with the conductors.

Q. Was anything else significant happening in the timeframe after the first fault on TL 637 from a Grid Operations perspective?

A. Yes. The events on TL 637 were one of number of events that SDG&E was attempting to respond to on October 21, 2007. The Santa Ana windstorm in late October 2007 triggered numerous fires, not just the Witch, Guejito and Rice Fires, and it also caused non-fire damage. Prior to the Witch Fire, SDG&E was responding to the Harris Fire, which was reported at 9:30 am in southern San Diego County.[15] The Harris Fire burned in the vicinity of SDG&E's 500 kV transmission line, the Southwest Powerlink. Immediately before and after the second fault, as the notes in Appendices 3 and 6 make clear, SDG&E personnel were responding to Cal Fire reports that the Harris Fire was approaching the Southwest Powerlink, and Cal Fire's request to drop fire retardant in that area, which required SDG&E to dispatch wash crews to the area. By 11:42, Cal Fire requested that SDG&E de-energize the line to allow air drops of fire retardant in

[15] See "California Fire Siege 2007: An Overview" at 20. This report on the 2007 Wildfires is attached as Appendix 2 to the Prepared Direct Testimony of Lee Schavrien on Behalf of San Diego Gas & Electric Company (September 25, 2015).

the area.[16] At 12:15, SDG&E's Grid Operations opened the Southwest Powerlink as a forced outage.

This was a major event consuming SDG&E resources – including the attention of Grid Operations personnel and the resources available to conduct patrols – on October 21, 2007. SDG&E was particularly concerned about the outage of this major transmission line since it was essential to grid stability across Southern California. In real-time, the response to the Harris Fire was a major issue. SDG&E was also taking seriously the faults on TL 637, but there was no indication of any kind of emergency since, as I noted above, faults are not particularly unusual on a windy day, and SDG&E had no reason to suspect that the faults were resulting from conductors contacting one another or that hot particles were being emitted.

Q. What happened next on TL 637?

A. At 11:22, TL 637 faulted again.[17] Mr. Necochea and Mr. Higbee were again dispatched at 12:01 to the Santa Ysabel and Creelman substations. They reported back to Grid Operations at approximately 12:19 (from Santa Ysabel) and 12:23 (from Creelman) that the circuit breakers had again operated and had reclosed. While the Troubleshooters were at the respective substations, TL 637 tripped and reclosed again, at 12:23.[18] This is the fault that is believed to have ignited the Witch Fire. Mr. Nechochea reported a Zone 1 fault and requested a patrolman be sent to patrol the line.[19] Under SDG&E's Transmission Monitoring & Control ("TMC") Procedure 1100 ("Transmission Line Fault Patrol"),[20] when a line faulted and immediately reclosed and the cause for the trip was unknown, the lines would be patrolled either in a vehicle

[16] See Appendix 7.

[17] See Appendix 4.

[18] See Appendix 4.

[19] See Appendix 8.

[20] See Appendix 9.

or aerially (via helicopter) at the discretion of the field supervisor. In practice, the line would generally be patrolled within one business day. Patrolmen Henry Flynn was sent to patrol TL 637 at 12:33.[21] At 12:39 Patrolman Flynn informed the Grid Operations Transmission System Operator that he would go out to patrol TL 637 in person because he did not think an aerial patrol was possible given the wind conditions.[22]

Q. What happened after the second and third faults?

A. The Witch Fire was observed by Air Tanker Pilot Mike Venable at 12:29, according to the Cal Fire Report.

Q. When did SDG&E's Grid Operations become aware of the Witch Fire?

A. Grid Operations logged a report of a fire in the Santa Ysabel area at 13:10.[23] Santa Ysabel is an unincorporated community in eastern San Diego County.

Q. Was SDG&E aware that TL 637 was implicated in the ignition of the Witch Fire at that time?

A. No, as I discuss below, we did not learn that until later in the day.

Q. Did Patrolman Flynn undertake his patrol?

A. He drove out to Ramona, in the vicinity of TL 637, but he did not conduct the patrol because of the fire reported near Santa Ysabel, which presented a dangerous situation.[24]

Q. What happened next?

A. Immediately after the ignition of the fire, SDG&E dispatched John Hotta and Brian Crouch to the area of the Witch Fire.[25] Mr. Hotta, who was a Construction Supervisor in

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[21] See Appendix 10.

[22] See Appendix 11.

[23] See Appendix 3.

[24] See Appendix 12, pp. 66-69.

SDG&E's Transmission Construction and Maintenance Department, had been en route to the area of the Southwest Powerlink, due to the Harris Fire, but he was re-routed by Bret Ball, SDG&E's Transmission Construction and Maintenance Manager, to Santa Ysabel.[26] Mr. Hotta was sent there to investigate any damages to SDG&E facilities in the area from the fire and get crews dispatched as necessary.[27] Mr. Ball reported that Hotta was en route to Santa Ysabel at 13:14.[28] Mr. Crouch was dispatched to serve as SDG&E's fire coordinator. At 13:59, Mr. Ball requested that Grid Operations disable automatic reclosing on TL 637.[29] This was an important step because wood poles can burn to the ground during a fire, and if an energized line then falls to the ground with reclosing active, it can cause further fires or harm to firefighters or other people in the vicinity. At 14:01, the operator turned off automatic reclosing via EMS at the Santa Ysabel substation, and at 14:05 requested a troubleshooter be dispatched to the Creelman substation to turn off automatic reclosing.

Q. What happened once Mr. Hotta arrived at Santa Ysabel?

A. He has testified that he made his way to TL 637, which was difficult in light of smoke and winds he estimated to be in excess of 70 mph.[30] Once he got to TL 637, Mr. Hotta observed that the winds were so constant that conductors appeared to be blowing out sideways, instead of hanging vertically.[31] Mr. Hotta proceeded along an access road where he met a Cal Fire crew at

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[25] See Appendix 3.

[26] *See* Direct Testimony of John Hotta, San Diego Gas & Electric Company (Witch Fire), p. 1. I.08-11-006 (June 5, 2009) ("Hotta Testimony"). A copy of the Hotta Testimony is attached at Appendix 18.

[27] *Id*.

[28] See Appendix 3.

[29] *See* Appendix 4.

[30] Hotta Testimony, pp. 2-3.

[31] *Id*.

around 15:00.[32] After investigating the scene, he called Grid Operations and asked that TL 637 be de-energized in order to ensure the safety of the firefighters in the area since the fire was still burning under and around the lines in that area.[33] TL 637 faulted a fourth time at 15:25, automatically reclosed at the Creelman substation only, and was subsequently de-energized at 15:27 by the operator via EMS and left out of service.[34]

Q. When did it become clear that the faults on TL 637 were linked to the ignition of the Witch Fire?

A. Not until investigators got out to the scene. The first official indication would have been after Cal Fire Investigator Gilbert began his work. In his investigation report, Mr. Gilbert notes that he began his investigation on the morning of October 22, 2007, and he linked marks on SDG&E's conductors to what he determined to be the origin area of the fire on October 24, 2007.[35] Mr. Gilbert then began contacting SDG&E to gather information related to his investigation.

Q. In his testimony, Mr. Stannik criticizes SDG&E's response time to the faults on TL 637 on October 21, 2007.[36] How do you respond to that criticism?

A. SDG&E promptly took action in response to the faults on TL 637. First, as I said earlier, Grid Operations dispatched Troubleshooters Necochea and Higbee to investigate the faults at the substations. From the Santa Ysabel substation, Mr. Necochea requested a patrol. As noted earlier, Mr. Necochea indicated that it wouldn't be possible to patrol TL 637 without a helicopter

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32 *Id*.

33 *Id*.

34 *See* Appendix 3.

35 "California Department of Forestry and Fire Protection Investigation Report," Witch Fire, Incident No. 07-CA-MVU-10432, pp. 11, 15.

36 Stannik Testimony, p. 10.

because “It’d take days” and that all he could “check is along the main roads here but then it takes up into the mountains and stuff over Rancho.” Patrolman Flynn concluded that an aerial patrol would not be possible due to the winds. The conditions were such that no patrol could have been undertaken that would have allowed SDG&E to detect that the conductors were contacting one another in time to prevent the Witch Fire.

Even if a patrol had been dispatched sooner, it would have taken at least several hours to patrol the 11 miles of Zone 1 on TL 637, which is in a remote, backcountry area of SDG&E’s service territory that includes rough, off-road terrain. Patrols stop at and examine every pole (and there were over 150 poles on TL 637) and line looking for problems, and so even the 11 miles of Zone 1 could not have been quickly examined. At his deposition, Patrolman Flynn testified that it would take an entire shift, which he explained was eight hours, to patrol TL 637 by land.[37] Based on my own personal experience of the access road along TL 637, I think that eight hours is frankly an optimistic estimate. Traveling along the unpaved access road requires passing through multiple gates, which requires the driver to exit the vehicle, unlock the gate, drive through, exit again, re-lock the gate and return to the vehicle. To reach many poles and spans, the driver must divert off of the main access road onto a spur road. Thus, there is no basis to conclude that SDG&E would have discovered in time that conductors were contacting one another in the high winds, or that arcing was occurring and hot particles were being emitted, even if SDG&E’s patrolman had been dispatched after the first fault. Unfortunately, the Witch Fire ignited before SDG&E could gather sufficient information.

With the benefit of hindsight, Mr. Stannik nevertheless criticizes SDG&E’s response times, but he has no basis for that criticism other than his hindsight bias. SDG&E asked Mr.

[37] See Appendix 12, pp. 35-36, 57-58.

Stannik in discovery as to whether he had studied or analyzed utility response times to transmission line faults, and he offered no such studies or analysis.[38] Further, Mr. Stannik offered no explanation or evidence as to what he thinks the response times should have been; he just says they were too slow, which is a conclusion one can only reach knowing that the Witch Fire ignited.[39] Since Mr. Stannik has never been to the vicinity of the Witch Fire ignition,[40] he cannot understand the difficulties I mentioned above with regard to getting a patrol to find the problem.

Q. Why didn't SDG&E de-energize TL 637 or disable automatic reclosing prior to the ignition of the Witch Fire?

A. There was no information available at that time that suggested there was a problem that would have required those measures. Faults are not that uncommon on a windy day. If SDG&E had known, prior to the ignition of Witch Fire, that its lines were contacting one another and that there was arcing that could ignite a wildfire, I have no doubt that TL 637 would have been de-energized. In my experience, SDG&E had not previously experienced fires related to transmission lines contacting one another and faulting in high winds. De-energizing lines is not taken lightly because they can cause power outages to customers.

Q. What is your response to Mr. Stannik's claim that SDG&E should have been especially concerned about the multiple faults on TL 637 in a single day in light of the prior fault history on TL 637?[41]

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38 See Appendix 13 (ORA Response to Request 6).

39 See Appendix 13 (ORA Response to Requests 7 and 8).

40 See Appendix 13 (ORA Response Request 1).

41 Stannik Testimony, pp. 14-15.

A. As I discussed above, SDG&E was actively investigating the faults on TL 637 on October 21, 2007. But nothing in the fault records that Mr. Stannik points to would have provided any notice that TL 637 would be involved in the ignition of a fire. Mr. Stannik offers no evidence for the leap he makes – that multiple faults should be an indicator that conductors are coming into contact with one another and starting a fire. In fact, our actual experience does not support that leap.

B. SDG&E's October 21, 2007 Post-Ignition Actions and Decisions

Q. Mr. Stannik also says "SDG&E's actions after the time of ignition of the Witch Fire demonstrated a similarly slow response."[42] How do you respond to that testimony?

A. There is nothing SDG&E could have done after the ignition of the Witch Fire that would have avoided the fire. That said, I think it is important to show that Mr. Stannik has mischaracterized the events of October 21, 2007 after the ignition of the Witch Fire.

Q. In your opinion, how has Mr. Stannik mischaracterized post-ignition events?

A. Mr. Stannik states that "After the time of ignition of the Witch Fire, calls between SDG&E personnel make clear that they believed that the contact between lines not only occurred, but was a probable cause of the fire."[43] It is important to note the order in which both that sentence and the discussion he uses to support it are written.[44] First, Mr. Stannik discusses "the contact between lines." Next, Mr. Stannik discusses the contact being "a probable cause of the fire." It appears that Mr. Stannik is trying to create the impression that audio recordings relating to contact between the lines precede and inform audio recordings relating to the cause of the fire, and show that SDG&E knew that contact between the lines was the cause of the fire.

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42 Stannik Testimony, p. 10.

43 Stannik Testimony, pp. 12, 15-16.

44 Stannik Testimony, pp. 12-13.

But in doing so, Mr. Stannik ignores the chronological order in which those audio recordings took place. The audio recordings relating to the contact between the lines took place after, not before, the audio recordings relating to the faults and the cause of the fire.

Q. Please elaborate and explain why that chronological order is important.

A. Mr. Stannik first discusses three audio recordings from calls made by John Hotta about repair work and lines having come into contact with one another, or "slapp[ing] together."[45] Those calls took place at 15:27, 16:04 and 16:06, which was after Mr. Hotta had arrived to investigate the fire in the vicinity of TL 637; he was the first SDG&E person to actually observe the conductors.[46] Mr. Stannik then discusses audio recordings allegedly relating to the cause of the fire, but those calls took place at 13:10, 13:34, and 14:43, which occurred before Mr. Hotta's calls.[47] Mr. Stannik presents the calls in such a way to suggest SDG&E knew about the conductor contact when discussing the fire. In fact, the earlier calls (which he discusses second) all happened soon after SDG&E became aware of the fires, but before Mr. Hotta had gone out to patrol TL 637. So Mr. Stannik is simply wrong when he tries to show (1) that SDG&E knew the conductors had contacted one another, and (2) that SDG&E knew this was the cause of the fire. Thus, there is no way SDG&E could have concluded "that they believed that the conduct between the lines not only occurred, but was a probable cause of the fire." But not only has Mr. Stannik confused the timeline to create an incorrect impression, he has also mischaracterized the audio recordings and other evidence he refers to in his testimony.

Q. How has Mr. Stannik mischaracterized the audio recordings and evidence?

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[45] Stannik Testimony, pp. 12-13 and footnotes 49-51.

[46] See Appendix 14, hereto. This Appendix is a log of audio files that SDG&E produced in discovery, and which Mr. Stannik included in Exhibit ORA-06 (beginning at p. 481) under the file name "01 – SDGE0246762-SDGE0246773.pdf."

[47] Stannik Testimony, p. 13 and footnotes 53, 55, and 56.

A. First, Mr. Stannik references Mr. Necochea's annotation in the Santa Ysabel substation log after the third fault of "Fire/Wind" and claims that this annotation describes the "cause" of the fault.[48] At Mr. Necochea's deposition (which Mr. Stannik attached as an exhibit to his testimony), he was questioned at length about the substation log. When asked whether he was assigning a "cause" to each of the faults he recorded, as Mr. Stannik suggests he was, Mr. Necochea responded: "What I think caused it? No. I am just reporting the conditions at the time more than that."[49] With respect to the entry of "Fire/Wind," Mr. Necochea said he "wrote 'fire' because I saw a plume of smoke – and it is still windy." He elaborated: "I wrote that down as the conditions that were prevailing at that particular moment."[50] When asked repeatedly whether he believed on October 21, 2007 that TL 637 caused the Witch Fire, Mr. Necochea responded: "for me to tell you that I knew that tie line caused that fire at that point, I can't say yes to that"[51] and "I didn't know what caused the fire. I reported conditions."[52]

Second, Mr. Stannik includes in his testimony the following excerpt of 14:43 call between Grid Operations and Emergency Services:

> Operator: "We also have a fire out there on 637 between Santa Ysabel and Creelman…"
>
> Manager: "That must have been the reason that was tripping, huh? And we just didn't know it?"

---

48 Stannik Testimony, p. 13.

49 See Appendix 15, p. 129.

50 See Appendix 15, p. 140.

51 See Appendix 15, p. 138.

52 See Appendix 15, p. 141.

Operator: "Absolutely. That's what's going on. We got a Zone 1, which is about 50% out that line."[53]

Mr. Stannik also cites two later calls. In one call, there was a statement that: "We had a Zone 1 out of Santa Ysabel and so the fire's gotta be somewhere within that first Zone."[54] In the other call, there was a statement that "We had a Zone 1 out of Santa Ysabel so I'm sure that's probably where the fire's at."[55] Mr. Stannik assumes that all of these audio recordings indicate that SDG&E knew that faults on TL 637 "was a probable cause of the fire."[56] I believe, however, that these statements reflect a different conclusion – namely that the fire in the vicinity of TL 637 had caused the faults, and not the other way around.

Q. Why do you reach that conclusion?

A. Because it is well known that particles within smoke from a fire can create a path between electric conductors that can lead to faults. That is why the "Manager" in the excerpt above, after being informed of the fire, said "That must have been the reason it was tripping, huh? And we just didn't know it." When the manager says "That," he means *the fire*, and he is clearly saying the fire is the reason it was tripping, and not the other way around. It may be that Mr. Stannik reached the wrong interpretation of this statement because of his confusion about the timeline regarding the audio recordings.

Q. What bearing does Mr. Stannik's mischaracterization of post-ignition events have on the outcome of this case?

---

53 Stannik Testimony, p. 13.

54 Stannik Testimony, p. 13.

55 Stannik Testimony, p. 13.

56 Stannik Testimony, p. 12.

A. It should have no bearing on the outcome because it is irrelevant what SDG&E believed about the ignition after the ignition occurred. Only SDG&E's pre-ignition conduct is at issue. But I believe Mr. Stannik is trying to create the impression that SDG&E did not de-energize TL 637 or disable automatic reclosing even after it became aware that conductor contact may have caused the fire, which is just false.

IV. SDCAN'S DOWN GUY WIRE THEORY

Q. What is your understanding of Ms. Betts's allegations regarding the ignition of the Witch Fire?

A. It is not entirely clear, but I believe she is advancing a theory developed by Mr. Edward Clark that the Witch Fire was the result of multiple ignitions resulting from phase-to-ground contact caused by a down guy wire installation. Ms. Betts herself offers no analysis. Instead she refers to this Clark theory.

Q. Is the Clark theory consistent with the Cal Fire theory as to how the Witch Fire ignited?

A. No, it is completely different. As I explained above, Cal Fire determined that a fault on TL 637 on October 21, 2007 led to arcing of the lines, which created hot particles that landed in the grassy fuels in the fire origin area, igniting the fire that was then spread by the wind. The fault was caused by conductors contacting one another, which is a type of phase-to-phase contact. Mr. Stannik has adopted this Cal Fire theory.[57] As I indicated above, SDG&E has no reason to dispute Cal Fire's theory that the Witch Fire ignited as a result of phase-to-phase contact.

Q. Has Mr. Clark's theory previously been investigated?

[57] Stannik Testimony, pp. 6-7.

A. Yes. I have attached a report prepared by an SDG&E engineer, Gerry Akin,[58] as well as a report prepared by an outside engineer.[59] As these reports show, Mr. Clark's theory is completely invalid. Among other deficiencies, Mr. Clark has misinterpreted GO 95 Rule 56.4 D (3)(a); photographs he used to attempt to support his theory as to where the ignition occurred were from an area that was burned days after the Witch Fire ignited; what he claims are black burn marks from arcing are, in some cases paint markings; other alleged black arcing marks he points to are on plastic, and arcing only occurs between two metal objects; and TL 637 experienced no phase-to-ground faults on the day of the Witch Fire.

SDG&E met with the CPSD to discuss Mr. Clark's theory in 2008, while the Witch/Rice OIIs were ongoing, and CPSD never supported or adopted it.

Q. Does this conclude your testimony?

A. Yes.

[58] See Appendix 16.

[59] See Appendix 17.

Appendix 1

ALI YARI QUALIFICATIONS

I graduated with a Bachelor of Science degree in Electrical Engineering from the University of Texas in El Paso in 1979. I worked as a plant electrical engineer for Lone Star Industries from 1979 to 1980 and was responsible for electrical projects in System Protection and Control. I obtained a Master of Science degree in Electrical Engineering with emphasis in Power Systems from the University of Texas at El Paso in 1983.

I joined the Transmission Planning Section of SDG&E in 1982. I had lead responsibility for development of SDG&E's electric transmission capital budget projects to expand the transmission system within the SDG&E service territory, evaluation of transmission interconnection capabilities to accommodate off system resources, and the conducting of system analysis. From 1999 to 2004, I served as SDG&E's Manager of Grid Operations Services, where I was responsible for technical evaluation to identify day-to-day and seasonal transfer capability limits and mitigating measures for the safe and reliable operation of SDG&E's transmission system. I managed development and coordination of operating procedures to minimize congestion. I also managed SDG&E's existing transmission contract administration responsibilities and was responsible for overseeing all Reliability Must Run contract, settlements, technical studies and FERC filings. From 2004 to 2012, I served as the Director of SDG&E's Electric Transmission and Distribution Engineering Department, responsible for design and engineering of distribution, substation, and transmission projects, including the engineering, equipment, and structural design involved in the development of Transmission and Substation Engineering projects.

From 2012 to the present, I have been serving as the Director of SDG&E's Electric Grid Operations Department. In that capacity, I am responsible for the reliable operation of SDG&E's

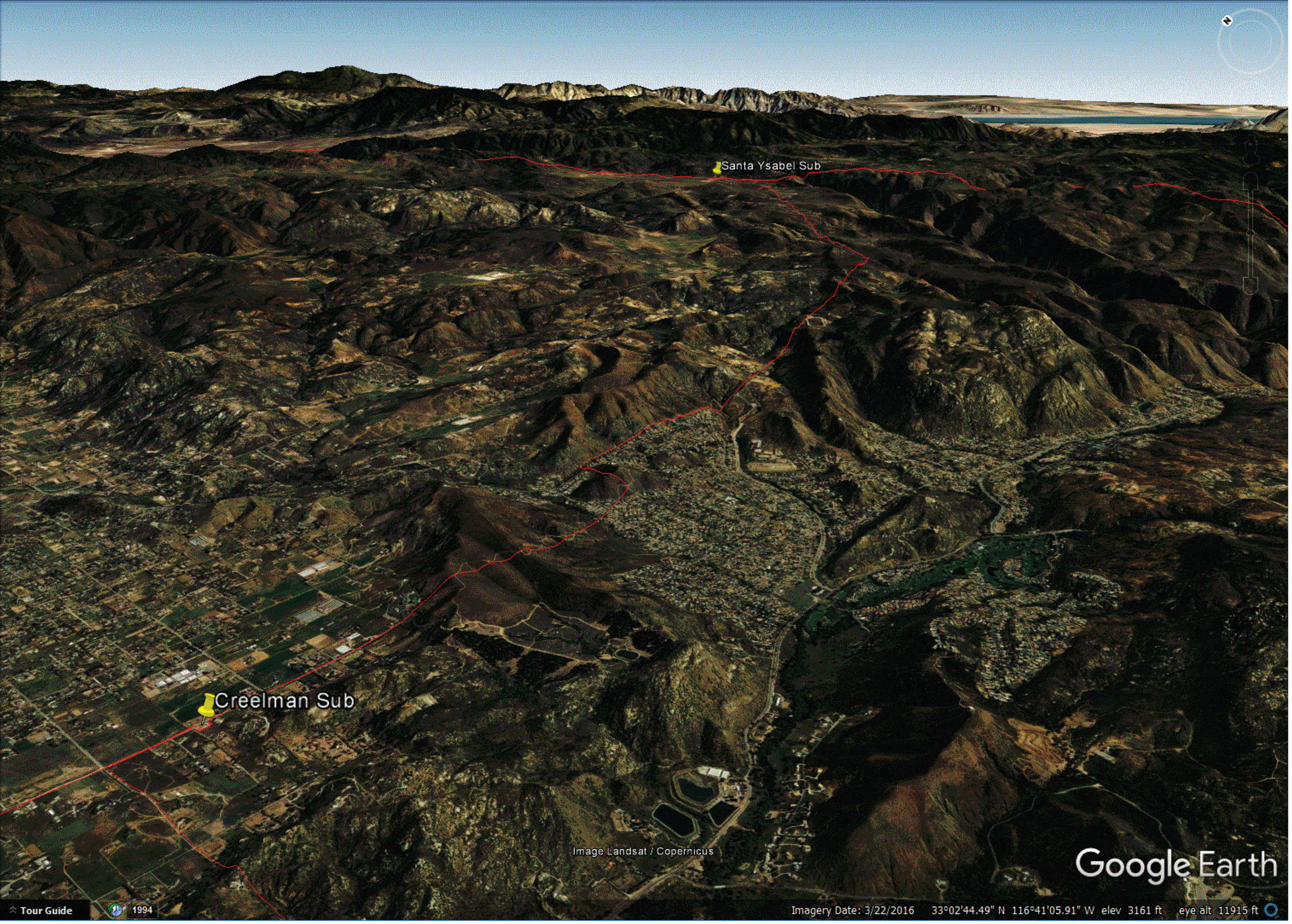
electric transmission grid, which supplies electricity to the distribution system that ultimately provides electricity to SDG&E's customers.

From 1986 to 1998, on a part-time basis, I taught at the senior level at San Diego State University in the Electrical and Computer Engineering department in system network modeling and power flow analysis, system stability, and system protection. Since 2000, I have been teaching a Professional Engineering preparation class at SDG&E in the Electrical Engineering discipline.

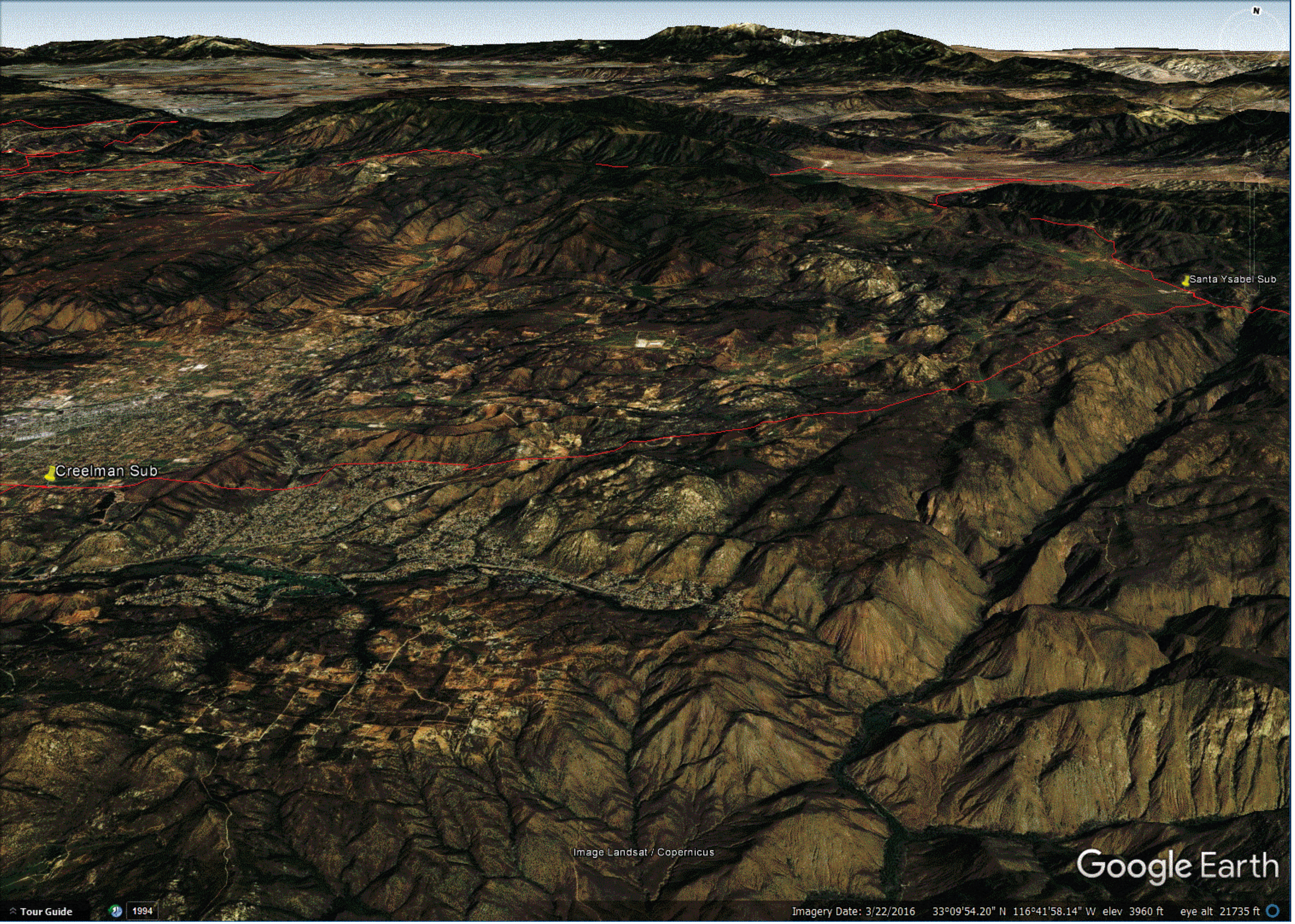
I have served as the Chairman of the Western Electricity Coordinating Committee (WECC) Pacific and Southwest Transfer work group, and I have represented SDG&E on the WECC Planning and Operations Committees. I am a registered Professional Engineer in the State of California.

I have previously testified before the California Public Utilities Commission.

Appendix 2


Santa Ysabel Sub
Creelman Sub
Image Landsat / Copernicus
Google Earth
Tour Guide
1994
Imagery Date: 3/22/2016 33°02'44.49" N 116°41'05.91" W elev 3161 ft eye alt 11915 ft


Creelman Sub
Santa Ysabel Sub
Image Landsat / Copernicus
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Data LDEO-Columbia, NSF, NOAA
Google Earth
Tour Guide
1994
Imagery Date: 3/22/2016 33°03'39.21" N 116°45'54.45" W elev 2537 ft eye alt 13525 ft


N
Santa Ysabel Sub
Creelman Sub
Image Landsat / Copernicus
Google Earth
Tour Guide
1994
Imagery Date: 3/22/2016 33°09'54.20" N 116°41'58.14" W elev 3960 ft eye alt 21735 ft

Appendix 3

GRID CONTROL'S
DAILY INFORMATION SHEET & LOGS
SUNDAY, OCTOBER 21, 2007

	Yesterday's Actual	Today's Forecast	Weekly/Record Loads (Sun-Sat):		
Load:	2804	2910	High:	3040	10/19/07
Time:	1900	1900	Low:	1680	10/14/07
Temp:	68/81	81/86	YTD High:	4636	09/03/07
	SD/ EC	SD/ EC	Prev. Year High:	4502	07/22/06
			Record High:	4636	09/03/07

UNITS	*	ON	RMR	COMMENTS	≈Ramp Rates MW/min	Limit
SY1	*	X	X	G-206 unit	4	149
SY2	*	X	X	G-206 unit	4	150
SY3	*	X	X	On for SO #2 outage	3	171
SY4	*	X	X	On for Zonal Flow	4.5	222
EA1	*	X	X	On for SO #2 outage	1	107
EA2	*	X	X	On for SO #2 outage	2	104
EA3	*	X	X	TL23006 outage	2	110
EA4	*	X	X	G-206 unit	6.3 = 63-290; 2	300
EA5	*	X	X	On for SO3	6.4 = 68-305; 2.7	330
SO2				ETR 10/25		1150
SO3				ETR: 11/9		1150
NIQF		X				35
NSQF		X				48
NTCQF		X				22
GLMQF		X				50
MMC Chula Vista						50
BD1 Coral						50
BD2 Coral						50
BD3 Calpk	*					50
MMC Escondido						50
ES2 Calpk	*					50
EC1 Calpk	*					50
MM CT 1	*					50
PEN CT 1x1	*				1x1= 15	1x1 = 159-261
PEN CT 2x1	*				2x1= 30	2x1 = 325-541
					>451= 4	

Combustion Turbines available unless indicated below.

UNIT	COMMENTS

- Units with asterisk have RA/RMR contracts for 2007. All GT's have RMR contracts for 2007

LONG TERM SITUATIONS

(please add date to be removed on notes):

Transmission Restrictions: [ ] Red Flag, [ ] Restrict Maint [ ], Stage I [ ], Stage II [ ]
Homeland Security Level: Elevated
Personnel:

- Sick:
- Vacation:
- Training: Allred, Skurski, Stahl, Pukahi, Lagunero
- General Notes:

- Real-time Interruption Report will be put out between hours of 0001 and 1800 (Mon. - Fri.) as per SOP rpt6010, use "BPOR" (bpor@semprautilities.com) distribution list. Notify Melby (via E-Mail) regarding outage 5 min. or less, see sop rpt6025.
- EA GEN RTU when it fails, contact EA SS and have them get their Engineer to go to the "RIGGS" cabinet to reset SDG&E RTU.
- 3/3/05 – Call the Director during daytime hours for the loss of major system equipment (i.e. SWPL, SO Bus etc) in general and specifically equipment that causes import restrictions on our system, and also contact DLM as normal.
- 7/12/06 – According to Anita Hoyos & the CAISO shift supervisor it is mandatory not to exceed the import limit for more than 20 minutes. It is not an SDGE stability issue but a regional stability issue for the subsequent loss of SWPL. If for the loss of PEN, the import is exceeded and generation does not respond within 20 minutes shedding load is the correct response.
- A meeting was held on 11/3/06 concerning faxing ESO's to Substation Construction and Maintenance so that their personnel would have a written copy of the switching to be performed in advance. In attendance were Frank Johnson, Matthew Santos, Rudy Montemayor, Malcolm Hebert and Dave Melby. All agreed on the following:
  - Switching actions requiring 2 or 3 steps (i.e. switching for a breaker Clearance) are not required to be faxed. Only lengthy switching such as for buses or any other order determined by the TSO would be faxed.
  - The 1 shift TSO, after checking the ESO correct, will decide the need to fax the ESO.
  - KY personnel may request that the ESO for a particular job be faxed to Kearny in advance of the crew leaving for the job. (Frank to convey this with his personnel.)
  - Outage Coordination will take initial action to determine if an order warrants being faxed to KY or not. (A "check box" indicating this may be added to the LER template at a later date.)
  - Any changes found necessary after the ESO has been faxed will be conveyed to the switch person before the ESO switching is read by the TSO to the switch person.
  - The ESO switching steps, including changes if any, will be read word-for-word to the switch person.
  - The switch person will repeat word-for-word the switching steps back to the TSO to confirm all necessary steps have been identified.
  - Procedures OCP7505 - "Request for Authorizations Bulk Power" and SWI706 - "Electric Switching Orders" will be revised to incorporate these changes.

- On 12/27/06, TL6931 relayed at Crestwood during a storm (twice), during the time that TL629 was open at CW and the 69kV bypass switch outside of Crestwood was closed. After investigation, it was determined that TL6931 relayed with phase overcurrent targets due to load flow from the Kumeyaay wind farm, since essentially all of the wind farm output flowed from TL6946 onto TL6931 (less the very small local load at CW). The TL6931 overcurrent setting is 160 amps (around 19 Mw), and is set this low to provide fault sensitivity while still being well above the load current at Boulevard.
  - To prevent a future trip on load flow from the wind farm when TL629 CB is switched out, we are investigating the development of a second relay setting group for TL6931 that could be enabled with a toggle switch.
  - **Until this implementation, it is important to note that the Kumeyaay wind farm output must be limited when TL629 is switched out at CW. I would suggest a maximum output of 12 Mw or less (the limit would depend on how much margin is provided below the 19 Mw level).**
  - If there are any questions, please contact Phil Patton or me. Thanks - Bill Cook
- Along with the lower load levels, we are seeing higher voltages at Crestwood, even more when the generation from the wind is picking up. We are working with the KU owners to try to reach a solution suitable to both parties. For now,

please exhaust our options to try to keep the voltage within criteria, but **do not call the Kumeyaay desk**. Please feel free to call either Robin or my self if you want to discuss possible actions. **If you run out of options to lower the voltage, please discuss it with me before you make any phone call to Kumeyaay.** Thank you all. Anita Hoyos

Per Jim Brix request if a 230kV CB low air alarm comes in at Talega, please contact Brix and not a ETS. This note should remain on the turnover list until the problem has been resolved

6/1/07 EA phone problems: The ring down phone to EA ¾ has a ground fault in it and is ringing throughout the night as a result they are turning down the ringer on the malfunctioning phone. The other rooms are not normally manned. This phone is not their normal phone but a special ring down from SDGE. Their normal number, 760-268-4062 is fully functional and should get through to the operator.

10/08/07 CAISO reports the Eldorado - Moenkopi series caps will be OOS until Nov. 9th. This will cause an increase in the flow on the SWPL.

We have completed our testing of SCADA Recloser's and have confirmed that all SCADA Recloser's are working correctly from EMS. We can turn off a Recloser's via SCADA and it will turn off the recloser / amber light off at the sub and vice-versus. **Effective 08/11/07: it is not necessary to send ETS to subs with SCADA Reclosing to confirm reclosing is out of service before opening line switches.**

- Dr Lu reports when you copy a real time case into a study case the first thing you must do is; go to the contants page in the study case you are in and change the FLAT START from "ON" to "OFF". Then run your study case and it should work correctly.
  - **Real Time Case**: to fix the Voltage problem that shows up with the 230kV being higher (About 2 kV) than the RTU reads and the 500kV being lower (about 15kV or more) than the RTU reads. See the sheet taped on the desk. Go to "BC Transformer Summary Page" and go to the "Participate in Tap/Phase Estimation" and change it from "Yes" to **"NO" , you must do this for each 500/230 kV transformer (ML Bank 80 & 81, IV Bank 80 & 81,** then run your case, it should fix the problem.

- Peak system value calculations are currently being revamped. Please contact Randy Schimka or Malcolm Hebert with any questions. OSS, if anyone asks you about this, please direct them to Randy or myself. For purposes of the OSS log, please use the half hour values to locate the peak. Per Malcolm Hebert

- Temporary Emergency Ratings:
  - TL 13811 / ES BK 50 - new **73 MVA (6-hr rating,** assumes 3% loss of life), withdraw the existing 73 MVA (15-min rating)
  - TL 13813 / MI BK 51 - new **267 MVA (4-hr rating**, per ANSI C37.0101B)
  - TL 13836 - **new 217 MVA (4-hr rating), 226 MVA (10 min rating)**
  - TL 651 - new **100 MVA (24-hr rating)**
  - TL 6917 - new **90 MVA (24-hr rating)**
  - TL 691C - new **86 MVA (9-hr rating)**
  - These ratings are effective immediately and will be re-evaluated after the summer operating season.
  - Robin Manuguid, SDG&E - Grid Operations

Shift Turn-over Items:

Daily program switching changes	PNA conclusions	Homeland Security issues
Forecasted Peak Load and Time	Transmission limitations	Previous noteworthy events
Interchanges limits (SDGE, ML, SOS, etc.)	RMR Status	Weather related issues
Real-time Interruptions/Equipment outages	Reactive issues	Scheduled tours and visitors
CAISO Alerts, Warnings, etc.	Red Flag Fire Warnings	Procedural changes
Grid topography changes (Substation, Equipment)	Alarm processing	Communication issues
EMS/SCADA/RTU issues	Relay protection / RAS limitations	SWPL scheduling status
Personnel issues (schedules, training, vacation, OT, sick)		

OSS DAILY LOG

0001	**Eckhardt**
0630	**Minton**
0645	Tailgate with TSO
0646	Place J Soriano on exception sheet 6min OT
0910	Steve gave updated forecast HE19 2970
0853	69kV TL 637 opened/closed at ST
0952	Mortier reports fire 3mi north of SWPL Harris ranch rd and petrero..
1008	Zaragoza reports fires in Los Angeles could affect midway Vincent lines..
1012	Ken Fossell called notified of fire on SWPL and what generation we have on.
1015	Notified A Hoyas of fire on SWPL fire has jumped hwy 94 and is heading SW road 188 port of entry. Also notified M Santos adv of same.
1025	Adv TSO of getting voltage up on high side and ISO to get generation up 70 percent of capacity.
1034	Notified TMC duty sup for wash crews and adv of SWPL fire
1040	Called Duty TCM report fire to him for wash crews if needed.
1114	Wash crews en-route per K. Smith
1122	69kV TL 637 tripped and reclosed at both terminals sent out real time
1130	Per S Peterson via D Melby cancel move to BUCC, notified Schimka, Hebert and Santos
1135	Begin calling for add' TSO and per D Melby, req we bring in M. Santos (notified) and S Peterson will be coming in also and Anita Hoyas
1207	Went through call out list Kindig is coming in early..
1212	Notified ISO per CDF need to de-energize 50001 to drop retardant to keep fire from burning insulators on twr requiring crew to replace. Notified S. Peterson
1215	50001 de-energized, notified ISO (Lee) B. Ball, CDF (on-site)
1217	KY PB's coming on line per EA
1234	Notified ISO derate on APS and IID of de-rates 90 for IID and 77 APS.
1310	Report of fire in Santa Ysabel area.
1314	B. Ball reports Hotta enroute to ST sub to investigate fire.
1356	B. Crouch fire coordinator 619-2478434 at ST sub will
1416	Per P. Garcia, if insulators are not charred SWPL can be reenergized 1700.
1527	69kV TL 637 opened and reclosers removed from service. Clearance will be issured and ETA on line will 6am 10/22
1608	Due to adverse weather conditions and fires across the Southern CA Region.The California ISO is declaring Southern CA Region Restricted Maintenance Operations for the period from 10/22/2007 00:01 through 10/22/2007 23:59.Restricted Maintenance Operations, as detailed in ISO Operating Procedure E-509, will be in effect. Market participants are cautioned to avoid actions, which may jeopardize generator and/or transmission availability.
1801	Blast pager sent out Called ISO to cancel TL 698 and 625 job also TL 634 (in fire corridor), all other jobs should be placed on hold ..
1710	Called Avery and Peterson advise TL 637 ETR now 8am still no ETR on SWPL
1745	Adv D Melby status of system and wants to be kept inform via his cell phone.
1752	Anita reports after peak, Lower SY first and keep EA up because of bay temperature differential .

1816 Notified Jim Avery regarding 20 structures that have retardant on pwr lines. Crews may not get to them until tomorrow morning. In addition, any movement on SWPL his phone number is 619-540-7499

1817 Notifed ISO regarding same,spoke to Andy Gilfoy..

1818 TL 629 tripped and reclose.

1824 Notified Hal Mortier reports Brian Crouch is on the Ramona Fire his phone # 7291431

1830 Eckhardt

1900 Soriano in to assist

1900 Moshier, SCE reports fire in the area of Viejo sub in Orange county. Two lines run from Viejo to SONGS. If those lines trip, we would lose a significant amount of path 44 imports.

1910 Moshier reports his fire coordinator feels the fire should not threaten the lines.

1915 All peakers started. Gilfoy reports they are online for Ca. system conditions, not for SD conditions.

1940 Brett Ball reports they will not have access to the 50001 towers until the morning. He does not think the line will be available to test until late in the day.

2010 CP reports a revised forecast of 3330MWs for tomorrow.

2020 CAISO shift manager called and insisted that a new TNA be issued for tomorrow. Called Anita and left message

2040 Anita called back and will contact ISO engineers to resolve.

2200 Robin Manuguid called. He is working on TNA for tomorrow. He would like to be contacted for any issues overnight instead of Anita.

2221 TL 626 tripped at Descanso, Santa Ysabel RTU is down, so no info on that end. I OK'd testing the line at Descanso to reenergize Boulder Creek. Line tested good.

2316 TL 626 tripped open at Descanso again.

Appendix 4

SDGE A Sempra Energy company

ELECTRIC SWITCHING ORDER

TYPE AUTH. TRBL

CIRCUIT 69KV TL 637 ST - CRE

ORDER ISSUED TO	SW CBN	STA	TIME ORDERED	OPERATION	VOLTAGE, LINE IDENTIFICATION, APPARATUS, SPECIAL INSTRUCTIONS	TIME COMP.
EMS		ST	0853	RPTS	STA Alarm / TL 637 CB Open	
↓		↓	↓	↓	Reclose	
		CRE			STA Alarm / TL 637 CB Open	
↓		↓	↓	↓	Reclose	
S. Long			0902	Sent	T-men to subs via PSLS	
Vecchio		ST	1000	RPTS	Reset STA Alarm, Rpts TT, odom	
↓		↓	↓	↓	Reads / High Wind in Area	
Higbee		CRE	↓	RPTS	Reset STA Alarm and Rpts TT odom	
EMS		ST	1122	Rpts	STA Alarm / TL 637 CB Trip/Reclose	
↓		CRE	↓	↓	STA Alarm / TL 637 CB Trip/Reclose	
S. Long			1200	Sent	T-men to subs via PSLS	
Vecchio		ST	1223	Rpts	2 Trips / Reset STA Alarm Rpts TT, odom	
Higbee		CRE	1256	↓	2 Trips / Reset STA Alarm Rpts TT, odom	
↓		↓	↓	↓	JO load 31, 32, 31	
Kent Smith			1259	Rpts	He will get a patrol ASAP on TL 637	
B. Ball			1359	Rec	Turn off Reclosing on TL 637 Due to Fire	
↓			↓	↓		

REMARKS

WRITTEN BY	LINE/EQUIP. REQUEST	JOB NO.	LINE/EQUIP. IN TROUBLE	TIME OFF
CHECKED BY	TRUCK NO.	LOGGED BY	PRINTS/RECORDS CORRECTED BY	DATE 10 21 07
ORDERED BY	JOB FOREMAN	HOLD OUT LOG COMPLETED BY	INTERRUPTION POSTED BY	PAGE ____ OF ____

SDGE0208705

Sempra Energy company

ELECTRIC SWITCHING ORDER

6 TYPE AUTH. TROUBLE
CIRCUIT 69KV TL637 ST-CRE

ORDER ISSUED TO	INV. CBN	STA.	TIME ORDERED	OPERATION	VOLTAGE, LINE IDENTIFICATION, APPARATUS, SPECIAL INSTRUCTIONS	TIME COMP.
S. Long		ST	1401	Turn Off	69KV TL 637 Reclose CNTR Point	
		CRE				
Kinsling ↓		CRE ↓	1405 ↓	Seat ↓	T-man to CRE S/S to turn off Reclosing per B Ball	
EMS (Late Entry) ↓		ST	1223	Rpts	STA Alarm / TL637 CB Trip / Reclose	
		CRE	↓	↓	STA Alarm / TL637 CB Trip / Reclose	
EMS			1450	Rpts	ST RTU FAILED	
D. Kinsling ↓			1518 ↓	Rpts ↓	RTS responded to ST to STANDBY due to RTU Down via PSMS NOTIFIED STA 4-Nicole	
EMS ↓		CRE ↓	1525 ↓	Rpts ↓	69KV TL 637 OPEN & CLOSE 69KV STATION Alm No RTU @ ST	
D. Kinsling ↓			1527 ↓	Called ↓	J. HOTTA who requested TL 637 OPENED FOR SAFETY I INFORMED JOHN OF NO RTU AT ST	
D. Kinsling		CRE	1527	OPEN	69KV TL 637 CB.	
D. Kinsling			1530	Called	R. Nacco Hea & CONFIRMED 69KV TL 637 OPEN	

REMARKS

WRITTEN BY SL	LINE/EQUIP. REQUEST	JOB NO.	LINE/EQUIP. IN TROUBLE	TIME OFF
CHECKED BY	TRUCK NO.	LOGGED BY	PRINTS/RECORDS CORRECTED BY	DATE 10 21 07
NOTIFIED BY	JOB FOREMAN	HOLD OUT LOG COMPLETED BY	INTERRUPTION POSTED BY	PAGE ____ OF ____

SDGE0208706

A Sempra Energy company

ELECTRIC SWITCHING ORDER

TYPE AUTH. TROUBLE

CIRCUIT 69KV TL637-ST-CAF

ORDER ISSUED TO	SW CBK	STA.	TIME ORDERED	OPERATION	VOLTAGE, LINE IDENTIFICATION, APPARATUS, SPECIAL INSTRUCTIONS	TIME COMP.
J. HOTTA			1610	RQSTS	TL637 SWITCHED OUT TO REPAIR	
↓			↓	↓	CONDUCTORS THAT GOT TOGETHER	
D. KINOW			1613	NOTO	OSS MINTON	
10-22-07						
J. HOTTA			0458	READS	CANNOT ACCESS TL637	
↓			↓	↓	TIELINE WILL REMAIN	
↓			↓	↓	OOS UNTIL PM ON MONDAY	

REMARKS

WRITTEN BY DLK	LINE/EQUIP. REQUEST	JOB NO.	LINE/EQUIP. IN TROUBLE	TIME OFF
CHECKED BY	TRUCK NO.	LOGGED BY	PRINTS/RECORDS CORRECTED BY	DATE 10-21-0
ORDERED BY N/	JOB FOREMAN	HOLD OUT LOG COMPLETED BY	INTERRUPTION POSTED BY	PAGE ____ OF ____

SDGE0208707

SDGE
A Sempra Energy company

ELECTRIC SWITCHING ORDER

START TIME: TROUBLE
AUTHORIZATION: CLEARANCE
EQUIPMENT: CRE - ST TL637

ORDER ISSUED TO	SWI CEN	STA	TIME ORDERED	OPERATION	VOLTAGE, LINE IDENTIFICATION, APPARATUS, SPECIAL INSTRUCTIONS	TIME COMPLETED
				NOTIFY	(MINTON) OSS	
DLK	M	CRE	1643	CHECK	69KV STATION NORMAL	
				CHECK OPEN	69KV TL 637 CB	1643
D. Rea			1644	CHECK OPEN	69KV TL 637 CB	
				OPEN	69KV TL 637 LINE DISC L & T HN 1363 -07MC	1650
				NOTE ST RTU OUT OF SERVICE		
	M	ST		CHECK	69KV STATION NORMAL	
				OPEN	69KV TL ~~637~~ CB	
R. Necochea			1651	CHECK	69KV STATION NORMAL	
				CHECK OPEN	69KV TL 637 CB	
				OPEN	69KV TL 637 LINE DISC L & T HN 1363 -07MC	1659

Remarks:

WRITTEN BY:	FOREMAN:	FOREMAN:	LINE/EQUIP IN TROUBLE:	TIME OFF:	ISO TIME:
DLK	HOTTA			10/22/2007 @06	
CHECKED BY:	TRUCK #:	TRUCK #:	PRINTS CORRECTED BY:	DATE:	
				10/ 21 /07	
SWITCHED BY:	PHONE / PAGER	PHONE / PAGER	INTERRUPTION POSTED BY:		
	742-3710			Page 1 of 3	

SDGE
Sempra Energy company

ELECTRIC SWITCHING ORDER

START TIME: TROUBLE
AUTHORIZATION: CLEARANCE
EQUIPMENT: CRE - ST TL637

ORDER ISSUED TO	SWI CEN	STA	TIME ORDERED	OPERA-TION	VOLTAGE, LINE IDENTIFICATION, APPARATUS, SPECIAL INSTRUCTIONS	TIME COMPLETED
→					CLEARANCE TO (HOTTA) ON 69KV TL 637 BETWEEN	
					CREELMAN AND SANTA YSABEL, THE TIE LINE IS NOT	
					GROUNDED, DISCS ARE OPEN AND TAGGED ON HN 1363 -07MC	1707
					(HOTTA) RELEASES CLEARANCE ON 69KV TL 637	
					AND HN 1363 -07MC, REPORTING ALL PERSONAL SHORTS	
					AND GROUNDS HAVE BEEN REMOVED. THE TIE LINE IS READY	
					FOR SERVICE.	2211
					MARCH/08 – PER MGS, HN1363 RELEASED ON 10/22/07 1-28-09 TJC	

REMARKS:
REPAIR CONDUCTORS

WRITTEN BY:	FOREMAN:	FOREMAN:	LINE/EQUIP IN TROUBLE:	TIME OFF: / ISO BACK TIME:
JL	HOTTA			0800 10/22/2007 @0600
CHECKED BY:	TRUCK #:	TRUCK #:	PRINTS CORRECTED BY:	DATE:
				10/24 /07
ORDERED BY:	PHONE / PAGER	PHONE / PAGER	INTERRUPTION POSTED BY:	
JL	743-3710			PAGE 2 OF 3

SDGE0208709

Appendix 5

TRANSCRIPT OF STATION M CALL

October 21, 2007 (9:58-10:00 am)

Audio File: SDGE0209283_STM_jcampbel_datarequest_10-21-2009_175

Grid Control, Sean.

Hey Sean, how are you doing Ray Necochea.

Hey Ray.

Santa Ysabel had a trip on 637.

Yeah.

It looks like it's Zone 1 phase.

That’s on the SEL 121?

Yes, F.

F?

F as in Frank, yes.

Zone 1 phase.

And it just tripped one time, 1525 to 1526.

15 . . .

Go ahead and set everything normal?

25 to 1526.

We didn't get anything on the SEL 167?

It doesn't look it my friend. It looks . . . oh, I lied. Zone, hang on, zone 1 phase.

Zone 1 phase, also on the 167 –

Yeah.

And the 121 are the exact same one.

Yeah. It looks like it's carrying load, it looks like 31, 32, 31.

What was that one more time?

31, 32, 31 amps. 31, 32, 31.

Got it.

All right. I'll reset everything, and make it normal.

All right.

You got anybody out there looking for this thing or what?

No.

Just gonna . . .

It was only one end there so . . .

Okay.

Did you happen to take a look out there at the breaker?

Yes, it's only blowing about a gazillion miles an hour out here. I can't even see outside without my eyes watering.

Really?

It's blowing about 50 miles an hour here today –

All right. If you could take a look, I appreciate if you give me a call back on it.

Yeah. There's no way to patrol this without a helicopter.

Okay.

It'd take days.

Okay.

All I can check is along the main roads here but then it takes off up into the mountains and stuff over Rancho.

I was just, actually I was just looking at the breaker, hold on one second all right?

Appendix 6

SCO'S RUN NG LOG **GRID CON ROL CENTER**

Sunday-October-21-2007

0001-0600	Soriano
0600-1400	LONG
0943	Hal M Reports Fire 2.5 mi N of Switch @ Potrero; 94; Harris Ranch
~~1200~~ 1141	Fire Services asked us to open TL 50001 to Drop Fire retardant
1215	Opened 50001 ML-TJ
1359	B.Ball Request turn off reclosing on TL 637 / sent T-man to CRE
1409	P. Garcia Gave an update on 50001 Return @ 1700 Est
1900	Soriano in to assist with fires & outages.
1400-2200	D. Kindig
2200-2400	D. Kindig, P. Allred
	SHIFT TURNOVER

EXHIBIT
depobook.com
283-3499
Minton 4-11-14

SDGE0246749

Appendix 7

TRANSCRIPT OF STATION M CALL

October 21, 2007 (11:42-11:53 am)

Audio File: SDGE0208929_STM_jcampbel_datarequest_10-21-2007_196

Control Sean.

Hi Sean this is Sonia trouble.

Hi Sonia.

Hey we just a call from CAL FIRE and I guess they want to throw some retardant because we got that fire on Portrero that's just jumped the 94 south.

Right.

And its threatening our 500 KV line.

Right.

Harris ranch road and 94.

Right.

And they're calling us to see if we can shut that down while they throw retardant.

Can you hold on one second?

Sure.

(Long) Jim. Can you take dispatch they're asking – hold on one second.

Sure.

And who is it?

This is California Forestry fire. They got their planes running right now with retardant and they're trying to stop this fire from moving more south. And they can't throw it with the line being on.

(Long) Standby.

Okay.

(Sonia) You guys have trouble men in contact right?

(Long) Yes.

(Off Speaker – Sonia) *Standby Rick. Looks like the fire they call it out [2:48]. Did he shut if off?*

(Sonia) Grid Did you mean something else?

(Long) Yeah hold on please.

Okay I'm still here.

(Long off speaker) Dispatch Jim. Dispatch they want us – they talked to the Fire. Hold on one second all right. Sonia says the California forestry wants to drop fire retardant, they want us to open the line in order to do that. Yes.

(Long to Sonia) Are you seeing the dispatch?

<u>New Call (@5:41)</u>
Grid control this is Sean can you hold?

Sure. I'm waiting for Jim Sean.

Who is this?

Danny Zaragoza.

Danny hold on please.

(Silence until 10:20)

Grid control Sean.

Is this Sean?

Yes.

How are you doing this is Bret.

Hey Bret.

Hey is Jim still there?

Yeah can you hold on?

Yeah.

New Call (@10:34)

Grid control Sean.

Hey Sean Dave you're kind of busy I thought I'd call you instead of the other guy. Got a moment?

Yeah go ahead.

Are all the lines back in other than what they want to take out, do you have anything switched out?

Nothing is out. Everything is in.

Okay.

And he got a hold of someone to help you out?

Not yet.

Can you help him on the calls or are you too busy?

I'm kind of getting stuff going but I can help him with everything. We'll work it out.

Yeah I mean just get someone in there to help you, not that you need it right now. But if this thing turns sour. You will certainly be happy to have someone in there.

Absolutely we're working on it.

I know but he's also doing a lot of other stuff so that's why we talked.

Yeah I'll do what I can to help get somebody.

Appreciate that. So Matthew should be in there soon I hear.

Okay.

All right.

All right, bye.

Appendix 8

TRANSCRIPT OF STATION M CALL

October 21, 2007 (12:33-12:35 pm)

Audio File: SDGE0208971_STM_jcampbel_datarequest_10-21-2007_1C0

(Sean Long) Grid Control, this is Sean.

(Ray Necochea) Hey Sean, this is Ray, I got to go check on a pole, it's leaning into the roadway. I am at Santa. Ysabel. Can you just write this down real quick so I can get out of here. 637.

Standby. Yeah, go ahead. You are at Santa. Ysabel, right?

Yeah, Santa. Ysabel. It tripped twice. This time and this last time, it went from 1526 to 1528. Same – the target was different, it didn't get both of them this time. It only got it on the – the – hang on one second, let me get it real quick. We only got a zone one phase on the 121 relay.

121 phase. And that was on both trips.

You are correct, same thing.

And the other SEL didn't pick up –

No it didn't pick a thing up – still zone one.

Zone one. So we had two trips.

Which way is zone one, like close to here?

Yeah, that should be close to the sub.

Yeah, so you guys can't get that – the transmission patrol guys out?

We –

Like – whoever does that –

We haven't got them out yet.

You have to get them out here man because this thing is going to be going in and out.

Right.

All right, let me go check on this other deal. If you need me go ahead, just call me, leave me a message on my phone if I don't – we will get you – we will get it.

That’s the same – the number that I have for you 760 765 2361

No, that’s the substation. I mean it's my cell number 98 – it's 619 9876185

9876185

Yeah.

All right.

And it's 619

Okay right.

Thank you.

Bye.

Appendix 9

SDG&E	DEPARTMENT	DIVISION	DOCUMENT SECURITY
	ELECTRIC	GRID OPERATIONS	INTERNAL
	SUBJECT		EFFECTIVE DATE
	TRANSMISSION MONITORING AND CONTROL		5/19/06
TITLE			DOCUMENT NUMBER
TRANSMISSION LINE FAULT PATROL			**TMC1100**

Yellow highlight indicates change since last publication.

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1. Purpose 1
2. References 1
3. Definitions 1
4. General 2
5. Fault Patrol Policy 2
6. Call-Out Procedures 2
7. PC-Based Fault-Locating 3

1. PURPOSE

This Standard Operating Procedure outlines the transmission line fault patrolling policy, PC-based fault-locating policy, and call-out procedures for Transmission Construction and Maintenance and System Protection personnel.

2. REFERENCES

SDG&E Weekly On-Duty List

3. DEFINITIONS

3.1. CAISO – California Independent System Operator

3.2. DFR – Digital Fault Recorder

3.3. OSS – Operations Shift Supervisor

3.4. SDG&E – San Diego Gas & Electric Company

3.5. SEL – Schweitzer Engineering Labs

3.6. TCM – Transmission Construction and Maintenance

4. GENERAL

SDG&E overhead transmission facilities are inspected by TCM section Transmission Patrollers. The Patrollers make routine and emergency patrols of the transmission system to inspect for damaged equipment and potential hazards.

Line patrols are done by land vehicles or helicopters. In each case, the more expeditious method is used. When structures are inaccessible to land vehicles due to geographic or environmental reasons, they are inspected from the air.

For safety reasons, patrols from the air are restricted to daylight hours and to reasonably calm weather conditions. In most cases, vehicular patrols can be conducted at night or during inclement weather.

Additional fault location assistance may be available through System Protection Engineering's Short Circuit PC based program as described in the PC-Based Fault-Locating section of this SOP.

5. FAULT PATROL POLICY

Fault patrols take priority over routine patrols.

5.1. A fault patrol is initiated when a tieline has tripped and will not successfully re-close and the cause for tripping is unknown.

5.1.1. Request a Transmission Patroller immediately using the procedures listed in the Call-out Procedures section of this SOP.

5.1.2. Request that field personnel report to the appropriate substations to prepare for isolation of faulted equipment.

5.2. A fault patrol is initiated when a tieline has tripped and has successfully reclosed and the cause for the tripping is unknown.

5.2.1. Request a Transmission Patroller by using the procedures listed in the Call-out Procedures section of this SOP.

5.2.2. The actual patrol of the line will be at the discretion of the TCM section.

5.3. Line patrol requests for unusual circumstances will be at the sole discretion of the OSS and/or the CAISO.

6. CALL-OUT PROCEDURES

6.1. During normal working hours (0630 to 1500 Monday - Friday), the request for a Patroller should be made through the TCM Scheduling Assistant or through one of the management staff listed below:

Name	Office	Pager #	Truck #	Cell Phone #
Scheduling Assistant - TCM	858-541-5975	---	---	---
Deno Dimuzio	858-541-5959	888-838-7541	4147	619-823-5708
Bill Hewitt	858-541-5953	888-369-2368	4620	619-743-1214
Bret Ball	858-541-5958	888-267-2017	4404	619-987-0945

6.2. Outside normal working hours notify the TCM On-Duty Supervisor (all other hours including holidays) refer to the SDG&E Weekly On-Duty List.

6.3. In the event the On-Duty cannot be contacted and Transmission Patroller is required, the request is to be made to Service Dispatch. Service Dispatch is to be instructed to call-out a Patroller and notify the TCM On-Duty.

7. PC-BASED FAULT-LOCATING

System Protection Engineering's Short Circuit PC based program could be useful in determining the location of underground or overhead faults that show little visible evidence at the point of failure. System Protection can simulate faults at various points on the faulted line and compare the computer derived fault current at various locations on the system with DFR or SEL relay obtained fault currents. With this information they can determine the approximate location of the actual fault.

The following system protection personnel can be contacted to perform a study to analyze the simulated and actual fault conditions.

Name	Office #	Cell Phone #	Home #
Bill Cook	858-654-1189	619-572-2808	619-435-8201
Gerry Rosselli	858-654-1209	---	619-561-8528
Phil Patton	858-654-1202	---	619-223-7837
Tariq Rahman	858-636-5547	858-232-0298	858-538-9120

DOCUMENT OWNERSHIP

Ownership	Name	Date
AUTHORED BY:		
REVIEWED BY: System Protection Engineering Manager	Bill Cook	5/19/06
REVIEWED BY: Transmission Construction & Maintenance Manager	Deno Dimuzio	5/19/06
REVIEWED BY: Team Lead Technical Support	Malcolm Hebert	5/19/06
APPROVED BY: Chief Operations Manager	David Melby	5/19/06
ISSUED BY: Business Analyst, Grid Operations	Roxanne Lee	5/19/06
ISSUE DATES: 11/20/03, 2/8/05, 1/3/06, 5/19/06		

Appendix 10

TRANSCRIPT OF CALL

October 21, 2007 (13:33 pm)

File: SDGE0031350_SC_41875801_21102007_123312_21102007_123340_32_8714864

(Flynn) Hello.

Trouble (can you hold for a moment) Who is this?

This is Henry Flynn

Hello.

Henry Flynn from TCM.

Okay.

You guys you called me.

You're a patrolman?

Yes madam.

One moment they want you to go to TL 637 but I will give Annette.

Okay thank you.

Okay hold on (Annette that's the patrol man…)

Appendix 11

TRANSCRIPT OF STATION M CALL

October 21, 2007 (13:39-12:40 pm)

Audio File: SDGE0208976_STM_jcampbel_datarequest_10-21-2007_1C5

Grid control Sean.

Hey Sean this is Henry Flynn from TCM.

How is it going Henry?

Hey what tie line tripped out? Do you know?

Yeah that's 637.

Is it locked out?

No.

Okay do you know who is the on duty supervisor for TCM?

Hold on.

Kent Smith.

Yeah oh Kent Smith is.

Yes.

All right. So I guess we're going to go ahead and patrol it. I don't think we can fly.

Okay I'm who is this again?

This is Henry Flynn.

Okay Henry. So I'll call Ken Smith and see what's happening okay.

Okay thank you very much appreciate it.

Thank you bye.

Appendix 12

SUPERIOR COURT OF THE STATE OF CALIFORNIA
COUNTY OF SAN DIEGO - CENTRAL DIVISION

IN RE: 2007 WILDFIRE INDIVIDUAL LITIGATION - WITCH CREEK/ GUEJITO FIRES	No. 2008-00093080 CU-NP-CTL
This Document Relates to: RODNEY COMPANY, N.V., et al., Plaintiffs, vs. SAN DIEGO GAS AND ELECTRIC COMPANY, et al., Defendants.	No. 37-2008-00081779 CU-PO-CTL

VIDEOTAPED DEPOSITION OF HENRY FLYNN
San Diego, California
Monday, September 15, 2014
Volume I

Reported by:
Claire A. Wanner
CSR No. 12965, RPR, CRR
Job No. 1924174

Pages 1 to 193

Q Like a physical obstruction that you would just remove or something like that? 10:36:11

MR. BOOZELL: It's vague and ambiguous.

THE WITNESS: Sometimes.

BY MS. BLAIN: 10:36:18

Q When you conduct a routine land patrol, are you by yourself?

A Yes.

Q How long does it take?

MR. BOOZELL: It's vague and ambiguous. 10:36:39

THE WITNESS: You need to expand on that question somewhat.

BY MS. BLAIN:

Q So, I guess, from when you leave the substation to when you arrive at the second substation, on average, how long does it take to conduct that full patrol? 10:36:48

MR. BOOZELL: Vague and ambiguous and incomplete hypothetical.

THE WITNESS: It varies on the transmission line to the next transmission line. 10:37:01

BY MS. BLAIN:

Q How often have you conducted a routine land patrol on TL 637?

A I don't remember.

Q Do you know what substations that that tie line 10:37:12

goes between? 10:37:17

A Yes.

Q What substations are those?

A Creelman and Santa Ysabel.

Q Is that the only tie line between those two substations? 10:37:25

A There's other transmission lines that go into both of those substations.

Q All right. So do you have an estimate, as you sit here today, if you were to go out, after we're done, to conduct a patrol from Creelman to Santa Ysabel on TL 637 -- do you know approximately how long that would take? 10:37:46

A No.

Q Would it take more than an hour? 10:37:57

A Yes.

Q Would it take -- would that be your entire shift?

A Yes.

Q And what is a routine aerial patrol? 10:38:08

A We use the helicopter to fly the line, the transmission line.

Q And what are you looking for during that process?

A You're looking for things that were abnormal. 10:38:26

A Yes. 11:13:34

Q Do you recall the 2007 wildfires?

A Yes.

Q Did you have to evacuate?

A I don't recall. 11:13:43

Q What was your work schedule in October of 2007? How many hours per week would you work?

A I don't recall.

Q Would you work 40 hours a week?

A It would be at least 40. 11:14:00

Q Would you work more than 40?

A Sometimes.

Q Were you paid hourly or salaried?

A Hourly.

Q So sometimes you would work overtime on occasion? 11:14:19

A Yes.

Q Would you work five consecutive days a week?

MR. BOOZELL: It's vague and ambiguous.

THE WITNESS: Sometimes. 11:14:29

BY MS. BLAIN:

Q Who would set your schedule?

A Bill Hewitt.

Q Bill Hewitt?

Would your schedule change every week? 11:14:42

MR. BOOZELL: It's vague and ambiguous. 11:14:45

THE WITNESS: It could.

BY MS. BLAIN:

Q How -- how far in advance would you get your work schedule? 11:14:55

A It -- it varied.

Q When you got your schedule, would it be for one week or would it be for two weeks or, for example, four weeks?

A Could be all those. 11:15:10

Q And that would be Mr. Hewitt's determination?

A Yes.

Q When you were -- did you generally have two days off in a row?

MR. BOOZELL: It's vague and ambiguous. 11:15:22

THE WITNESS: Sometimes.

BY MS. BLAIN:

Q But that wasn't unusual?

A No.

Q Would you typically work five days a week or, for example, 40 hours within four days? 11:15:35

A It would be in five days.

Q And you'd generally work an eight-hour day, and you might do overtime?

A Yes. 11:15:53

MR. BOOZELL: Same objection. 11:23:33

THE WITNESS: No.

BY MS. BLAIN:

Q And you don't remember who it was that called you? 11:23:39

A No.

Q Okay. But -- so at some point you learned there was a fault on TL 637, and you called Mr. Amerson?

A Yes.

Q And why did you call Mr. Amerson? 11:23:47

A He was to help me with the fault.

Q To help you do what?

A Patrol it.

Q The person who notified you that there had been a fault, did they also request that you patrol the fault? 11:24:03

A I don't recall.

Q Okay. Do you recall about what time of day you called Mr. Amerson?

A No. 11:24:17

Q But you were able to get him on the phone?

A Yes.

Q And what was the entirety of your conversation with him that you -- that you recall?

A There was a fire and that we were -- the plan 11:24:30

had changed. 11:24:39

Q What was the plan?

A To patrol it.

Q What had -- what had been the plan that changed? 11:24:45

A I don't understand your question.

Q So you told him that the plan had changed. What was the original plan?

A To patrol it.

Q So originally you were going to go out and patrol the line? 11:24:53

A (Witness nods head.)

Q The plan changed. How did it change?

A There was a fire, and we were to go to Ramona, of what I recall. 11:25:03

Q How did that differ from the plan to patrol the line?

A He would start at one side, and I -- at one end, and I would start at the other.

Q One of you would start at Santa Ysabel, one of you would start at Creelman, and then you would meet somewhere in the middle? 11:25:18

A Yes.

Q Where -- which substation were you going to go to? 11:25:31

A I don't recall. 11:25:35

Q At that point in time that you learned that there was the fault, did you know that there was a wildfire on at least a portion of TL 637?

MR. BOOZELL: It's vague and ambiguous. 11:25:48

THE WITNESS: No.

BY MS. BLAIN:

Q Did you perform that fault patrol?

A No.

Q And why not? 11:25:55

A There was a fire.

Q You -- and you learned that there was a fire from Mr. Hotta?

A Yes.

Q But you called Mr. Amerson after you spoke to 11:26:04 Mr. Hotta --

A Yes.

Q -- to tell Mr. Amerson that you're not going to do the fault patrol anymore?

A Yes. 11:26:14

Q You don't remember who told you that there had been a fault?

A No.

Q Do you remember approximately what time of day you were told that there had been a fault? 11:26:34

A No. 11:26:36

Q Do you know if it was in the morning?

A No.

Q Who made the plan -- after you learned that there had been a fault, who's plan was it for you and 11:26:49 Mr. Amerson to go out and conduct a fault patrol?

MR. BOOZELL: That calls for speculation. Lacks foundation. Vague and ambiguous.

THE WITNESS: Can you repeat that?

BY MS. BLAIN: 11:27:01

Q Yeah.

So -- so you learned that there's a fault?

A Yes.

Q You don't know exactly when, but then you have a plan that you and Mr. Amerson are going to go out to 11:27:06 conduct the fault patrol. Who's idea was that?

MR. BOOZELL: Same objections.

THE WITNESS: I don't recall.

BY MS. BLAIN:

Q Is that something that you had decided on your 11:27:15 own?

MR. BOOZELL: Same objections. Incomplete hypothetical.

THE WITNESS: No.

Appendix 13

ORA
Office of Ratepayer Advocates
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102
Tel: 415-703-1584
http://ora.ca.gov

Date: November 16, 2016

Christopher M. Lyons
Senior Regulatory Counsel
San Diego Gas & Electric Company
8330 Century Park Court, CP32D
San Diego, CA 92123

Re: Data Request SDG&E-ORA-A.15-09-010-02 – Wildfire Expense Memorandum Account

Dear Chris,

The Office of Ratepayer Advocates ("ORA") is in receipt of *SDG&E-ORA-A.15-09-010-02* ("DR-2"), submitted on October 28, 2016. Pursuant to our emails, exchanged October 28-31, 2016, SDG&E has agreed to extend the data requests objection and response date to November 16, 2016.

Further, pursuant to a meet and confer held on November 2, 2016, between SDG&E and ORA, regarding ORA's October 28 Responses to *SDG&E-ORA-A.15-09-010-01* ("DR-1"), submitted by SDG&E on October 7, 2016, the following resolution to that discovery dispute has been reached:

1) SDG&E withdraws its requests for information associated with communications with intervenors.
2) SDG&E withdraws DR #8, which is subsumed within DR #9 ("prior professional experience" is subsumed within "qualifications to testify").
3) ORA will provide a supplemental response to DR #9 which, counting subparts, is a total of at least 12 separate inquiries.
4) ORA will provide a supplemental response to DR #16. At the meet and confer, SDG&E agreed to clarify and narrow this request to seek research done regarding the policies and practices of other utilities. Pursuant to that discussion, ORA shall

respond to the following inquiry: Did Mr. Stannik study or research other utilities' policies or practices regarding subject matters with respect to which he offered opinions?

This document constitutes ORA's responses to DR-2, and supplemental responses to DR-1 (#8 and #16).

I. General Objections

Regarding the "Definitions" and "Instructions" of DR-2, in ORA's responses herein, please note that ORA has applied the common sense meaning of words to the questions asked by SDG&E. SDG&E's broad and expansive definitions and instructions, while understandable in a civil litigation context, do not comport with standard discovery on ORA in Commission proceedings. According to *Discovery: Custom and Practice Guidelines*, "[t]he conduct of the Commission's business is facilitated by the smooth exchange of information among the parties. Thus, as a general principle, discovery should proceed in a cooperative and efficient manner …"[1] In this regard, it would not be smooth and efficient for ORA to try to glean SDG&E's meaning for a given data request by applying all of the overlapping and expansive definitions and instructions.

Further, ORA objects generally to the extent that any definition, instruction or data request seeks:

- Information, documents, or communications, that are privileged in any way, such as attorney-client privilege and/or work product doctrine.

- Information, documents, or communications, that are under the custody and/or control of entities other than ORA.

- Information, documents, or communications, that are outside the scope of this proceeding.

[1] *Discovery: Custom and Practice Guidelines*, dated: 2/25/2010, at 1.

ORA
Office of Ratepayer Advocates
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102
Tel: 415-703-1584
http://ora.ca.gov

- Information, documents, or communications that are unduly burdensome and oppressive to produce.

- Information, documents, or communications that are not relevant to this proceeding, or not reasonably calculated to lead to the discovery of admissible evidence pursuant to Rule 10.1 of the Commission's Rules of Practice and Procedure ("Rules").

ORA requests that any privileged documents that are inadvertently produced during discovery be returned by the recipient (who should not keep a copy). Any such inadvertent production is not a waiver of any privilege.

ORA
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II. General Objections to Definitions

> *4. "Documents" means any written, drawn, recorded, transcribed, filed, or graphic matter, including scientific or researchers' notebooks, raw data, calculations, information stored in computers, computer programs, surveys, tests and their results, however produced or reproduced. With respect to any document that is not exactly identical to another document for any reason, including but not limited to marginal notations, deletions, or redrafts, or rewrites, separate documents should be provided.*

ORA objects to SDG&E's 67-word definition for "documents" (SDG&E Definition #4, at 2) on the grounds that it is overbroad, vague and ambiguous. ORA further objects to the definition of "documents" to the extent that it captures documents privileged under the attorney client privilege and/or work product doctrine. ORA also objects to this definition on the grounds that it is unduly burdensome and oppressive in the context of discovery of ORA's records. While ORA has the statutory right to seek out extensive categories of data from regulated utilities, it does not have the same resources that SDG&E has to locate data.

> *6. "Identify," "identity," or "identification," when used in relation to "person" or "persons," means to state the full name and present or last known address of such person or persons and, if a natural person, his or her present or last known job title, the name and address of his or her present or last known employer, and the nature of the relationship or association of such person to you.*

ORA objects to SDG&E's Definition #6 on the ground that it seeks irrelevant information. ORA further objects to this definition regarding identifying persons to the extent that it captures information privileged under the attorney client privilege and/or

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work product doctrine. ORA also objects to this definition on the grounds that it seeks addresses of persons. This violates the Information Practices Act of 1975.

> *7. "Identify," "identity," or "identification," when used in relation to "document" or "documents," means to state the date, subject matter, name(s) of person(s) that wrote, signed, initialed, dictated, or otherwise participated in the creation of same, the name(s) of the addressee(s) (if any), and the name(s) and address(es) (if any) of each person or persons who have possession, custody, or control of said document or documents.*

ORA objects to SDG&E's Definition #7, at 2-3, on the grounds that it seeks irrelevant information and is overbroad. ORA further objects to this definition regarding identifying documents to the extent that it captures information privileged under the attorney client privilege and/or work product doctrine. ORA also objects to this definition on the grounds that it seeks addresses of persons. This violates the Information Practices Act of 1975. ORA also objects to this definition on the grounds that it is unduly burdensome and oppressive to the extent that it seeks information beyond the custody and control of ORA, such as "each person or persons who have possession, custody, or control of said document or documents"

> *8. "Identify" when used in relation to a "communication" means to identify the participants in each communication and, if such communication is not contained in a document, the date, place, and content of such communication.*

ORA objects to SDG&E's Definition #8, at 3, on the ground that it seeks irrelevant information. ORA further objects to this definition regarding identifying communications to the extent that it captures information privileged under the attorney client privilege and/or work product doctrine. ORA also objects to this definition on the grounds that it is unduly burdensome and oppressive to the extent that it seeks information beyond the custody and control of ORA.

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> *13. "You," "your," or "ORA" means the Office of Ratepayer Advocates and its affiliates, agents, servants, representatives, and employees or any other person or entity acting or purporting to act on their behalf, including without limitation any witness retained by them. In that regard, each and every data request contained herein is directed at you.*

ORA objects to SDG&E's Definition #13, at 3, on the grounds that it seeks irrelevant information and is overbroad. ORA further objects to this definition regarding ORA to the extent that it captures information privileged under the attorney client privilege and/or work product doctrine. ORA also objects to this definition on the grounds that it is unduly burdensome and oppressive to the extent that it seeks information beyond the custody and control of ORA, such as "any other person or entity acting or purporting to act on their behalf."

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III. General Objections to Instructions

1. Please supplement and amend your responses if new responsive information becomes available.

ORA objects to providing discovery on a continuous basis to SDG&E on the grounds that it would be unduly burdensome and oppressive to do so, given SDG&E's numerous inquiries.

However, ORA reserves its right to supplement data responses. To the extent that ORA discovers documents that could have previously been provided to SDG&E, but were not, ORA reserves the right to supplement its responses. ORA further reserves the right to modify or withdraw any information provided based on discovered data.

6. Any document withheld from production on the grounds of a privilege is to be specifically identified by author(s), addressee(s), length, and date, with a brief description of the subject matter or nature of the document, and a statement of the privilege asserted.

ORA objects to this instruction to generate a privilege log on the grounds that such production would be unduly burdensome and oppressive. ORA is not aware of any CPUC decision that has required ORA staff to generate such a privilege log. Further, it would be particularly burdensome for ORA to generate a privilege log due to the broad instructions and definitions provided by SDG&E.

14. Please provide all documents in their native format, together with all metadata.

ORA objects to this instruction on the grounds that, in the context of discovery on ORA in Commission proceedings, it is not reasonably calculated to lead to the discovery of admissible evidence pursuant to Rule 10.1 and is overbroad. This instruction is also

vague and ambiguous as, considering the data requests issued in DR-2, it is not clear to ORA what specific metadata is being sought by SDG&E.

Further, ORA is not aware of any CPUC decision that has required ORA staff to provide a utility with metadata. Beyond that, ORA objects to this data request to the extent that it seeks: information privileged under the attorney client privilege and/or work product doctrine, confidential information protected under deliberative process doctrine, information protected under the Information Practices Act of 1975, or any information that the CPUC (and ORA) has a statutory duty to keep confidential.

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IV. Specific Objections and Responses to DR-2

Request 1. Please identify the dates and times that Mr. Stannik visited the sites where Cal Fire concluded that the ignitions of the Witch, Rice and Guejito Fires occurred.

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 1.

Mr. Stannik has not visited the ignition sites of the Witch, Rice, or Guejito Fires.

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Request 2. Please provide all communications between ORA and the following individuals with respect to this proceeding:

a. Fadi Daye
b. Steve Intably

Objection: ORA incorporates the General Objections indicated in Sections I-III, and specifically objects to this data request on the grounds that it seeks information protected under the attorney-client privilege and/or work product doctrine. Communications between counsel and SED staff are protected under the attorney-client privilege and work product doctrine. Further, ORA objects to this data request on the grounds that it is unduly burdensome and oppressive, given SDG&E's broad definition of "ORA" at Definition #13. Incorporating these objections, ORA provides the following response.

Response 2.

ORA is not aware any communications between ORA staff and either of the above-listed people in this proceeding.

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Request 3. Are there any statements, conclusions or analyses in the testimony of any of the following witnesses in this proceeding with which Mr. Stannik disagrees? If so, please identify the statement, conclusion or analysis and describe the basis for Mr. Stannik's disagreement.

a. Dr. Joseph Mitchell (MGRA)
b. Dr. Matthew Rahn (POC)
c. Ms. Jennifer Betts (SDCAN)
d. Dr. Alexander Gershunov (UCAN)
e. Dr. Janice Coen (UCAN)

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the grounds that it is overbroad, seeks irrelevant information, and seeks to require ORA to commit resources beyond its mandate under Public Utilities Code § 309.5, ORA provides the following response.

Response 3.

ORA has not completed its review of the testimony of Mussey Grade Road Alliance ("MGRA"), Protect Our Communities Foundation ("POC"), San Diego Consumers' Action Network ("SDCAN"), nor Utility Consumers' Action Network ("UCAN") at this time.

ORA's focus in this proceeding has been on the Application of SDG&E and not on the testimony filed by other intervenors in this proceeding. To that extent, ORA does not have any statements, conclusions or analyses regarding the testimony of Dr. Joseph Mitchell (MGRA), Dr. Matthew Rahn (POC), Ms. Jennifer Betts (SDCAN), Dr. Alexander Gershunov (UCAN), or Dr. Janice Coen (UCAN).

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Request 4. Does Mr. Stannik agree with the theory advanced by Jennifer Betts on behalf of SDCAN that SDG&E's down guy wires caused the ignition of the Witch Fire, and that the "Commission can reliably use this [photographic] evidence to find that such locations were ignition points on TL 637"? (Betts Testimony, p. 11).

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the ground that it seeks to require ORA to commit resources beyond its mandate under Public Utilities Code § 309.5, ORA provides the following response.

Response 4.

ORA has not completed its review of the testimony of San Diego Consumers' Action Network ("SDCAN") at this time.

ORA's focus in this proceeding has been on the Application of SDG&E and not on the testimony filed by other intervenors in this proceeding. To that extent, ORA does not have any statements, conclusions or analyses regarding the testimony of Ms. Jennifer Betts (SDCAN).

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Request 5. What does Mr. Stannik believe were the GO 95 wind loading criteria applicable to TL 637 as of October 21, 2007?

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request to the extent that it seeks information that is publically available and under SDG&E's custody and control, ORA provides the following response.

Response 5.

Mr. Stannik's testimony provided the following citations to the CPUC's public website dedicated to General Order ("GO") 95 and its previous iterations and modifications:

- footnote 75, page 17;
- footnote 90, page 19;
- footnote 104, page 21; and
- footnote 193, page 36

GO 95 Rules 38 and 43, as well as Table 2, provide wind loading criteria applicable to utility infrastructure like TL637.

For reference, ORA provides links below to the two rules and the table listed above.

Rule 38 – Revised May 22, 1990 by Resolution No. SU-5:
http://www.cpuc.ca.gov/gos/GO95/go_95_rule_38.html

Rule 43 – Revised February 5, 2014 by Decision 14-02-015
http://www.cpuc.ca.gov/gos/Resmajor/DesNo14-02-015/DesNo14-02-015-Rule043.htm

Table 2:
http://www.cpuc.ca.gov/gos/Resmajor/DesNo05-01-030/GO95/DesNo05-01-030_go95_rule_38_table2.htm

Historical versions of GOs, including those applicable in 2007, are available on the CPUC website.

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Request 6. Please refer to the following statement by Mr. Stannik: "SDG&E's dispatch and response times to reported trips of TL637 are concerning, unreasonable, and directly led to the ignition of the Witch Fire." See Stannik Testimony, p. 10. Please provide any studies or analyses of utility response times to transmission line faults that Mr. Stannik has prepared or on which he has relied.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the grounds that it is vague and ambiguous, and seeks irrelevant information, ORA provides the following response.

Response 6.

It is unclear what the term "studies or analyses of utility response times" refer to in the context of this question.

Mr. Stannik's analysis of SDG&E's dispatch and response times to reported trips of TL637 and his supporting workpapers and attachments are included in ORA's testimony, for example, in Section III-B of ORA-01 (*"SDG&E's Response to Tripping and Arcing of Transmission Line 637 Was Unreasonable and Directly Led to the Ignition of the Witch Fire"*).

As stated in Mr. Stannik's testimony (page 10, lines 3-15; internal citations omitted):

> *"SDG&E's dispatch and response times to reported trips of TL637 are concerning, unreasonable, and directly led to the ignition of the Witch Fire. For example, after the first trip at 08:53 on October 21, SDG&E troubleman Necochea is* ***dispatched to the Santa Ysabel substation after 12 minutes*** *(at 09:05). However, after the second trip (at 11:22), a request call to dispatch troublemen to both the Santa Ysabel and Creelman substations happens after 34 minutes (11:56), with the actual dispatches happening 5 and 11 minutes after the call (12:01 and 12:07 respectively). The first troubleman was* ***dispatched after 39 minutes; the second after 45 minutes****. The dispatch time for the second trip was* ***almost four times as long as for the first trip that occurred less than three hours before****. Multiple trips of TL637 in a single day should have been a concern to the*

utility, especially since this was a rare event that had occurred only 9 times in the previous 24 years." (emphasis added)

Please also see responses to Question 7 and 8.

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Request 7. With respect to SDG&E's response to the first trip on TL637 on October 21, 2007, please provide Mr. Stannik's opinion as to how fast he believes the troubleman should have been dispatched. Please provide all documents or evidence that support your answer. See Stannik Testimony, page 10.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request to the extent that it seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA, ORA provides the following response.

Response 7.

Generally, SDG&E failed to timely respond to the data it received regarding TL637.

As stated in Mr. Stannik's testimony (page 10, lines 3-15; internal citations omitted):

> *"SDG&E's dispatch and response times to reported trips of TL637 are concerning, unreasonable, and directly led to the ignition of the Witch Fire. For example, after the first trip at 08:53 on October 21, SDG&E troubleman Necochea is* ***dispatched to the Santa Ysabel substation after 12 minutes*** *(at 09:05). However, after the second trip (at 11:22), a request call to dispatch troublemen to both the Santa Ysabel and Creelman substations happens after 34 minutes (11:56), with the actual dispatches happening 5 and 11 minutes after the call (12:01 and 12:07 respectively). The first troubleman was* ***dispatched after 39 minutes; the second after 45 minutes****. The dispatch time for the second trip was* ***almost four times as long as for the first trip that occurred less than three hours before****. Multiple trips of TL637 in a single day should have been a concern to the utility, especially since this was a rare event that had occurred only 9 times in the previous 24 years."* (emphasis added)

Please also see response to question 6.

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Request 8. With respect to SDG&E's response to the second trip on TL637 on October 21, 2007, please provide Mr. Stannik's opinion as to how fast he believes the request call should have been made to dispatch troublemen, and how fast the actual dispatches should have occurred. Please provide all documents or evidence that support your answer. See Stannik Testimony, page 10.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request to the extent that it seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA, ORA provides the following response.

Response 8.

Generally, SDG&E failed to timely respond to the data it received regarding TL637.

Please see responses to Questions 6 and 7.

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Request 9. Based on Mr. Stannik's review of documents and research in preparing his testimony, please explain Mr. Stannik's understanding of the number of phase to phase faults on TL637 that led to or were associated with wildfires prior to October 2007 and support your answer with any estimates or calculations you have performed.

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 9.

Mr. Stannik has not submitted testimony regarding previous wildfires caused TL637 in this proceeding, nor has he undertaken any "estimates or calculations" related to any such wildfires.

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Request 10. Does Mr. Stannik believe that CalFire pilot Venable reported the Witch Fire to SDG&E at 12:29 on October 21, 2007? See Stannik Testimony, page 10. Does he believe that the CalFire pilot that allegedly reported the substantial expansion of the Witch Fire reported that information to SDG&E? Please provide all documents or evidence that support your answer.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the grounds that it misstates testimony and seeks information under SDG&E's custody and control, ORA provides the following response.

Response 10.

Mr. Stannik's testimony states (page 10, lines 16-20; internal citation omitted):

> *"SDG&E's actions after the time of ignition of the Witch Fire demonstrated a similarly slow response. As noted above, the Witch Fire was first reported by CalFire pilot Venable at 12:29, shortly after TL637 tripped for the third time at 12:23. Approximately forty-five minutes later, at 13:15, a different CalFire pilot fighting the fire reported that the Witch Fire expanded substantially."*

Mr. Stannik's testimony does not state that CalFire pilot Venable reported the Witch Fire to SDG&E at 12:29 on October 21, 2007. SDG&E should be aware of the date and time when it received this information, as well as the source(s) of this information.

Mr. Stannik's testimony does not state that the CalFire pilot who reported the substantial expansion of the Witch Fire reported that information to SDG&E. SDG&E should be aware of the date and time when it received this information, as well as the source(s) of this information.

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Request 11. Based on Mr. Stannik's review of documents and research in preparing his testimony, please provide his opinion as to when, on October 21, 2007, SDG&E became aware that the Witch Fire had ignited.

Objection: Incorporating the General Objections indicated in Sections I-III, and sspecifically objecting to this data request on the ground that it seeks information under SDG&E's custody and control, ORA provides the following response.

Response 11.

Mr. Stannik's opinion on the timeline of events associated with the Witch Fire (including its ignition) are provided in his written testimony (ORA-01, page 6-17) and supporting timeline (ORA-02, pages 2-6).

Mr. Stannik's testimony in ORA-01 included the following excerpted timeline regarding the Witch Fire and SDG&E's awareness of and response to the Fire's ignition:

Table 01: Excerpted Witch Fire Timeline (October 21, 2007)

	Time	**Description**
A	08:53	Tie Line (TL) 637 faults for the first time
B	09:05	SDG&E troubleman Ray Necochea dispatched to Santa Ysabel substation
C	11:22	TL637 faults for the second time
D	11:56	Call to send troublemen to Santa Ysabel and Creelman substations
E	12:01	SDG&E troubleman Necochea dispatched to Santa Ysabel substation
F	12:07	SDG&E lineman Michael Higbee dispatched to Creelman substation
G	12:19	SDG&E troubleman Ray Necochea reports the third trip of TL637 while on the phone with grid control, says SDG&E is "going to have to get a patrolman out that way"
H	12:23	TL637 faults for the third time
I	12:29	Witch Fire reported by CalFire Air Tanker Pilot Mike Venable

J	12:34	SDG&E troubleman Ray Necochea on site at Santa Ysabel substation, reports on phone that TL637 tripped twice during the last fault and says “ought to get them out here man”
K	13:15	Pilot of CalFire Tanker 82 reported that the Witch fire “blew up”
L	13:59	SDG&E Transmission Construction & Maintenance Manager Bret Ball requests to turn off automatic reclosing on TL637 due to fire
M	15:24	SDG&E Construction Supervisor John Hotta asks line TL 637 to be open
N	15:25	TL637 faults for the fourth time
O	15:27	TL637 reported open at both ends
P	16:43	TL637 opened per electrical switching order document

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Request 12. Please refer to the bulleted time comparisons on page 11 of Mr. Stannik's testimony. Please identify (1) the time at which Mr. Stannik believes that SDG&E should have de-energized TL 637 on October 21, 2007; and (2) the information available prior to that time that would have supported that decision.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request to the extent that it seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA, ORA provides the following response.

Response 12.

Mr. Stannik's opinion on the timeline of events associated with the Witch Fire (including its ignition) are provided in his written testimony (ORA-01, page 6-17) and supporting timeline (ORA-02, pages 2-6).

Please see response to Question 11.

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Request 13. Please identify each and every instance in which "SDG&E's actions ran contrary to its established Red Flag Warning Practices," listing both the action, and the practice to which it ran contrary. See Stannik Testimony, page 15.

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 13.

Mr. Stannik's testimony regarding SDG&E's use of Red Flag Warnings, including its actions related to the Witch, Guejito, and Rice Fires, is provided in ORA-01, pages 45-47. This section of ORA's testimony points to the inaccuracies and misleading descriptions contained within SDG&E's prepared testimony regarding the use of Red Flag Warnings. Additional discussions of Red Flag Warnings and their relationship to the Witch, Guejito, and Rice Fires are available on pages 13-14, 29, and 45 of Mr. Stannik's testimony, as well as in ORA-02 (Supporting Timeline) and ORA-06 (Supporting Attachments, Volume 3). For example, on pages 13-14 of ORA-01, Mr. Stannik stated (internal citations omitted):

> *"SDG&E failed to act on its personnel's recommendations and concerns regarding TL637 despite the fact that the utility had recognized that when a Red Flag Warning was in effect, as it was on October 21, 2007, the risk of fire ignition would be elevated and steps should be taken to minimize this risk. As described in Section V-C below, such self-prescribed measures included prohibitions of or restrictions on tree pruning and removal activities, welding work, and limitations on where vehicles may drive, as well as established written guidelines related to power lines that have repeatedly tripped."*

And (on pages 29-30):

> *"SDG&E and Davey have stated that the post-fire trim of FF1090 was necessary for public safety, related to the future reinstallation of power lines, and related to 'fire at the base of the tree.' SDG&E and Davey have confirmed that, at the time of the exception trim, a Red Flag warning was still in effect, that the remainder of FF1090 appeared healthy, that the remaining branches of FF1090 were pointed*

away from the utility lines, and that the power lines associated with the fire ignition were on the ground and had been de-energized for over 7 hours. SDG&E was unable to provide requested information regarding the reinstallation of the facilities, so it remains unclear whether reinstallation of the lines in question had even been scheduled or planned. Additionally, SDG&E's fire safety procedures included the practice of not performing routine tree trimming when a Red Flag Warning was in effect to minimize fire ignition risk. While this safety procedure could be overruled on a case-by-case basis, it is unclear why SDG&E chose to perform this allegedly 'critical' work when, by its own admission, 'there was existing vegetation in the area that had not burned, and a shift in winds thus could have brought additional fire to that area.'"

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Request 14. Please identify each and every instance in which "SDG&E's actions … ignored the concerns of its personnel," listing the action, the concern that was expressed, and the personnel who expressed the concern. See Stannik Testimony, page 15.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the ground that it seeks information under SDG&E's custody and control, ORA provides the following response.

Response 14.

ORA understands this question to refer to the following portion of Mr. Stannik's testimony (pages 14-15, lines 15-20 and 1-8, respectively; internal citations omitted):

> *"Prior to October 2007, TL637 had tripped an average of two to three times per year since 1983. Since outage records began in 1983, two trips or more per day had occurred only twice (in October 1994 and March 2003) and three trips or more per day only once (March 2003). Notably, the description of the 6 trips on March 29, 2003 was listed as "high winds in area/guy wire contact." However, between 1983 and 2007, the median time between trips on TL637 was well over one month (42 days), with an average time nearly three times this much. And yet, as described above, SDG&E's concern about three trips within four hours was demonstrably minimal, even given plentiful generation and lower-than-projected load and the cautions given by SDG&E's personnel as discussed above. SDG&E's actions ran contrary to its established Red Flag Warning practices and ignored the concerns of its personnel, who later clearly stated that the conductors of TL637 came into contact with each other and caused the Witch Fire."*

Mr. Stannik's testimony regarding the concerns of SDG&E's personnel is provided in ORA-01, pages 7-15, ORA-02, pages 2-6, and various supporting attachments in ORA exhibits ORA-04, ORA-05, and ORA-06. For example, on pages 11-12 of ORA-01, Mr. Stannik stated (internal citations omitted):

> *"SDG&E's slow response to concerns about tripping was notable in that field personnel specifically and repeatedly expressed concern about the repeated trips and their association with the ignition of the fire, both before and after the time of ignition.*

When calling SDG&E Grid Control Center after the first trip of TL637, an SDG&E troubleman asks whether there was 'anyone out there looking for [the cause of the trip],' to which the operator responded with a simple 'No. '

When the same troubleman at the Santa Ysabel substation called SDG&E grid control again at 12:19, the grid control operator does not appear to be aware of the troubleman's location and says he is 'super-busy with the [transmission line] 500; can you stand by?, 'referring to the fire threat to SDG&E's 500 kilovolt (KV) Southwest Power Link. Only seconds later (on the same call), the troubleman reports a third trip of TL637 while on the phone with grid control, saying "Woah! It just tripped again… you're gonna have to get a patrolman out that way." However, the operator responds with only 'Yes sir 'before asking him to 'please stand by.'

In a third call at 12:34 (after the Witch Fire is reported), the SDG&E troubleman at the Santa Ysabel substation calls grid control to request permission to deal with another issue. The troubleman further reports the nature of the trips on TL637, the fact that the line tripped twice, and again requests that SDG&E 'get the transmission patrol guys out,' saying 'you gotta get them out here man, because this thing's gonna be going in and out. 'However, despite the previous trips, which by this time had ignited the Witch Fire at least 5 minutes before, the nature of the trips, the fact that the line is still energized, the troubleman's assessment that the line would continue to trip, and the troubleman's repeated request for transmission patrol personnel, his request is met only with 'Right.'"

Please also see response to Question 13.

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Request 15. Please provide Mr. Stannik's explanation for how the SDG&E conductor and Cox's lashing wire came into contact with one another in connection with the ignition of the Guejito Fire. Please provide all documents that support your answer.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the grounds that it seeks information under SDG&E's custody and control, and seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA, ORA provides the following response.

Response 15.

Mr. Stannik's testimony regarding the ignition of the Guejito Fire is provided in ORA-01, pages 17-21, as well as various supporting attachments in ORA exhibits ORA-04, ORA-05, and ORA-06.

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Request 16. Please provide the basis, including all evidence or citations to CPUC decisions that support the following interpretation of GO 95: "When the wires in question are owned by two different parties, it is reasonable that maintaining clearance between them is the joint responsibility of both parties." (Stannik Testimony, page 21).

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request to the extent that it seeks a legal conclusion, ORA provides the following response.

Response 16.

ORA understands this question to refer to the following portion of Mr. Stannik's testimony (pages 21, lines 4-17; internal citations omitted):

> *"SDG&E's statement that 'Proper inspection and maintenance of those facilities is the responsibility of the telecommunications companies' is incomplete and errs in assuming that compliance with Rule 38 of General Order 95 is the responsibility of only one party. Rule 38 of General Order 95 states 'The minimum vertical, horizontal or radial clearances of wires from other wires shall not be less than the values given in Table 2…' Both Rule 38 and Table 2 do not specify which party or owner must maintain the necessary clearances between conductors and communication wires, only that clearances must be maintained. When the wires in question are owned by two different parties, it is reasonable that maintaining clearance between them is the joint responsibility of both of those parties. SDG&E acknowledged its responsibility to comply with GO 95 in previous testimony, stating 'Consistent with General Order 165, Line Checkers focus on the General Order 95 compliance of SDG&E's facilities.'"*

Per Rule 38, SDG&E had a duty to protect public safety by maintaining the required clearances.

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Request 17. Please also provide the basis, including all evidence or citations to any CPUC decision or rule in place prior to October 21, 2007 that indicates that electric utilities are required to inspect communication infrastructure provider facilities and explain what electric utilities were required to do if they found a GO 95 violation related to the communication infrastructure provider facilities.

Objection: ORA incorporates the General Objections indicated in Sections I-III, and specifically objects to this data request to the extent that it seeks a legal conclusion, and on the ground that it seeks information under SDG&E's custody and control. ORA further objects to this data request on the ground that it seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA. ORA also objects to this data request on the grounds that it is overbroad, vague and ambiguous. Incorporating these objections, ORA provides the following response.

Response 17.

ORA has not stated in testimony that "electric utilities are required to inspect communication infrastructure provider facilities" nor has it submitted testimony in this proceeding regarding "what electric utilities were required to do if they found a GO 95 violation related to the communication infrastructure provider facilities."

The text and requirements of General Order ("GO") 95 are available on the CPUC's GO 95 webpage at the following URL:

http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html

ORA's testimony regarding SDG&E's GO 95 violations in relation to communications infrastructure provider facilities and the Guejito Fire is available in ORA-01, pages 17-21.

SDG&E is also required to promote public safety pursuant to Public Utilities Code § 451.

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Request 18. With respect to Mr. Stannik's testimony regarding the Rice Fire, please explain the basis for Mr. Stannik's contention that the trimming of Tree FF1090 prior to October 21, 2007 would have avoided the ignition of the Rice Fire. Please provide all documents or evidence that support this contention.

Objection: Incorporating the General Objections indicated in Sections I-III, and sspecifically objecting to this data request on the grounds that it seeks information under SDG&E's custody and control, and seeks to shift the burden of proving whether SDG&E acted reasonably or not to ORA, ORA provides the following response.

Response 18.

Conducting the required trim would have increased the distance between the power lines and the sycamore tree. (See Mr. Stannik's testimony at pages 22-28).

Further, as stated in Mr. Stannik's testimony (pages 22-23, lines 21-22 and 1-4, respectively; emphasis added):

> *"CPSD investigated the Rice Fire in 2007 – 2009 and found that 'on October 22, 2007, **a sycamore tree limb broke and fell** on San Diego Gas and Electric's (SDG&E) 12 kV overhead conductors between SDG&E poles 213072 and 112340, causing the conductors to break and fall to the ground.' The **sycamore tree in question is assigned the identifier 'FF1090' in SDG&E's Vegetation Management System (VMS)**."*

And (page 22, lines 8-14):

> *In his report on the Rice Fire, CalFire Captain Matthew Gilbert, the investigating officer, stated that he 'eliminated all other causes for the Rice Fire, **determining it to be a power line caused fire**' and noted that he 'located downed power lines in each Specific Origin Area.' **Captain Gilbert also 'observed arcing and spackling on the lines near each Specific Origin Area**, which is indicative of the lines being*

*energized' and stated '**SDG&E records indicate the lines were energized when the fire occurred**.'"*

The above-cited sections of testimony cite to the CalFire Report regarding the Rice Fire, CPSD's Investigation Report of the Rice Fire, and SDG&E response to ORA data request ORA-03, Question 5, which are available on pages 869 of ORA-06, 9 of ORA-05, and , and 18 of ORA-06 (Supporting Attachments), respectively.

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Request 19. Did Mr. Stannik review the entirety of SDG&E's "Vegetation Management Program Tree Pre-Inspection Procedures," dated May 2007 and attached to Mr. Akau's Direct Testimony in this proceeding as Appendix 3? If Mr. Stannik only reviewed selected portions, please identify the portions or pages he did not review and explain why he omitted those portions or pages.

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 19.

Mr. Stannik reviewed the entirety of SDG&E's May 2007 Vegetation Management Program Tree Pre-Inspection Procedures manual.

Mr. Stannik's testimony cited to the Vegetation manual three times in footnotes 115, 127, and 130, which referred to pages 23, 17, and 6, respectively, of the manual.

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Request 20. Please refer to the following testimony of Mr. Stannik: "The relatively low data correlation (r-squared) value of Mr. Vanderburg's comparison (around 0.7, on a scale from 0 to 1) means that accurate predictions of precise values cannot be made using this dataset." (Stannik Testimony, pages 43-44). Please identify what data correlation value Mr. Stannik would consider to be "relatively high" and what he considers the cutoff between "relatively low" and "relatively high" to be.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the grounds that it is overbroad, vague and ambiguous, ORA provides the following response.

Response 20.

The relative value, importance, or strength of a data correlation value (r or r-squared) and what defines a "relatively high" or "relatively low" value depends on the situation and on the application of the value, among other factors.

For example, the r value needed to reasonably establish **any** correlation between two variables would likely be different than the r value needed to make precise, accurate, and high-confidence predictions using a model of two variables.

ORA notes that the relative importance and strength of a data correlation value also depend on the quality of the data being used. For example, a dataset of two points could have an extremely high r value, but would likely be of limited use or reliability since the dataset is very small.

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Request 21. Please refer to the 2004 NOAA Tech Memo NWS WR-270 (see Stannik Testimony, page 34). Please identify the locations listed in the memo where wind speeds up to 100 knots were known to occur in San Diego County prior to 2007.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the ground that it seeks information that is under SDG&E's custody and control, ORA provides the following response.

Response 21.

ORA understands this question to refer to the following portion of Mr. Stannik's testimony (pages 34-35, lines 6-24 and 1-2, respectively; internal citations omitted):

> *"However, the conclusion that the 2007 Santa Ana conditions were 'unprecedented' appears to contradict the National Oceanographic and Atmospheric Administration's (NOAA) Technical Memorandum WR-270, co-authored by Mr. Vanderburg. In WR-270, Mr. Vanderburg and his co-authors stated:*
>
> > *'Winds are typically between north and east at a speed of 35 knots through and below passes and canyons with gusts to 50 knots. Stronger Santa Ana Winds can have gusts greater than 60 knots over widespread areas, and gusts greater than 100 knots in favored areas, such as the Santa Ana Canyon.'*
>
> *100 knots is approximately 115 mph. Therefore, even if one were to establish that calculation presented by Mr. Vanderburg in his testimony is correct and valid and one were to establish that the 2007 Santa Ana event was 'strong' as described in WR-270 and one could establish that the locations of the Witch, Guejito, and Rice fire ignitions were 'favored areas,' it seems unlikely that a calculated estimate of 92 mph is truly an 'unprecedented' Santa Ana event. Appendix 4 to Mr. Vanderburg's testimony illustrates as much, showing multiple Santa Ana events since 2007 that are of a similar magnitude as the 2007 event."*

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ORA is unaware of the specific locations referred to by the term “favored areas,” which was not defined in WR-270, other than using the Santa Ana Canyon as an example.

ORA previously provided its understanding of the term “Santa Ana Canyon” and the location of the canyon to SDG&E in response to SDG&E Data Request 01, Question 15.

Please see ORA response to SDG&E Data Request 01, Question 15.

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Request 22. Please explain Mr. Stannik's understanding of whether and for what purpose SDG&E used RAWS data prior to the October 2007 Wildfires. Please provide all documents or evidence that support that understanding.

Objection: Incorporating the General Objections indicated in Sections I-III, and specifically objecting to this data request on the ground that it seeks information that is under SDG&E's custody and control, ORA provides the following response.

Response 22.

It is Mr. Stannik's understanding that SDG&E did use RAWS data prior October 2007. In its response to ORA data request ORA-06, Question 3, SDG&E stated "Any operational measures by SDG&E were based on NWS data or information which may have included RAWS data within its content." In addition, SDG&E's testimony (Vanderburg, page 5, lines 14-18) also confirmed that there were "30 weather stations owned by the federal government and other entities in SDG&E's service territory, many of which provided data that could only be used to understand the weather in their immediate vicinity."

ORA also understands SDG&E's response to ORA data request ORA-06, Question 2 "SDG&E is unaware of any documented complaints, concerns, or doubts concerning the data quality of RAWS prior to 2007" to indicate that such data was available before 2007.

Mr. Stannik's understanding of how and for what purpose SDG&E used RAWS data prior to the October 2007 Wildfires is contained in his testimony, for example, on pages 36-44 of ORA-01.

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V. Supplemental Specific Objections and Responses to DR-1

Request 9. To the extent not explained in your response to Request 8, above, please describe your qualifications to testify in this proceeding with respect to:

a. Utility system protection
b. Patrol or visual inspections (or any other type of inspections) of utility facilities
c. Utility inspection procedures
d. Operating a transmission system
e. Operating a distribution system
f. Maintaining utility facilities
g. Engineering and design of utility facilities
h. Utility vegetation management
i. Meteorology
j. Use of Weather Researching and Forecasting models
k. Fire cause and origin
l. GO 95 and 165 as applied to utility facilities and operations and CIPs

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 9.

As noted in ORA's original response to the above Question, as a Utilities Engineer for the Office of Ratepayer Advocates, Mr. Stannik is qualified to testify on the items identified in Q9 a – l.

In addition, ORA has previously provided Mr. Stannik's witness qualifications in Exhibit ORA-01, as well as provided Mr. Stannik's professional resume to SDG&E in response to SDG&E's first data request in this proceeding.

ORA provides the following supplemental response listing Mr. Stannik's experience in his current position, professional work Mr. Stannik performed in prior positions, relevant educational experience, and additional experience/qualifications related to the subject areas requested:

a. Mr. Stannik has evaluated utility system protection in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); and R. 15-06-009 (Physical Security Rulemaking). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at Complete Solar, HDR Engineering, and the TSB Innovationsagentur Berlin GmbH, as outlined in his resume. In his undergraduate education, Mr. Stannik also successfully completed engineering courses related to utility system protection, including: circuit analysis; circuit design; electricity networks & markets. Mr. Stannik has also examined SDG&E's utility system protection as related to the 2007 wildfires in this proceeding, as described in his testimony in sections III and VII.

b. Mr. Stannik has evaluated patrol or visual inspections (or any other type of inspections) of utility facilities in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 14-12-016 (PSRMA); A. 15-06-013 (Sempra PSEP Phase 2); and A. 16-09-005 (Sempra PSEP Reasonableness Review). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at HDR Engineering and the TSB Innovationsagentur Berlin GmbH, as outlined in his resume. Mr. Stannik has also examined SDG&E's patrol or visual inspections (or any other type of inspections) of utility facilities as they relate to the 2007 wildfires in this proceeding which is described in his testimony in section IV-C.

c. Mr. Stannik has evaluated utility inspection procedures in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 14-12-016 (PSRMA); A. 15-06-013 (Sempra PSEP Phase 2); and A. 16-09-005 (Sempra PSEP Reasonableness Review). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at Complete Solar, HDR Engineering, and the TSB Innovationsagentur Berlin GmbH, which is outlined in his resume. Mr. Stannik has also examined SDG&E's utility inspection procedures as they relate to the 2007 wildfires in this proceeding, which is described in his testimony in sections IV-B and V.

d. ORA understands this question to refer to a utility electric transmission system, and not a natural gas (or any other) transmission system.

   Mr. Stannik has evaluated transmission system operations in the following

CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 09-09-022 (Alberhill/Ivyglen Project); and R. 15-03-010 (San Joaquin Disadvantaged Communities Rulemaking). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at HDR Engineering and the TSB Innovationsagentur Berlin GmbH, as outlined in his resume. In his undergraduate education, Mr. Stannik also successfully completed engineering courses related to the operation of a transmission system, including: circuit analysis; circuit design; electricity networks & markets; science & technology policy; electromagnetics. As part of this proceeding, Mr. Stannik also examined SDG&E's operation of its transmission system as related to the 2007 wildfires, which is described in his testimony in sections III through V and VII.

e. ORA understands this question to refer to a utility electric distribution system, and not a natural gas (or any other) distribution system.

   Mr. Stannik has evaluated operation of a distribution system in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 09-09-022 (Alberhill/Ivyglen Project); and R. 15-03-010 (San Joaquin Disadvantaged Communities Rulemaking). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at Complete Solar, HDR Engineering, and the TSB Innovationsagentur Berlin GmbH, as outlined in his resume. In his undergraduate education, Mr. Stannik also successfully completed engineering courses related to distribution system operations, including: circuit analysis; circuit design; electricity networks & markets; science & technology policy; electromagnetics. Mr. Stannik has also examined SDG&E's distribution system operations as they relate to the 2007 wildfires in this proceeding, which is described in his testimony in sections III through V and VII.

f. Mr. Stannik has evaluated maintenance of utility facilities in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 13-12-012 (PG&E GT&S); A. 14-12-016 (PSRMA); A. 15-09-007 (PacifiCorp Mining Assets); A. 16-09-005 (Sempra PSEP Reasonableness Review); and R. 15-06-009 (Physical Security Rulemaking). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at Complete Solar, HDR Engineering, and the TSB Innovationsagentur Berlin GmbH, as outlined in his

resume. Mr. Stannik also examined SDG&E's maintenance of its facilities as related to the 2007 wildfires in this proceeding which is described in his testimony in sections III through V and VII.

g. Mr. Stannik has evaluated engineering and design of utility facilities in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); A. 15-05-002 (Safety Model Assessment Proceeding); A. 13-12-012 (PG&E GT&S); A. 14-12-016 (PSRMA); A. 09-09-022 (Alberhill/Ivyglen Project); A. 16-09-005 (Sempra PSEP Reasonableness Review); R. 15-06-009 (Physical Security Rulemaking); and A. 13-12-013 (North-South Project). In addition, Mr. Stannik has experience with this subject area from his prior professional experience at Complete Solar, HDR Engineering, and the TSB Innovationsagentur Berlin GmbH, which is outlined in his resume. Mr. Stannik has also examined SDG&E's engineering and design of its utility facilities as it relates to the 2007 wildfires in this proceeding which is described in his testimony in sections III through VII.

h. Mr. Stannik has evaluated utility vegetation management in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case); and A. 15-05-002 (Safety Model Assessment Proceeding). Mr. Stannik has also examined SDG&E's vegetation management as it relates to the 2007 wildfires in this proceeding which is described in his testimony in section V.

i. Mr. Stannik has evaluated meteorology in the following CPUC proceedings: A. 15-05-008 (Liberty Utilities General Rate Case) and A. 15-05-002 (Safety Model Assessment Proceeding). Mr. Stannik has also examined meteorology as it relates to the 2007 wildfires in this proceeding which is described in his testimony in sections III through VI.

j. In the context of this question, ORA understands "Weather Research and Forecasting models" to refer to the specific model and forecasting methodology as described by SDG&E in this proceeding (see for example the Prepared Direct Testimony of Jon A. Peterka) and not any model used to research and forecast weather.

   Mr. Stannik has not evaluated the use of Weather Researching and Forecasting models in his previous work or educational experience. Mr. Stannik did examine the use of Weather Researching and Forecasting models as they relate to the 2007 wildfires in this proceeding which is described in his testimony in

section VI.

k. Mr. Stannik has evaluated fire cause and origin in CPUC proceeding A. 15-05-002 (Safety Model Assessment Proceeding). Mr. Stannik also examined fire cause and origin as it relates to the 2007 wildfires in this proceeding, which is described in his testimony in sections I through VIII.

l. Mr. Stannik has evaluated GO 95 and 165 as applied to utility facilities and operations and CIPs in the following CPUC proceeding: A. 15-05-002 (Safety Model Assessment Proceeding). Mr. Stannik also examined GO 95 and 165 as applied to utility facilities and operations and CIPs as related to the 2007 wildfires in this proceeding which is described in his testimony in this proceeding.

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Request 16. Did Mr. Stannik study or research other utilities' policies or practices regarding subject matters with respect to which he offered opinions?

Objection: Incorporating the General Objections indicated in Sections I-III, ORA provides the following response.

Response 16.

Mr. Stannik's focus in this reasonableness review proceeding is on SDG&E's policies and practices prior to the 2007 wildfires, and not on other utilities' policies, practices, or actions. Accordingly, he did not study or research other utilities' policies or practices but instead focused on examining the reasonableness of SDG&E's actions regarding the 2007 wildfires.

The opinions Mr. Stannik offered in testimony are based on the evidence cited in his testimony and supporting attachments, including public reports, SDG&E's responses to data requests, and prior investigations.

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Sincerely,

/s/ EDWARD MOLDAVSKY

Edward Moldavsky

ORA Staff Counsel
(213) 620-2635

Appendix 14

Index of Station M
Audio Files
for
October 21, 2007

Start Date	Start Time	AM/PM	End Date	End Time	AM/PM	Foldername	Filename	sort order	orig order
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10/21/07	8:43:35	PM	10/21/07	8:43:58	PM	2007_10-21	jcampbel_datarequest_10-21-2007_296	82413	5917
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10/21/07	8:46:24	PM	10/21/07	8:47:05	PM	2007_10-21	jcampbel_datarequest_10-21-2007_298	82415	5919
10/21/07	8:49:14	PM	10/21/07	8:49:24	PM	2007_10-21	jcampbel_datarequest_10-21-2007_299	82416	5920
10/21/07	8:49:19	PM	10/21/07	8:49:27	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29A	82417	5921
10/21/07	8:49:29	PM	10/21/07	8:51:19	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29B	82418	5922
10/21/07	8:49:48	PM	10/21/07	8:52:04	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29C	82419	5923
10/21/07	8:52:28	PM	10/21/07	8:53:44	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29D	82420	5924
10/21/07	8:55:22	PM	10/21/07	8:56:56	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29E	82421	5925
10/21/07	8:56:48	PM	10/21/07	8:56:54	PM	2007_10-21	jcampbel_datarequest_10-21-2007_29F	82422	5926
10/21/07	8:56:57	PM	10/21/07	8:57:11	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A0	82423	5927
10/21/07	8:57:27	PM	10/21/07	9:00:33	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A1	82424	5928
10/21/07	9:01:07	PM	10/21/07	9:02:23	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A2	82425	5929
10/21/07	9:04:55	PM	10/21/07	9:05:09	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A3	82426	5930
10/21/07	9:20:28	PM	10/21/07	9:20:49	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A4	82427	5931
10/21/07	9:27:18	PM	10/21/07	9:28:50	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A5	82428	5932
10/21/07	9:28:37	PM	10/21/07	9:29:16	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A6	82429	5933
10/21/07	9:29:23	PM	10/21/07	9:30:08	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A7	82430	5934
10/21/07	9:29:28	PM	10/21/07	9:30:39	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2A8	82431	5935
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10/21/07	9:30:47	PM	10/21/07	9:31:11	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AA	82433	5937
10/21/07	9:31:23	PM	10/21/07	9:32:28	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AB	82434	5938
10/21/07	9:32:29	PM	10/21/07	9:33:02	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AC	82435	5939
10/21/07	9:40:16	PM	10/21/07	9:40:38	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AD	82436	5940
10/21/07	9:46:40	PM	10/21/07	9:46:53	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AE	82437	5941
10/21/07	9:50:35	PM	10/21/07	9:51:47	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2AF	82438	5942
10/21/07	9:52:49	PM	10/21/07	9:53:16	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B0	82439	5943
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10/21/07	10:15:18	PM	10/21/07	10:17:13	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B2	82441	5945

10/21/07	10:21:19	PM	10/21/07	10:22:05	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B3	82442	5946
10/21/07	10:22:30	PM	10/21/07	10:22:55	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B4	82443	5947
10/21/07	10:24:06	PM	10/21/07	10:24:31	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B5	82444	5948
10/21/07	10:24:34	PM	10/21/07	10:24:51	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B6	82445	5949
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10/21/07	10:28:55	PM	10/21/07	10:29:01	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B8	82447	5951
10/21/07	10:35:19	PM	10/21/07	10:36:23	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2B9	82448	5952
10/21/07	10:36:30	PM	10/21/07	10:37:32	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2BA	82449	5953
10/21/07	10:37:26	PM	10/21/07	10:37:36	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2BB	82450	5954
10/21/07	10:37:38	PM	10/21/07	10:39:12	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2BC	82451	5955
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10/21/07	10:43:05	PM	10/21/07	10:43:54	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2BE	82453	5957
10/21/07	10:44:33	PM	10/21/07	10:45:19	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2BF	82454	5958
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10/21/07	10:47:17	PM	10/21/07	10:47:40	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C1	82456	5960
10/21/07	10:47:53	PM	10/21/07	10:48:08	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C2	82457	5961
10/21/07	10:48:18	PM	10/21/07	10:49:15	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C3	82458	5962
10/21/07	10:48:35	PM	10/21/07	10:48:48	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C4	82459	5963
10/21/07	10:49:32	PM	10/21/07	10:49:50	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C5	82460	5964
10/21/07	10:50:04	PM	10/21/07	10:50:19	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C6	82461	5965
10/21/07	10:50:12	PM	10/22/07	2:20:13	AM	2007_10-21	jcampbel_datarequest_10-21-2007_2C7	82462	5966
10/21/07	10:50:29	PM	10/21/07	10:51:02	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C8	82463	5967
10/21/07	10:50:36	PM	10/21/07	10:51:00	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2C9	82464	5968
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10/21/07	10:54:57	PM	10/21/07	10:55:14	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2CF	82470	5974
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10/21/07	10:56:48	PM	10/21/07	10:56:56	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D1	82472	5976
10/21/07	10:57:16	PM	10/21/07	10:57:35	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D2	82473	5977
10/21/07	10:57:57	PM	10/21/07	11:01:43	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D3	82474	5978
10/21/07	10:58:19	PM	10/21/07	10:59:10	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D4	82475	5979
10/21/07	10:59:11	PM	10/21/07	11:01:01	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D5	82476	5980
10/21/07	11:01:13	PM	10/21/07	11:01:38	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D6	82477	5981
10/21/07	11:02:28	PM	10/21/07	11:02:39	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D7	82478	5982
10/21/07	11:03:04	PM	10/21/07	11:05:42	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D8	82479	5983

10/21/07	11:06:38	PM	10/21/07	11:06:56	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2D9	82480	5984
10/21/07	11:20:23	PM	10/21/07	11:20:39	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DA	82481	5985
10/21/07	11:27:01	PM	10/21/07	11:27:33	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DB	82482	5986
10/21/07	11:28:00	PM	10/21/07	11:31:16	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DC	82483	5987
10/21/07	11:46:16	PM	10/21/07	11:46:32	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DD	82484	5988
10/21/07	11:46:32	PM	10/21/07	11:47:20	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DE	82485	5989
10/21/07	11:48:37	PM	10/21/07	11:50:13	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2DF	82486	5990
10/21/07	11:55:21	PM	10/21/07	11:56:02	PM	2007_10-21	jcampbel_datarequest_10-21-2007_2E0	82487	5991

Appendix 15

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF SAN DIEGO
CENTRAL DIVISION

In Re: 2007 Wildfire Individual Litigation
Case No. 2008-00093080 CU-NP-CTL

Witch/Guejito and Rice Fires

This document relates to:

EDWARD MALONE; HIDDEN VALLEY RANCH, et. al.,

Plaintiffs,

v.

SAN DIEGO GAS & ELECTRIC COMPANY, SEMPRA ENERGY, COXCOM, INC., and DOES 1-50,

Defendants.

VIDEOTAPED DEPOSITION OF RAY NECOCHEA

SAN DIEGO, CALIFORNIA

THURSDAY, FEBRUARY 18, 2010

Reported By:
PATRICIA Y. SCHULER, RPR
CSR No. 11949

Job No. 130339

13:22:47 deenergizing the line to allow some work to occur.

13:22:52 MR. BOOZELL: Vague and ambiguous. I don't know --

13:22:52 If you understand the question, you can answer it.

13:22:54 BY MR. NIELD:

13:22:57 Q. Let's say they have a problem at the substation that that is tied to, let's say, or they need to do something at another location. They can operate that breaker, thus deenergizing that particular line?

13:23:00 A. Yes, they can. Yes, they can do that.

13:23:01 Q. When they are opening it, then they are intentionally deenergizing the line for whatever reason?

13:23:07 A. For whatever the reason, yes.

13:23:09 Q. Okay.

13:23:14 A. Which I don't know.

13:23:14 Q. But when it is tripped, it is an unintentional action. They are not opening the line. Something happened to make it trip; is that correct?

13:23:16 A. That is correct.

13:23:18 Q. Now, in the next column where it says "Cause," now we are looking at October 21st, '07.

13:23:20 A. Um-hmm.

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13:23:41 Q. I think the words are "trouble-wind." Is
13:23:44 that what that says? Correct?
13:23:47 A. Yes.
13:23:47 Q. And those are your words?
13:23:50 A. Those are my words, yes.
13:23:51 Q. So you determined on October 21st of '07,
13:23:54 the first time you went to this Santa Ysabel
13:24:01 substation, that there was a trip in this line because
13:24:08 of a trouble condition, that trouble condition being
13:24:11 wind; is that correct?
13:24:13 MR. BOOZELL: Vague and ambiguous, compound,
13:24:15 assumes facts.
13:24:20 THE WITNESS: In the context that this is
13:24:22 here, "trouble" really -- it is an open statement, not
13:24:33 knowing what the cause is. And I am just offering a
13:24:39 possible scenario. Trouble/wind.
13:24:52 So like if we get a bird in the air or we
13:24:55 get a patrolman, it kind of -- it was not a planned
13:24:57 outage. That is what that tells me. It does not tell
13:25:00 me any more than that.
13:25:01 BY MR. NIELD:
13:25:01 Q. In the "Cause" column, your job is to make
13:25:05 an entry, given your assessment of what caused that
13:25:08 event to occur, what caused that trip to occur; is
13:25:10 that correct?

13:25:12 MR. BOOZELL: Vague and ambiguous, assumes facts.

13:25:16 THE WITNESS: What I think caused it? No. I am just reporting the conditions at the time more than that. The most important thing on this record is the counter. Because in the case -- there are two different scenarios that we spoke about. One of the scenarios is that it was switched or trouble.

13:25:37 And what it does -- fault current on a circuit will cause it to do damage to oil. And it needs to be maintained. There is a maintenance problem with it, and that is what it is doing. It is counting the trip. And it does matter whether it is caused by trouble or switching.

13:26:02 BY MR. NIELD:

13:26:02 Q. We are not talking about switching on the first entry for November -- excuse me -- October 21st of '07. We are not talking about switching, correct?

13:26:09 A. Right. This helps the maintenance crews to know the count. It helps them to understand this thing has been switched in and out so many times, and it has to do with another department. It doesn't really -- if you want a definitive answer of what it was, this isn't -- this helps them to understand the condition --

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13:26:31 Q. That is not really the question.

13:26:33 MR. TRAFICANTE: Move to strike as nonresponsive.

13:26:34 BY MR. NIELD:

13:26:36 Q. I am going to ask, please, if you could listen to the question because you're typically going way beyond the scope of the questions here. Many of these questions are yes or no answers or you don't understand or maybe you can't answer it.

13:26:37 But -- you can tell me that, but let's try to stay within the scope of the questions because I would like to go home for dinner at some point tonight.

13:26:50 MR. DAVIS: We're going home for dinner.

13:26:54 MR. NIELD: I don't want to have to go home with you.

13:26:57 BY MR. NIELD:

13:26:59 Q. So let's get back to this. So when you wrote on that first October 21, '07, entry "trouble/wind," you were not intending to set out your opinion of what the cause was at that point in time. You were just speculating on possibilities?

13:27:00 A. Yes.

13:27:01 Q. Was there any other possibility that you were speculating about at that point that you had in

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13:27:33 mind that you didn't write down here?

13:27:35 A. No.

13:27:36 Q. No?

13:27:38 A. I am reporting the conditions as I saw them.

13:27:41 The record shows that Shawn tells me we have had a

13:27:44 trip, so there is trouble. He didn't purposely open

13:27:49 the line. So that is what I am reporting. I am just

13:27:51 recording on the card.

13:27:53 Q. And you wrote that wind could have caused

13:27:55 that trouble. Wind could have caused that fault.

13:27:58 A. It is not definitive.

13:28:00 Q. It is not definitive, but that's --

13:28:02 A. A possibility.

13:28:02 Q. That is the option you chose to write on

13:28:04 this card?

13:28:05 A. Yes.

13:28:06 Q. Right. And that would have meant wind

13:28:09 slapping conductors together, correct?

13:28:11 MR. BOOZELL: Calls for a conclusion, vague

13:28:12 and ambiguous, misstates his testimony and the facts.

13:28:21 THE WITNESS: It's one of the scenarios.

13:28:22 BY MR. NIELD:

13:28:22 Q. That's one of the possibilities.

13:28:23 A. It's one of the possibilities, yes.

13:28:24 Q. That you had in mind when you wrote that in

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13:28:27 this chart -- in this card, correct?

13:28:30 MR. BOOZELL: Misstates his testimony.

13:28:32 THE WITNESS: It is one of the

13:28:33 possibilities. Because it could be a broken crossarm.

13:28:36 It could be a contact of a vehicle. It could be a

13:28:39 bird contact. So we have all these things.

13:28:43 BY MR. NIELD:

13:28:43 Q. But if it was a contact with a vehicle, you

13:28:45 would not write "wind," would you?

13:28:46 A. I am reporting the conditions.

13:28:50 Q. The next line, you also -- apparently you

13:28:51 come back another time; is that correct?

13:28:54 A. Yes.

13:28:55 Q. Does that second entry indicate that you

13:28:57 left and came back?

13:29:01 A. Not having a time stamp, most likely it was

13:29:04 a different event or -- right.

13:29:06 Q. The odometer now has gone from 1526 to 1527,

13:29:10 correct?

13:29:11 A. Correct.

13:29:11 Q. Indicating another trip?

13:29:13 A. Yes.

13:29:14 Q. And again, in the "Cause" column you write

13:29:16 "wind."

13:29:20 A. Conditions are the same.

13:29:21 Q. Is it your opinion at that point in time you think wind is still the most likely cause of the trip, correct?

13:29:29 MR. BOOZELL: Misstates his testimony. It's vague and ambiguous.

13:29:32 THE WITNESS: I'm stating the conditions, yes.

13:29:40 BY MR. NIELD:

13:29:40 Q. And you stated the condition because you believed -- it was your opinion that wind was the most likely factor in causing that trip.

13:29:47 MR. BOOZELL: Asked and answered, argumentative, misstates his testimony.

13:29:56 THE WITNESS: I think I did answer it.

13:29:57 MR. TRAFICANTE: I don't think you did. You answered the question about the last entry, not this one.

13:30:06 THE WITNESS: It is conditions. Again, the wind was a condition on the 1526. It is a condition in 1527. It is a condition in 1529. It is a condition in 1531.

13:30:18 MR. TRAFICANTE: Move to strike as nonresponsive.

13:30:21 BY MR. NIELD:

13:30:21 Q. Yeah. And again, let's go back to the

13:30:23 question.

13:30:24 MR. BOOZELL: He's answering the question.

13:30:24 BY MR. NIELD:

13:30:24 Q. In the "Cause" column for the second entry on the 21st of October of 2007, you again write

13:30:26 "wind," correct?

13:30:31 A. Yes.

13:30:33 Q. That is in the column entitled "Cause,"

13:30:35 correct?

13:30:38 A. Yes.

13:30:38 Q. Meaning cause of the trip, to the extent

13:30:39 that you can make that determination, correct?

13:30:40 MR. BOOZELL: It's argumentative and

13:30:44 misstates the testimony.

13:30:45 THE WITNESS: I have not made that

13:30:46 determination. I am stating conditions.

13:30:48 BY MR. NIELD:

13:30:50 Q. Well, you are stating your opinion on what

13:30:50 the most likely factor is in that "Cause" column,

13:30:51 correct?

13:30:55 MR. BOOZELL: Misstates his testimony and

13:30:56 argumentative.

13:30:57 THE WITNESS: I think it is incorrect the

13:30:57 way you are assuming that because I am stating the

13:30:58 conditions that are at that time. Yes, we still have

13:31:01

13:31:06 wind. If it would have been lightning, I would have said "lightning.""

13:31:09 BY MR. NIELD:

13:31:09 Q. Was it hot outside?

13:31:10 A. It was warm.

13:31:11 Q. Did you write "hot"?

13:31:12 A. It was windy.

13:31:13 Q. You didn't write any other condition down here but wind, correct?

13:31:18 A. You're right, yes.

13:31:22 Q. Yes. Let's go down to the third entry. Now the odometer -- it's the same day, October 21st of '07. Now the odometer has gone from 1527 to 1529, correct?

13:31:32 A. Um-hmm.

13:31:32 Q. That indicates two more trips, correct?

13:31:34 A. That is correct.

13:31:36 Q. Now you write "fire/wind."

13:31:39 A. Correct.

13:31:41 Q. Now you know there is a fire, correct?

13:31:43 A. Yes.

13:31:44 Q. Yes. And you are attributing that fire to wind?

13:31:48 A. No. I wrote "fire" because I saw the plume of smoke --

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13:31:52 Q. All right.

13:31:52 A. -- and it is still windy.

13:31:59 Q. All right. And these conductors have tripped two more times?

13:32:00

13:32:01 A. Circuit has tripped two more times, yes.

13:32:04 Q. Thank you for the correction. The circuit has tripped two more times?

13:32:05

13:32:06 A. Yes.

13:32:07 Q. There is a fire, and there's wind conditions.

13:32:10

13:32:11 A. Yes.

13:32:12 Q. At that point in time, weren't you of the opinion that the wind and the impact upon the conductors slapping them together could have been the cause of the fire?

13:32:16

13:32:20

13:32:24

13:32:25 MR. BOOZELL: Vague and ambiguous, misstates his testimony, argumentative, calls for speculation.

13:32:26

BY MR. NIELD:

13:32:33

13:32:33 Q. It's yes or no.

13:32:34 MR. BOOZELL: If it's yes or no, it is yes or no. If he's got some other answer, that is his answer.

13:32:35

13:32:38

13:32:39 THE WITNESS: Could you ask your question again? I'm sorry.

13:32:40

13:32:42 MR. NIELD: Can you repeat the question,

please.

(Record was read as follows:

Q. At that point in time, weren't you of the opinion that the wind and the impact upon the conductors slapping them together could have been the cause of the fire?)

THE WITNESS: I don't have hard evidence that that was what caused the fire, no.

BY MR. NIELD:

Q. I am not talking about hard evidence. I am not talking about concrete facts here. I am talking about your opinion of what was going on when you made this entry, the third entry on October 21st of '07, where, after two more trips had occurred, you have already written "trouble" and "wind" a couple of times.

Didn't you believe that that fire was likely caused by the windy conditions and their impact upon the conductors slapping them together?

MR. BOOZELL: Same objection.

THE WITNESS: I can't answer that as affirmative because I am looking at a line that goes through a fire that has started, and I don't know that that line -- but I know that line is in the middle of it, so that is why -- there is a fire. There is still

13:34:25 wind. And if that line goes in the direction -- there
13:34:27 is -- the fire crosses under many of the lines, but
13:34:30 you don't think that every time it crosses under a
13:34:33 line, that that is the source of the fire.
13:34:36 BY MR. NIELD:
13:34:36 Q. Now you have added another component,
13:34:39 apparently, that you knew that these lines -- this
13:34:42 line that was tripping went in the area of where the
13:34:46 fire that you could observe was, correct?
13:34:49 MR. BOOZELL: Misstates his testimony.
13:34:50 THE WITNESS: No, incorrect. I know that
13:34:51 there was a plume of smoke to the west of the
13:34:54 substation. I do know that Tie Line 637 goes to the
13:34:59 west, but where in that plume of smoke -- I know it
13:35:06 goes in that general direction, but to say -- for me
13:35:12 to tell you that I knew that tie line caused that fire
13:35:14 at that point, I can't say yes to that.
13:35:16 BY MR. NIELD:
13:35:17 Q. And I am not asking for absolute certainty
13:35:19 on your point. I am just asking for what your opinion
13:35:21 was based upon the information that you had available
13:35:23 to you.
13:35:24 You knew that the Tie Line 637 went to the
13:35:26 west in the direction of the smoke that you observed,
13:35:29 correct?

13:35:29 A. Yes.

13:35:30 Q. You knew it was windy, correct?

13:35:31 A. Correct.

13:35:32 Q. You knew that 637 was tripping repeatedly, correct?

13:35:36 A. Correct.

13:35:37 Q. And being reenergized after it tripped, correct?

13:35:40 A. It was reenergized either automatically or -- I don't recall that the operator did it or the relays did it.

13:35:41 Q. But it was reenergized because it would not keep tripping if it was not being reenergized, correct?

13:35:49 A. Correct.

13:35:54 Q. And so with that information, you are writing on this card "fire/wind." It was your opinion at that time, based upon the information you had, that the most probable cause of the fire was the impact of the wind on those conductors, Tie Line 637, causing them to slap together, creating a fire.

13:35:55 MR. BOOZELL: Assumes facts. It's argumentative, and it's been asked and answered several times.

13:36:02 ///

13:36:05

13:36:11

13:36:15

13:36:20

13:36:21

13:36:22

13:36:24 BY MR. NIELD:

Q. I mean, if you did not believe that, tell me you didn't believe that.

13:36:28 A. I did not know.

13:36:30 Q. So you just wrote it down -- you did not know, but you wrote that down?

13:36:33 A. I wrote that down as conditions that were prevailing at that particular moment.

13:36:38 Q. Again, I'm not asking for absolute certainty, just opinion.

13:36:43 MR. BOOZELL: Asked and answered.

13:36:44 BY MR. NIELD:

13:36:45 Q. You didn't have that opinion? You didn't think --

13:36:47 MR. BOOZELL: He's already answered it. Move on. Move on. He's answered it three or four different times now.

13:36:54 MR. NIELD: Are you instructing him not to answer that question?

13:36:56 MR. BOOZELL: You are asking the same question over and over. He's already answered. If you are going to try to get him to change his answer because you're going to badger him into it, then, yes, I'm instructing him not to answer.

13:37:01 ///

43e49fbd-bfad-4f0b-b3b2-d40cf597e7c5

13:37:04 BY MR. NIELD:

Q. Okay. So you just didn't know?

13:37:08 MR. MCGRATH: Badger?

13:37:09 MR. NIELD: Yeah. I am pretty bad that way.

13:37:14 THE WITNESS: I didn't know what caused the fire. I reported conditions.

13:37:24 BY MR. NIELD:

Q. Which was wind?

13:37:26 A. Wind, yes.

13:37:27 Q. And at that point, fire?

13:37:29 A. There was a fire that had started. There was wind that was blowing.

13:37:34 Q. In the general vicinity of the tie line that was tripping?

13:37:37 A. There is also another 12 kV line that runs through that same area.

13:37:41 Q. Was that one tripping too?

13:37:42 A. It did.

13:37:45 Q. Is that when -- did you indicate that somewhere, that that line had tripped?

13:37:48 A. It subsequently tripped. I don't know if it was that morning that it tripped or later in the day. I am sure we -- I think we either -- I can't remember if it tripped or we purposely deenergized it. I know we opened something.

13:37:51

13:37:56

13:38:02

13:38:04

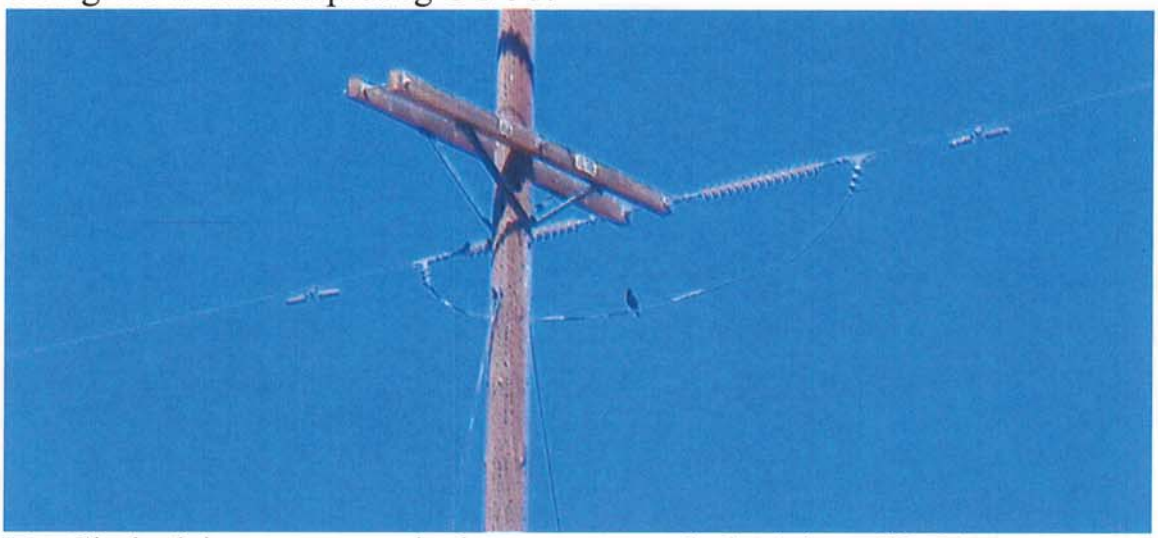
13:38:08

Appendix 16

Discussion of Ed Clark's letter to Matthew Gilbert Fire Captain Specialist - July 29, 2008

We have found Mr. Clark's statements, allegations, and explanations of electrical effects to be completely without merit and void of physical basis.

In Mr. Clark's third paragraph of his letter to Captain Matthew Gilbert, he states he has *"undisputable pictures where San Diego Gas and Electric has improperly installed down guys on Transmission Line 637. "* Mr. Clark is wrong. He is misinterpreting GO-95.



Mr. Clark claims guys attached on a common bolt violate GO-95.
Mr. Clark is reading GO-95 and taking sections out of context. There is language in GO-95 that requires a minimum of one foot vertical separation of overhead guys and span wires attached to a pole. [Rule 56.4 D (3) (a)] Mr. Clark is incorrectly applying that language to anchor guys.

- The GO-95 rule cited by Mr. Clark does not apply to anchor guys.
- Rule 56.4 D (3) (b) applies to anchor guys.
- Part 3) of this rule specifically exempts anchor guys from the spacing requirements, as long as they are acting in different directions from the pole.

The Southern California Edison (SCE) Standard TO 201 quoted by Mr. Clark is written to address guys in close proximity on the pole, like span guys, head guys or anchor guys to a common anchor. On April 24, 2008, representatives from SDG&E, SCE and PG&E met with members of the

CPUC and it was determined that all three utilities attached opposing guys on a common bolt and there was no violation of GO-95.

Also in the third paragraph of the letter to Captain Gilbbert, Mr. Clark says he "showed an undisputable picture of a burn pattern leaving a down guy anchor at the point of origin of the Witch fire."

In actuality, the photo does not provide undisputable evidence that the anchor guy was involved in the beginning of a fire.

- Calfire did not determine this was the point of origin of the Witch fire
- The area where this photo was taken actually burned on the second or third day of the Witch fire
- This photo was taken after the fire. It does not represent evidence that a fire started at the anchor. After a fire came through, burned plant material would be expected.

Referring to Mr. Clark's website, he has many photos on his site which he claims back up his theories. Looking at some photos of guy guards, guy wires and attachments on Mr. Clark's site, we can detect he is ignorant about the manufacturer's markings and is jumping to radical conclusions in his effort to find evidence that supports his theories.

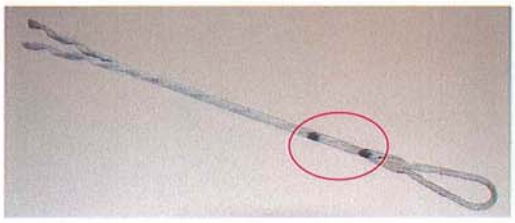
For example – the next slide has a photo of an SDG&E (presumably) guy guard. Mr. Clark claims he sees evidence of arcing.

More Arcing ?

Mr. Clark's Presentation Slide #14

SDGE Response

➢ ***The black spot on the wire in Mr. Clark's picture is actually an old paint band applied by the manufacturer to the "Preform Type Guy Grip" to designate the size. Black means that it fits 5/16-inch galvanized guy wire.***



- Additionally a plastic guy guard was removed from service on TL692 and markings on the interior of the guard were subjected to testing to determine their origin, and specifically to determine if there was any evidence of arcing.

- There was no evidence of arcing, and the markings were consistent with abrasion caused by mechanical movement between the guard and the guy wire, guy grip and or anchor rod. (See Test Report)

Still reading Mr. Clark's third paragraph, he says the Witch fire was caused by "*ground current resulting from system faults on the SDG&E system.*"

- TL 637 experienced 4 phase to phase faults the day of the Witch fire
- There were no ground faults on TL 637 the day of the Witch fire.

In other letters Mr. Clark has relied on another explanation for dangerous currents that involve a mysterious ground current emanating from unknown sources, perhaps a substation. According to Mr. Clark, this current travels through the ground unless it encounters an attractive pair of guy wires attached on a common bolt on opposite sides of a pole. Then this current travels up and down the guy wire, causing electric arcing on the interfaces between the guy grips and the anchor rods, leading to ignition of any nearby dry plant material.

Mr. Clark states"*any protection engineer within SDG&E or any of the Electrical Utilities can explain why this down guy design is a problem'*

- SDG&E Protection Engineers performed field tests on actual anchor guys, and provided calculations that established that no dangerous voltages exist on anchor guys under any circumstances except direct contact from an energized wire, or lightning strike.

Additionally, we hired a third party to lend additional credence to our findings. Mr. John Anderson, P.E., is an authority on insulation, grounding, and high voltage transmission systems. Mr. Anderson's professional career spans more than 60 years. Mr. Anderson's conclusions are as follows:

1. As long as line-to-ground fault current or excessive insulator leakage current does not flow down a pole of this 69 kV line into the guy wire bolt on the pole, voltage induction on the pole guy wires should not be hazardous, being at most a few volts.

2. The voltage drop created between two guy wire anchors 30 feet apart by earth surface currents during line-to-ground fault currents of 2000 amperes was calculated not to be hazardous as long as the fault currents are not flowing down the pole containing the guy wires.

3. It is recommended that all calculations be verified by full-scale test – either at the Massachusetts EPRI laboratory or at another site with capability to do full-scale energization, or on the actual line itself

In previous letters and statements to the media Mr. Clark has also claimed that the dangerous currents flowing on the guy wires are present "*even when the transmission line is de-energized.*" We asked John Anderson to comment on this as well:

"When the line is not energized, stray electrical currents can still exist in the wires and the earth, for example when induced into the line conductors by solar magnetic storms and along the earth's surface, or by power frequency ac network unbalance (zero sequence) currents. These currents are small. If this were a hazard, metal fences around the United States would be dangerous. However, metal fences only become a hazard when they come into direct electrical contact with electric power conductors or when lightning hits the fences or induces severe voltages into fences. Actual measurement can demonstrate this."

The North County Times ran an article on the cause of the Witch fire by Staff Writer Dave Downey on February 23, 2008. One paragraph reads:

- However, Jim Garrett, fire prevention chief for the California Department of Forestry and Fire Protection in San Diego, said Friday that, while investigators have not finished their investigation, they have ruled out the possibility that guy wires started the fire.

It is interesting that Mr. Clark does not buy the Calfire theory that a phase to phase fault on TL637 created sparks, or hot molten metal that fell to the ground and ignited the Witch fire. In his letter to Captain Gilbert, he states that had the two phases on TL637 come together;

> "*The damage would have resulted in the lines burning in two, falling to the ground. The amount of current that flows resulting from a bolted 69kV fault, the line acts as a fuse and would burn open faster than the relays could operate resulting then in a 69kV phase to ground fault.*"

- Wires slapping together on 69kV do not constitute a bolted fault
- Our experience has been that phases that slap together rarely part, especially when the conductor has a steel core
- The line cannot act as a fuse
- Relays act to clear phase to phase faults long before a parted conductor could hit the ground

Mr. Clark makes the following statement on page 3 of his letter.

> *"Please remember the PUC already made a public statement to the Union Tribune that arcing exists at the down guy anchors at several locations."*

He is referring to an article published on February 16, 2008. The first paragraph reads:

State utility regulators said yesterday that they have found evidence of burning on wires supporting several power poles in the backcountry, lending credence to an independent consultant who said the support-cable design is a potential fire risk.

Further down in the same article:

The PUC confirmed that the design does not violate current standards. But regulators said the rules may need to be changed if the design is found to be a potential fire threat.

The CPUC has yet to issue their official report. They may or may not have a lingering concern about the design of the anchors – However:

- There is no real evidence that burning or arcing is occurring on the anchors due to this guy wire seeking current being proposed by Mr. Clark.
- There is plenty of evidence that such dangerous currents do not exist.

Finally Mr. Clark says "*I realize there were members in the meeting with Cal Fire on April 5, 2008 that sit on advisory positions with SDG&E and most likely may be easily influenced since they have a non-Electrical background.*"

This part of his letter is rambling but he is saying that these members do not have the right expertise to judge the facts in a wildland fire investigation that involves electric facilities. Therefore the Calfire conclusions are not valid.

- What was this meeting?
- Who are the members with what positions?
- The SDG&E Fire coordinators, Hal Mortier and Randy Lyle are not aware of Calfire meetings on Saturday April 5, 2008 involving SDG&E or any SDG&E representatives.

Appendix 17

REPORT

Voltage Induction on Pole Guy Wires of SEMPRA 69 kV Lines

Report SE-001-08

John G. Anderson, PE

June 23, 2008

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1. Report Summary

This report describes a theoretical analysis of voltage induction on pole and guy wire configurations of a 69 kV transmission line of Sempra (San Diego Gas & Electric Co). No hazardous guy wire voltages were found for normal line operation or during remote faults.

Recommendations are made for special electrical measurements to be made on sample guy wires at pole sites to confirm and facilitate the analysis.

2. Introduction

During an electrical fault on a transmission line pole, caused by lightning, insulator failure or any other means, prudence requires that people stay away from the pole or pole guy wires until the fault is cleared and operation restored to normal. Any electrical arcing is symptomatic of an abnormal condition and caution is necessary. Sets of safety rules have long been in publication. Reference 4 provides safety recommendations for incursions and maintenance around power line poles, towers and substations. The electric power industry has been conscientious in promoting hazard research and safety rule development for power delivery to protect utility workers and the public, particularly during fault and live-line maintenance conditions. The writer of this report has been active in researching and reporting the electrical phenomena involved (Ref. 3).

Recently, a Mr. Edward Clark (Ed Clark – theelectricalexpert.com) has proposed on his email blog site that the metallic guy wires on transmission lines of Sempra (San Diego Gas & Electric) are part of an unrecognized electrical shock hazard to the public and a fire ignition hazard As a result of this claim, an analysis here carries out a theoretical review in advance of actual measurements of voltages and currents which should explore validity of these claims.

A rough sketch of a representative guy wire geometry on a Sempra 69 kV pole is shown in Figure 2-1. The dimensions are in feet and meters, the former for convenience and the later for scientific analysis. The guy wires are steel, and the guy anchors are buried metal plates. No guy insulators are assumed. Electrical variables that can change somewhat from pole to pole include:

1, Resistivities of the earth in the vicinity of the poles, ohm-meters. These resistivities can be found from earth resistivity maps used in analyzing signal strength of radio/television stations, or by new measurements using driven electrodes into the earth (the Wenner Four Electrode method) or from core samples, ground searching radar or other means. (Ref. 5). They change with soil moisture content.

2. Electrical resistance between the guy wire anchors, determined by opening an electrical gap in one of the guys and then measuring the resistance across the gap with an ohm-meter. Some special safety rules should be followed, since claims have been made that voltage hazards can exist under special conditions.

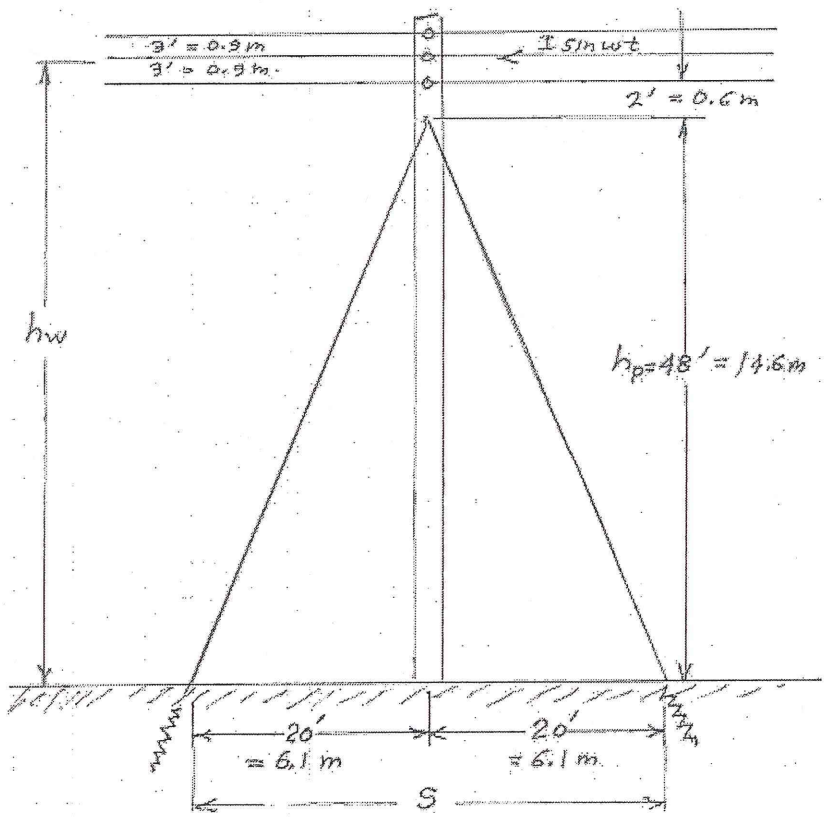

Figure 2-1. Rough Sketch of a 69 kV Wood Pole With Guy Wires

3. Records of maximum phase-phase and phase-ground fault currents in the overhead conductors.

4. Histories of insulator and pole leakage currents, insulator damages from lightning or severe weather, any observed fires in pole vicinities.

5. Any records of electrical shock created at the guys.

In Figure 2-1, a "guy wire loop" exists, consisting of the two guy wires and the path S along the surface of the earth between them. Voltages can be induced in this loop by

several mechanisms to be discussed, and it is necessary to determine if any combination of these mechanisms can create lethal potentials and – if so - under what conditions.

These loop induction mechanisms are as follows:

1. A rapidly changing fault current condition in the overhead wires creates a changing magnetic field by Faraday's Law in the guy wire loop. If any guy wire connections have a high resistance due to corrosion or loose connections, the induced voltage created by this changing magnetic field can appear across that gap. The question then becomes whether this voltage induction can be sufficient to cause sparking across the connection and whether sufficient to be lethal if someone bridges the gap with his/her body, and whether enough spark coulombs can be created sufficient for ignition of stray vegetation in the vicinity. These points will be pursued in this report, particularly in Appendix A-1.

2. A phase-ground fault or fault between two wires can create a sudden flow of zero-sequence fault current in the earth under the line. A small fraction of this current will flow between the two guy wire anchors, and the electrical resistance between them will create a voltage between the anchors which is enhanced if a faulty guy wire electrical connection (corrosion or loose bolts, etc) exists. Again, will this voltage be sufficient to create sparking or be lethal, and will any consequent sparking have enough coulomb content for ignition of vegetable matter? To the extent possible, this induction can be examined..

3. A dirty or otherwise badly contaminated insulator surface at the overhead wires will feed leakage current of a few milliamperes down the surface of the pole or into the pole heartwood. The guy wires will then collect this leakage current at the thru-bolt and feed it into the guy anchor resistances to earth. If the guy anchor resistances each are of the order of 50 ohms or less (25 ohms for the pair), 10 milliamperes would create a guy anchor voltage of 0.25 volts, far below lethal value and below a sparking threshold. A much stronger leakage current would be required for a hazardous condition. Facilities exist in the United States to test contaminated poles and insulators for leakage current hazards, for example at the Lenox, Massachusetts laboratories of the Electric Power Research Institute. They could also test the induction events outlined in Sections 1 and 2 above.

4. Stray currents or geomagnetically induced currents flowing between the two guy anchors could develop small voltages between the guy anchors. These earth currents would have to be severe to create lethal guy voltages. An investigation of historically-recorded stray currents in the line grounds would be helpful, but currents sufficient to be a problem seem unlikely to have ever been recorded.

5. Neither the National Electrical Safety Code (Ref. 12) nor the National Electric Code (Ref. 13) make any reference to loop induction of guy wire voltages or voltages on guys from stray earth currents whether or not a line is energized.

(Screw anchors, buried steel plate anchors or reinforced concrete blocks have been used as the grounding electrodes for guys)

3. Levels of Lethal Body Currents

What constitutes lethal body currents is an old, old subject in electrical engineering. What is lethal at one time may not be at another time. It depends on the duration of exposure, body resistance and mass, age and sex of the subject, and nature of the shock current, among other factors. For an optimum fault clearing time of three ac cycles, a graph by Biegelmeier and Lee (Ref. 1) shows a safe limit of 500 milliamperes power frequency body current, and Dalzel and Lee (Ref. 2) in 1968 found 116 milliamperes divided by the square root of the exposure duration in seconds. For three 60 Hz cycles, this corresponds to 519 milliamperes . A body impedance of 1000 ohms is often used to compute the lethal voltage of approximately 500 volts for a three cycle 60 Hz exposure. For Dalzel and Lee, a one second shock would require 116 milliamperes threshold (substantially above Biegelmeier), and for a body impedance of 1000 ohms, the shock voltage would have to be 116 volts. IEEE Guide 1048 (Ref. 6) reports a borderline value of 60 Hz power frequency current of 6.0 milliamperes for let-go current for women and 9.00 milliamperes for men. In this guide, venticular fibrillation occurs at 67 milliamperes for women and 100 milliamperes for men, primarily because of body size. This borderline value was for 0.5% of people. The pole guy wires or any other metallic appurtenance must be capable of delivering these shock currents to create ventricular fibrillation if the above current levels are accepted. In dry winter air, one can create 1000 volts by walking over a rug, but this is s a static charge and does not have the capability to deliver a ventricular fibrillation current – it is current into the body, not voltage, that does the damage.

For very fast microsecond currents, the ventricular fibrillation current can vary greatly, depending on the electrical and contraction state of the heart at the moment the shock occurs. Two people of the same age and health can be exposed to the same lightning current; one will die and the other live, largely because of the instantaneous states of their hearts at the moment the current surge occurs.

The reader is referred to IEEE Guide 80 (Ref. 4) for other industry procedures.

From these experiments by Biegelmeier and Dalzel and others, and from perusal of the medical records, it appears that – except for some unusual medical condition or body state – a one second 60 Hz shock voltage of 50 volts or more would not be lethal, and the source would have to be capable of delivering short circuit current of 500 milliamperes into the person involved. The faster the fault clearing time for the line circuit breakers the higher the shock current can reach before the ventricular current level occurs. For the loop currents the loop output current into a subject would be limited by the ground resistance between the two ground anchors.

4. Voltage/Current Induction by Short Circuit Currents in the Overhead Wires

In the introduction, it was pointed out that changing short-circuit currents in the overhead conductors create a changing magnetic field that passes through the loop formed by the two guy wires and the earth's surface to create a voltage in the loop. A changing magnetic field of one weber per second in a loop of electrically conduction material will induce a driving voltage in the loop of one volt. Appendix 1 of this report does a mathematical analysis of this voltage induction. In general, the induced loop voltage created by a 60 Hz fault current of 2000 amperes in the overhead wires is quite small, and below lethal magnitudes.

5. Voltage/Current Induction From Earth Surface Currents

For a single phase fault to ground at the receiving end of a transmission line, consider Figure 5-1 below:

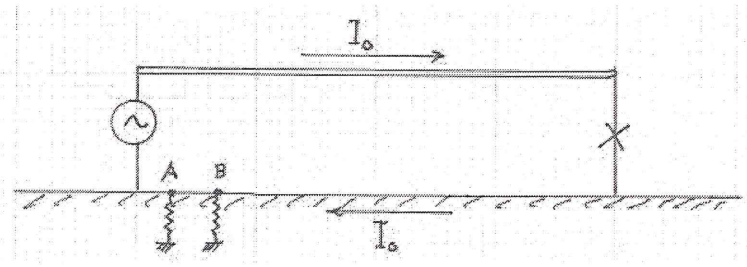

Figure 5-1. Ground Current for a Single Phase Line-Ground Fault.

A **small fraction** of the fault (zero-sequence) current flowing in the earth in Figure 5-1 will arrive at a pair of pole guy anchors A and B, and flow from one to the other, and – since these anchors have resistance between them – a measurable voltage will appear between the guy anchors. Could this voltage be lethal, i.e. will it have enough magnitude and current capability to force fibrillation currents into a human body? In 1943, Edith Clark, Professor of Electrical Engineering at the University of Texas and former electrical power systems engineer for the General Electric Company, published Reference 8. In one part of this book, she reordered the Carson Equations (Ref. 9) into a more usable form for calculating all the wire and earth surface impedances for transmission lines. The equation for the 60 Hz resistance of the earth $R_{aa\text{-}g}$ where the return current flows is somewhat messy:

$$R_{aa-g} = 10^{-3}\omega(0.2528) + 10^{-4}\omega\left[-\frac{2.599}{10^{-3}}h_w\sqrt{\frac{f}{\rho}}\right] \quad \text{.....(1)}$$

where $R_{aa\text{-}g}$ = resistance of the earth, ohms per mile
ω = 377 radians per second for 60 Hz,
f = power frequency = 60 Hz
ρ = earth resistivity, ohm-meters

In Eq. (1), the report omits two more terms of the Carson equation, which will cause an error of about 2%, but still sufficient. The equation is for ac currents.
Figure 5-2 plots this equation as a function of conductor height h_w (in feet), using an earth resistivity of 100 ohm-meters and a frequency of f=60 Hz. For a 2000 ampere fault current flowing in the earth, a 60 foot wire height above the earth and an earth resistivity of 100 ohm-meters, the earth resistance under the line is – from Figure 5-2, 0.091 ohms per mile. In this case, **the resistance voltage drop along the earth becomes 2000 x 0.091 = 182 volts per mile**. Then between two guy anchors 40 feet apart, the voltage drop between them will not exceed a proportionate quantity of:

$$V = \frac{40}{5280}x182 = 1.38 volts \quad \text{.....(2)}$$

A misconception frequently assumes that full fault current flows into the pole guy wires during a line-ground fault. This is not true. The total fault current actually spreads out under the line and gradually dies off with decreasing current density with lateral distance, and very little is available to flow through the guys. The larger the guy anchors, the more they will collect portions of the fault current, but the voltage drop between them will not be greater than the earth's voltage drop computed above. **Only a fraction of the earth surface current during faults will flow through the guys and the voltage drop between the guys should be only a few volts, unless the fault occurs at the pole where the guy wire voltage is to be measured. Measurements can demonstrate this.**

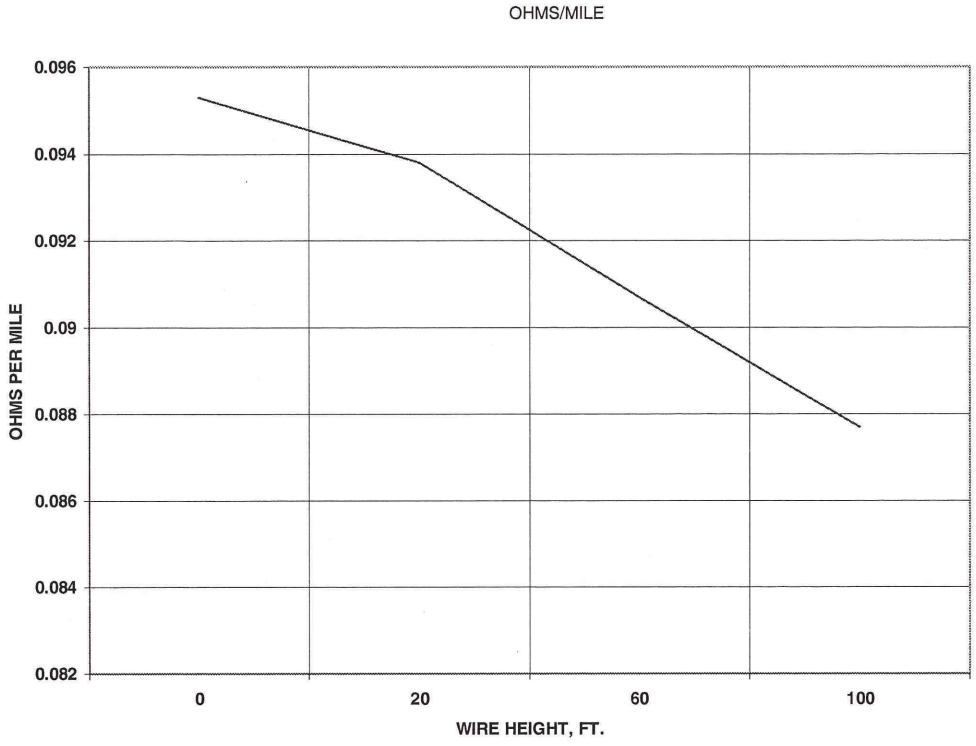

Figure 5-2.. 60 Hz Self Resistance of the Earth, Ohms per Mile

6. Flammable Material Ignition by Sparks

Lewis and Von Elbe (Ref. 10) experimented with the minimum amount of energy required for ignition of flammable materials, including hydrocarbon vapors such as gasoline. Their work encompassed different electrical discharges and materials, but appears to be short for the materials involved in California brush fires. At their Lenox, Massachusetts laboratories, the Electric Power Research Institute did sets of experiments on ignition by sparks (Ref. 11). For hydrocarbon vapors – gasoline – a single capacitive discharge required an ignition energy of 0.25 millijoules. For hydrogen gas the ignition energy was 0.02 mJ. Of course, these are different combustible materials than that usually found along a transmission line right-of-way, but do suggest the energy magnitudes that one should anticipate during experiments with dried grass or dried brush ignition by sparks. Laboratory ignition experiments could be carried out for dried organic materials for various spark durations and energy content, and compared with those delivered to the guy wire loop gaps.

7. Experimental Verification of Theoretical Calculations.

The results of theoretical calculations – particularly on questions of electrical safety – will depend on the assumptions of the calculator, and whether he/she has properly

grasped the range of the problem. Subtle errors in understanding or presentation can color conclusions. This makes it prudent to verify theoretical conclusions regarding human safety by experiment. The Electric Power Research Institute, Palo Alto, California maintains a test laboratory in Lenox, Massachusetts which has carried out a lot of live-line and other safety issue testing on full scale line geometries , even including helicopter live line maintenance (Fig. 7-1 below). A Sempra pole could be shipped here, erected and energized with a range of voltages, and all the guy wire and pole voltages measured under various conditions.

8. Guy Wire Electrical Hazards When the Line is Not Energized.

When the line is not energized, stray electrical currents can still exist in the wires and the earth, for example when induced into the line conductors by solar magnetic storms and along the earth's surface, or by power frequency ac network unbalance (zero sequence) currents. These currents are small. If this were a hazard, metal fences around the United States would be dangerous. However, metal fences only become a hazard when they come into direct electrical contact with electric power conductors or when lightning hits the fences or induces severe voltages into fences. Actual measurement can demonstrate this.

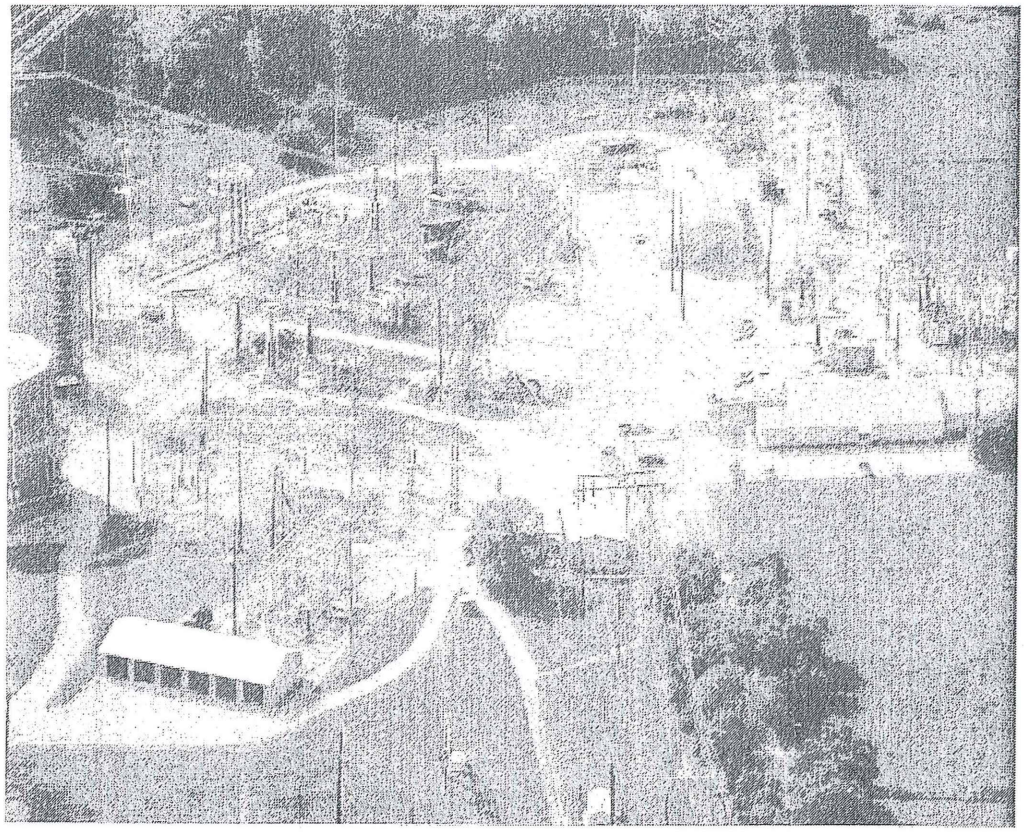

Figure 7-1. The Massachusetts EPRI Laboratory Test Site.

CONCLUSIONS

1. As long as line-to-ground fault current or excessive insulator leakage current does not flow down a pole of this 69 kV line into the guy wire bolt on the pole, voltage induction on the pole guy wires should not be hazardous, being at most a few volts.

2. The voltage drop created between two guy wire anchors 30 feet apart by earth surface currents during line-to-ground fault currents of 2000 amperes was calculated not to be hazardous as long as the fault currents are not flowing down the pole containing the guy wires.

3. It is recommended that all calculations be verified by full-scale test – either at the Massachusetts EPRI laboratory or at another site with capability to do full-scale energization, or on the actual line itself.

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APPENDIX A-1

Voltage and Current Induction in the Guy Wire Loop

1.1 Loop Voltages Induced by Currents in Overhead Conductors

In Figure A 1-1, an unbalance current I sin(ωt) in the line conductors is assumed to be concentrated at some height h_W. This current creates a changing magnetic flux inside the loop formed by the two guy wires and the conducting earth at the base of the pole. Since this is a single turn loop, the total voltage induced in the loop will be from Faraday's Law:

$$V_L = \frac{d\Phi}{dt} \quad \text{.....(A 1-1)}$$

where V_L = total loop voltage, volts

$\frac{d\Phi}{dt}$ = total changing magnetic flux in the loop, webers per second

A changing magnetic flux of one weber per second passing through a loop will induce a voltage of one volt in the loop, and if there is an open connection in a guy wire loop, this voltage will appear across the gap. Figure A 1-1 shows a guy wire loop (pole not shown).

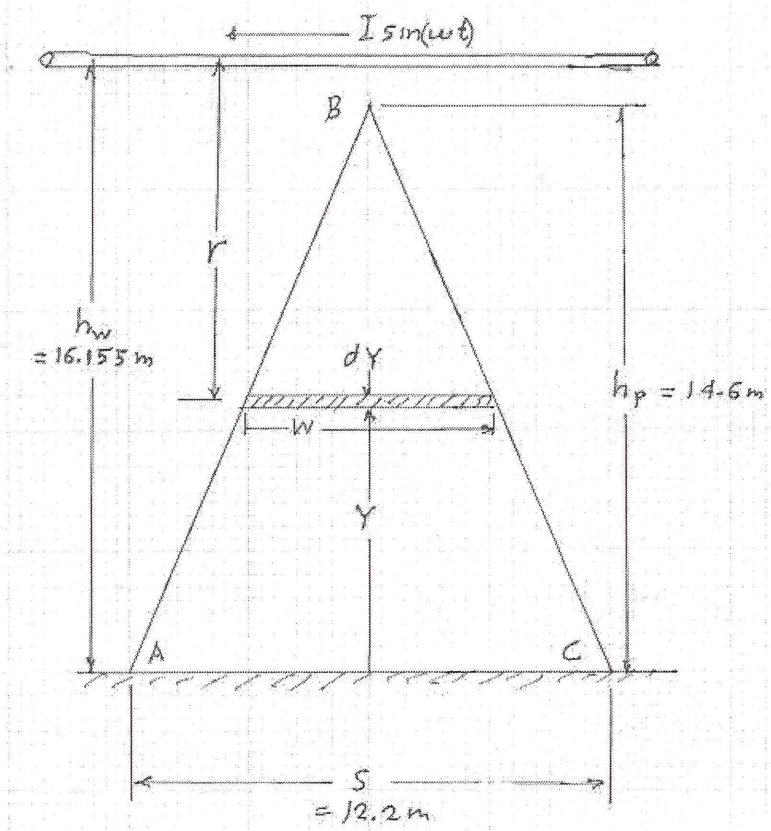

Figure A 1-1. Loop A-B-C formed by Two Guy Wires and the Earth Beneath. There are three sources of magnetic flux that can induce a voltage in the loop: The unbalance current in the wires overhead, the opposite of the unbalance current flowing deep in the earth below, and the resistance drop along the earth created by earth zero-sequence currents, stray power frequency currents and geomagnetically induced currents from solar storms or what have you, and voltages created by leakage currents down the pole from the phases overhead. Some combination of these currents will gang up to induce a changing voltage in the loop which can appear across a loose connection gap, but the stray current contribution should be low and can be measured in a field test..

The magnetic flux contribution by the unbalance currents in the wires overhead that will create a magnetic flux intensity H in the cross-hatched area of length l and thickness dy is – from Ampere's Law:

$$H = \frac{I \sin(\omega t)}{2\pi r} \quad \text{.....(A 1-2)}$$

and $$r = h_W - Y \quad \text{.....(A 1-3)}$$

where r= distance from the overhead wire unbalanced current center to the cross-hatched area.

and since the equivalent magnetic flux density B in the cross-hatched area is :

$$B = \mu H \quad \text{.....(A 1-4)}$$

and $\mu = 4\pi x10^{-7}$ henrys per meter for air. If we multiply the flux density by the cross-hatched area we will obtain the total magnetic flux in the cross-hatched area. The area width W is:

$$W = \frac{S(h_P - Y)}{h_p} \quad \text{.....(A 1-5)}$$

and the flux dΦ in the area of thickness dY then becomes:

$$d\phi = \frac{\mu S(h_P - Y)I\sin(\omega t)}{2\pi h_P(h_W - Y)}dY \quad \text{.....(A 1-6)}$$

We have to integrate A 1-6 from Y=0 to Y=h_P to get the flux φ_{loop} in the entire loop created by the unbalance current in the overhead wires, so:

$$\phi_{loop} = \frac{\mu SI\sin(\omega t)}{2\pi h_p}\int_0^{y=h_p}\frac{h_p - Y}{h_W - Y}dY \quad \text{.....(A 1-7)}$$

and plugging in the numbers (using a height of 53 feet (16.155 meters) for the height of the unbalanced current above the earth (the middle phase):

$$\phi_{loop} = \frac{4\pi x10^{-7}\,x12.2I\sin(377t)}{2\pi(14.6)}\int_0^{14.6}\frac{14.6 - Y}{16.155 - Y}dY$$

or
$$\phi_{loop} = 1.67x10^{-7}\,I\sin(377t)\int_0^{14.6}\frac{14.6 - Y}{16.155 - Y}dY \quad \text{.....(A 1-8)}$$

To do the integration, the general formula for the definite integral is

$\int_0^k \frac{ay+b}{cy+d}dy = \frac{ay}{c} + \frac{bc-ad}{c^2}\log_e|cy+d|$ and in our case a=c=-1, b=14.6 and d=16.155.

Plugging in these values and turning the crank,

$$\phi_{loop} = 1.88x10^{-6}\,I\sin(377t) \quad \text{.....(A 1-9)}$$

Differentiating A 1-9 with respect to time:

$$V_{loop} = \frac{d\phi_{loop}}{dt} = 377x1.88x10^{-6}\,xI\ \cos(\omega t) \quad \text{.....(A 1-10)}$$

and I is the peak unbalance current in amperes. **For a 2000 amp rms unbalanced fault sine wave current, the peak current I is 2828 amperes and V_{loop} becomes 1.95 volts. This is for a standard sine wave. For a rapidly changing line to ground fault or for switching, the dI/dt can change much more rapidly, and the induced voltage could momentarily increase to 10 volts or so.**

The current that can be induced in the loop by this event will be limited by the resistance between the two guy anchors, and this can vary substantially from pole to pole depending on local earth resistivity and the construction of the guy anchors. It is this current magnitude that delivers the coulomb capacity for ignition of any flammable materials. The writer has no data on the moisture content of any right-of-way vegetation for this line or anchor to anchor resistance, and without test data, likelihood of ignition by such low voltages and currents via a loose connection is sheer speculation.

2.1. Voltages Induced in the Loop by Image Currents in the Earth.

Deep within the earth at a depth of several 100 meters for 60 Hz mathematically a set of "image currents" must flow in order to satisfy the voltage and current boundary conditions that must exist at the surface of the earth. These currents are usually assumed equal and opposite to the currents in the overhead conductors. They have not been included in the above calculations since their distances from the guy wires are so large that their contributions to the guy wire voltages will be generally small. The image wire depth is given by:

$$D_e = 658\sqrt{\frac{\rho}{f}} \quad \text{.....(A.2.1)}$$

where D_e = depth of the image wires below the earth's surface, meters
ρ = earth resistivity, ohm-meters
f = frequency of the overhead wire currents, Hz.

Obviously, as fault current rise-time frequencies increase, the image depth decreases and the image currents have more influence. For lightning frequencies, we generally assume that the image currents lie at the same depth beneath the earth as the height of the overhead wires above the earth. The image currents add to the magnetic field passing through the guy wire loop, so they should increase the voltage induction slightly for a power frequency fault current.

John G. Anderson, PE.
June 21, 2008

Appendix 18

Proceeding No.: I.08-11-006
Exhibit No.:
Witness: John Hotta

DIRECT TESTIMONY OF

JOHN HOTTA

SAN DIEGO GAS & ELECTRIC COMPANY

(WITCH FIRE)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA
June 5, 2009

DIRECT TESTIMONY OF
JOHN HOTTA
SAN DIEGO GAS & ELECTRIC COMPANY

Q: Please state your name and title.

A: John Hotta. I am a Construction Supervisor in SDG&E's Transmission Construction and Maintenance Department.

Q: What are your responsibilities as a Construction Supervisor?

A: I direct transmission line crews and sometimes patrolmen in routine and emergency maintenance situations. I also assess and write up maintenance jobs, inspect and assess SDG&E transmission facilities and train SDG&E personnel in SDG&E policies and procedures. I also serve as one of SDG&E's back-up fire coordinators. My detailed qualifications are appended to this testimony.

Q: What is the purpose of your testimony in these proceedings?

A: I was SDG&E's first responder at the Witch Fire site, and I am testifying regarding the events of October 21, 2007 and my observations regarding the TL637 spans at issue.

Q: When did you first learn about the Witch Fire?

A: I first learned about the Witch Fire some time during the early afternoon of October 21, 2007. Earlier that day, I had been told to report to the area of the Southwest Power Link, near the Harris Fire, but as I was leaving my home in Oceanside to travel there, I got a call from Bret Ball, the Transmission Construction and Maintenance Manager at SDG&E, who told me to head to a fire that had ignited in the Santa Ysabel area instead. That fire has been called the Witch Fire.

Q: What did you plan to do when you got to the area of the Witch Fire?

A: Once I arrived at the scene, I planned to contact the SDG&E fire coordinator on scene, Brian Crouch, and to locate the Incident Command Post. Once those things had been accomplished, I planned to try to access the TL637 transmission corridor to assess any damages to SDG&E facilities in the area and get crews dispatched as necessary.

Q: What did you do after you got the call to report to the Witch Fire area?

A: I drove to Santa Ysabel via Highway 76. When I reached the shopping center near the Santa Ysabel substation (where Don's Market is located), I pulled into the parking lot and

contacted Brian Crouch, the SDG&E employee at the Incident Command Post that had been set up in the area. Brian and I talked briefly, and we concluded that I would not be able to get to the Incident Command Post given the direction that the fire was moving. I informed Brian that I intended to try to get into the fire area through the northern entrance to TL637, just south of the Santa Ysabel substation.

Q: What did you do then?

A: I drove to the northern entrance and went through two right-of-way gates on the access road, proceeding toward the smoke. When I got out of my truck to open the second gate, I realized how extreme the weather conditions in the area were. That area is on a ridge, and the winds were blowing so hard that I actually had to brace myself so I would not get knocked down. I have never been in winds like that. The winds were blowing from east to west, and based on my experience, I would estimate that they were in excess of 70 mph. The second gate is near the spans of TL637 at issue. The pole closest to the second gate would be pole Z416679.

Q: At about what time on October 21, 2007 were you at the second gate you have described?

A: I can't remember exactly when I arrived at the second gate, but I believe it was around 3:00 p.m. on October 21, 2007.

Q: Did you make any observations regarding the TL637 conductors at that time?

A: Yes. I noticed as soon as I went through the second gate and saw the spans in the area that the lines were actually being blown out horizontally in a westerly direction. The winds were almost constant at that point, which made the conductors appear to be still but blowing straight out sideways instead of hanging vertically. I did not see any galloping in the lines. The lines would lower a bit after a big gust of wind, but otherwise, they were blowing straight out to the side. I noticed this in all of the spans in the area, not just one span.

Q: What did you do after you went through the second gate?

A: I continued down the access road that runs next to TL637. As I approached the area near pole Z416676, I saw a fire crew on another access road that heads west at that point. I drove down the other access road and spoke with the Cal Fire employee heading up the crew. He

told me that somebody had indicated that there were downed power lines in the area and pointed me towards the spans between poles Z416676 and Z416674. I turned around and went back in that direction. I parked my truck mid-span between poles Z416675 and Z416676 (approximately 300 feet south of pole Z416676) so that I could get out and inspect the area for any downed power lines. It seemed to me that the fire had already gone through the area, but I could still see fire to the south. When I was walking around the area, I ran into three individuals driving in a truck. One of them got out of the truck and told me he was the property owner and that this area was where the fire had started. He told me he had heard a loud explosion in the area. Then he got in his truck and drove away. Around that time, I called Grid Operations at SDG&E's Mission facility to request that TL637 be de-energized for the safety of the firefighters in the area and because the fire was still burning under and around the lines in that area.

Q: Was TL637 de-energized at that time?

A: Yes.

Q: What did you do next?

A: I drove towards the area of pole Z416674 to see if there were any downed power lines. I confirmed that there were no downed lines in the spans between poles Z416674, Z416675 and Z416676. I then attempted to drive to pole Z416674 using the same access road, but I could not get very far because the fire was on the east side of the lines by pole Z416674, and I ran across another fire crew in the area trying to create a fire break. I turned around and headed back to my original parking spot near pole Z416676.

Q: What did you do next?

A: I contacted Grid Operations to report that I had not found any downed power lines in the area. I then attempted to drive back around to the other access road, which goes to pole Z416673 and poles beyond, to see where the fire had gone. I made it almost to pole Z416670 but at that point, it was starting to get dark and I decided to turn around. I think it was approximately 4:30 p.m. at this point, and there is only one road to access the poles, so I had to drive back on the same road to get back to poles Z416675 and Z416676. I went back to my original parking spot

near pole Z416676, got out of my truck and took photographs of the area until it got too dark to do so. I found a rock underneath the lines that I could stand on while I took photographs.

Q: Did you make any other observations while you were out there on October 21, 2007?

A: Yes. I noticed that in the area of the span between poles Z416675 and Z416676, the terrain was burned between TL637 and the access road to the east of TL637, and the terrain east of the access road was not burned. I would estimate that the access road is about 75-100 feet east of the lines. This struck me as odd because, with the winds blowing so hard from east to west, I would have expected that any possible sparking from the power lines would have immediately blown any fire to the west of the lines, not to the east towards the access road. I then noticed fire retardant on both the ground and the wire just south of pole Z416675, where the terrain was burned to the east of the access road. I also noticed as I was taking photographs that the lines seemed to be getting too close to each other as they were blowing in the winds. The lines were de-energized at that point, and I never actually saw them make contact.

Q: Were the winds still high at that point?

A: Yes, the winds were still blowing very hard, and I had to brace myself when I was taking photographs.

Q: What did you do after taking photographs of the area?

A: At that point, it was getting dark, so I told the SDG&E crew that had been dispatched to the area to wait in the shopping center near the Santa Ysabel substation (where I had pulled over when I first arrived). I went back out the way I came – via the access road and the two right-of-way gates. That night, the SDG&E crew and I spent the night in the shopping center parking lot so that we could go to the site the next morning. The winds were still blowing so hard that night that one of the Equipment Operations trucks had a window broken from rocks and dirt being lifted off the ground and thrown into the truck.

Q: Did you go back to the site on October 22, 2007?

A: Yes. I went back with an SDG&E Transmission crew. When I looked at the span between poles Z416675 and Z416676 at that time, I noticed that the top insulator for the conductor

on the west side of pole Z416675 appeared to be twisted towards the north (towards pole Z416676). I also noticed that the conductor on the west side of the span between poles Z416675 and Z416676 looked too low. I contacted Bret Ball (Transmission Construction Manager) to discuss the issue and suggested we install longer insulators and re-sag the span. He told me not to do any construction work at that time because the area was in a possible area of origin per Cal Fire.

Q: What were the winds like when you were at the site on October 22, 2007?

A: The winds were still blowing but not nearly as bad as they were on October 21, 2007.

QUALIFICATIONS

My name is John Hotta. I am employed by San Diego Gas & Electric Company ("SDG&E") as a Construction Supervisor in the Transmission Construction and Maintenance ("TCM") group. My business address is 5488 Overland Avenue, San Diego, California, 92123. As a Construction Supervisor, I direct transmission line crews and sometimes patrolmen in routine maintenance and emergency situations. I also assess and write up maintenance jobs, inspect and assess SDG&E transmission facilities and train SDG&E personnel in SDG&E policies and procedures. I also serve as one of SDG&E's back-up fire coordinators. I have worked at SDG&E since February 1994. Prior to being a Construction Supervisor, I served as a Transmission Lineman, a Transmission Working Foreman for the TCM group, a Contract Administrator for Construction Services, and a Transmission Analyst for Transmission Engineering. From 1987 to 1990, I completed a three-year Lineman apprenticeship at Southern California Edison ("SCE") and remained at SCE until May 1993 as a Lineman, constructing and maintaining its transmission system. I worked outside construction for ELC Electrical Contractors from May 1993 until February 1994, constructing transmission/distribution lines and substations. I have completed Fire Science courses at Los Angeles Harbor College.