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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Implement Electric Utility Wildfire Mitigation Plans Pursuant to Senate Bill 901	Rulemaking 18-10-007 (Filed October 25, 2018)

PROTECT OUR COMMUNITIES FOUNDATION COMMENTS ON WILDFIRE MITIGATION PLANS

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INTRODUCTION

Pursuant to the Scoping Memo issued December 7, 2018, the Protect our Communities Foundation (POC) files these comments on the Wildfire Mitigation Plans ("WMPs").[1] The Commission's intent in requiring the investor-owned utilities ("IOUs") to prepare comprehensive WMPs is to ensure compliance with the directive of Public Utilities Code §8386 that plans include "preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires."[2] POC assesses the deficiencies in SDG&E's WMP in these comments, as well as a few overarching comments on SCE and PG&E Plans. While POC offers comments on some of the technical aspects of the SDG&E Plan, these should not be construed as the only comments or suggestions

[1] R.18-10-007; Assigned Commissioner's Scoping Memo and Ruling (December 7, 2018) (Scoping Memo) at p. 5.
[2] Cal. Public Util. Code § 8386(c)(3).

we would provide given sufficient time for data acquisition and analysis and the opportunity for evidentiary hearings. We are providing these comments to offer suggestions and improvements despite these limitations and constraints. POC is concerned that SDG&E is not utilizing the "fire ignition" and "wire down" event reports required by the Commission as necessary real-world checks to adjust the WMPs to achieve maximum fire mitigation effectiveness and maximum value for ratepayers for the dollars being expended on the various WMP programs. Specifically, the overwhelming majority of SDG&E capital investment is directed at pole, conductor, and fuse replacement projects with no apparent correlation to the causes of actual fire ignition events. POC is also concerned with SDG&E's plan to incentivize the deployment of customer-owned portable generator without any analysis of the potential fire safety hazard of hundreds or thousands of portable generators being fueled and operated outdoors under red flag conditions in the HFTD.

These comments follow the common comment outline agreed upon by the parties during the March 8, 2019 teleconference.

1. Meaning of Plan Approval

CPUC approval of any Wildfire Mitigation Plan (WMP or Plan) should not mean that any new or expanded programs discussed in the Plan are found to be just and reasonable as pertains to Public Utilities Code Section 451. The expedited approval and lack of testimony and evidentiary hearings in this proceeding do not allow for thorough vetting of proposed new and expanded programs. As POC stated in its Motion for Evidentiary Hearings, there are many disputed issues of material facts pertaining to the necessity and reasonableness of proposed actions and programs. These issues must be reviewed more thoroughly for reasonableness in the

utilities' rate cases, using the Commission's established rate case processes of testimony, discovery, evidentiary hearings and briefs. The utilities' performance targets should not be treated as compliance requirements for new programs that have not been addressed and found reasonable in a rate case. Pursuant to Section 8386(e), the utilities will be able to track the costs of these new programs for potential future recovery in a rate case. Public Utilities Code Sections 451 and 8386(g) reserve the issue of the reasonableness of rate recovery for programs described in the WMPs to the utilities' rate cases.

2. Overall Objectives and Strategies

The SDG&E Plan is deficient in its failure to: 1) review the causes of ignition of actual recent fires in its service territory, and 2) how the proposed mitigation measures will eliminate these causes of ignition in the future. The Plan describes the number of fires caused by SDG&E equipment in 2017-2018. However, there is no linkage provided between the actions proposed to mitigate fire risk and the fires that are occurring. SDG&E registered 23 reportable fires in 2017 and 26 reportable fires in 2018.[3] SDG&E registered 47 wire-down events in the HFTD in 2017 and 41 wire-down events in the HFTD in 2018.[4] Yet no incident reports,[5] required by D.14-02-015,[6] are included with the Plan. The incident reporting requirements are extensive and identify

[3] SDG&E Wildfire Mitigation Plan ("Plan") at p. 80.
[4] Ibid, p. 81.
[5] D.14-02-015 *Decision Adopting Regulations to Reduce the Fire Hazards Associated with Overhead Electric Utility Facilities and Aerial Communications Facilities* (March 10, 2014), Appendix C: Fire Incident Data Collection Plan, at p. C-3. Fire-related reporting requirements should be limited to events that meet the following criteria. For the purposes of the Data Collection Proposal, a reportable event is any event where utility facilities are associated with the following conditions:
(a) A self-propagating fire of material other than electrical and/or communication facilities, and
(b) The resulting fire traveled greater than one linear meter from the ignition point, and
(c) The utility has knowledge that the fire occurred.
[6] D.14-02-015 at p. 2 ("This decision also approves a consensus plan for investor-owned electric utilities (IOUs) to report fire incidents to the Commission's Safety and Enforcement Division (SED), and for SED

the suspected cause of the ignition event or wire-down event.[7] There is no summary of the principal causes of the fires or the wire-down events in the Plan.[8]

The incident reports, or a detailed summary of the principal causes documented in the incident reports,[9] would allow decisionmakers to assess if the fire mitigation strategies being employed are effective in addressing the principal causes of reportable fires and wire-down events.[10] The fundamental purpose of the mitigation measures in the Plan should be to steadily reduce the number of IOU-caused fires and wire-down events year-to-year. It is apparent, from the limited information included by SDG&E on the number and size of the SDG&E-caused fires in 2017 and 2018, the number and maximum size of the fires increased from 2017 to 2018.[11]

SDG&E is explicit in its March 12, 2019 data response to POC that "SDG&E has not performed historical root cause analysis of its CPUC reportable ignitions."[12] This response is

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to use this data to identify systemic fire-safety risks and develop measures to mitigate the fire-safety risks.").

[7] Ibid, *Appendix C: Fire Incident Data Collection Plan*. *See* **Attachment A**.

[8] SDG&E did ultimately provide a summary of its 2015-2017 reportable ignition events, three business days before these comments were due, in response to TURN Data Request: TURN-SDG&E-04.

[9] D.14-02-015 neither mandates that the incident reports be classified as confidential or preclude them from being classified as confidential. *See* p. 84, footnote 54 ("Any non-confidential data submitted by a utility pursuant to Fire Data Plan will, by definition, be available to the public pursuant to the California Public Records Act (Cal. Gov't Code § 6250 et seq.)).")

[10] D.14-02-015 at pp. 81-82 ("The collection and reporting of comprehensive data on power-line fire incidents is a prerequisite for any serious program of sustained fire-safety improvement. By collecting data on even minor fires, it may be possible for electric utilities and the Commission to identify and eliminate common failure mechanisms and thereby reduce the risk of fires igniting in hazardous conditions. Any reduction in the ignition of power-line fires during hazardous conditions would have a significant positive impact on public safety. The same data may also be used to assess the effectiveness of fire-prevention measures, including those measures adopted in this proceeding, for the purpose of determining if such measures should be continued, modified, or eliminated.").

[11] Plan at pp. 80-81 ("In 2017, there were 23 reportable fires in SDG&E's service territory that met the D.14-02-015 definition. Of these 23, 7 were contained to less than 10 acres and the remaining 16 were contained to less than one quarter of an acre. In 2018, there were a total of 26 reportable fires, all of which were contained to less than 100 acres, 24 of the 26 were contained to less than 10 acres, and 21 of the 26 contained to less than 0.25 acres.").

[12] R.18-10-007, POC Data Request: POC-Sdg&E-01– Sb901 Wildfire Mitigation Plan OIR SDG&E Response 1, Date Received: March 7, 2019, Date Submitted: March 12, 2019.

inaccurate. All three IOUs have been required to identify the cause of CPUC reportable ignitions since 2014.[13] SDG&E also provided a summary of a subset of the information requested by POC, which SDG&E identifies as "the drivers of all ignitions in 2015-2017" in its March 8, 2019 data response to TURN data request TURN-SDG&E-04.[14] The erroneous SDG&E response to POC's data request has prevented POC from realizing a comprehensive understanding, even in summary fashion, of the broad categories of ignition events that occurred in 2017 and 2018 in the SDG&E HFTD.

Understanding the primary causes of actual IOU-caused fires is essential to assessing the merits of the proposed mitigation strategies. Over 90 percent of the 2019 direct capital expenditures in SDG&E's program budget for "Wildfire Mitigation Strategies and Programs" is dedicated to replacing wood poles with steel poles and retrofitting with heavier conductors.[15] However, there is no analysis of actual recent ignition events to determine whether wooden poles or conductor weight had anything to do with: 1) actual ignition events, or 2) the severity of the ignition event if it did occur.

The result is major capital investments in infrastructure upgrades that may result in little or no fire safety improvement. For example, the SDG&E $680 million wood-to-steel pole replacement project in Cleveland National Forest is a case in point of a project that "fixes" a

[13] D.14-02-015, Appendix C at p. C-5 and p. C-6 (reporting requirements). **Equipment Involved With Ignition**: The equipment that supplied the heat that ignited the reported fire; **Type**: The equipment involved in the event (overhead, padmounted or subsurface); **Suspected Initiating Event**: The suspected initiating event based on initial field observations; **Contact From Object**: The first object that contacted the Communication or Electric Facilities (Only to be used if "Contact from Object" is selected as Suspected Initiating Event); **Facility Contacted**: The first facility that was contacted by an outside object (Only to be used if "Contact from Object" is selected as Suspected Initiating Event); **Contributing Factor**: Factors that contributed to the ignition.

[14] R.18-10-007, Turn Data Request: Turn-SDG&E 04– SB901 Wildfire Mitigation Plan OIR SDG&E Response 1, Date Received: March 5, 2019, Date Submitted: March 8, 2019.

[15] Plan, Appendix B.

piece of hardware – wooden poles – that is not a source of fire ignition.[16] SDG&E proposed the project as a mitigation strategy in the wake of the disastrous 2007 fires that were initiated by SDG&E equipment.[17] However, SDG&E's wooden poles did not cause any of the 2007 fires.[18] The overwhelming majority of the wooden poles were also in very good condition.[19] It is POC's position that SDG&E took advantage of generalized fears of fire danger in the HFTD, as well as a layperson's common understanding that "wood burns and steel doesn't," to push through a major capital pole replacement project that will do little – based on the change in materials of construction – to mitigate fire danger in the HFTD.[20]

POC is concerned that high cost measures adopted by SDG&E, with little or no independent scrutiny of the fire mitigation value of such measures, will now be adopted by PG&E and SCE solely based on the fact that SDG&E was authorized by the Commission to proceed. POC is also concerned that the IOUs will push through other unnecessary and expensive infrastructure projects without adequate scrutiny given the expedited timeline for this

[16] *See* SDG&E, San Diego Gas & Electric Company 2016 Form 10-K Annual Report (filed February 28, 2017) at pdf p. 364 (Cleveland National Forest (CNF) Transmission Projects estimated cost = $680 million).
[17] A.12-10-009, Protest by the Division of Ratepayer Advocates of the San Diego Gas and Electric Company's Application for a Permit to Construct the Cleveland National Forest Power Line Replacement Projects, November 26, 2012, at p. 5 ("Specifically, the Witch, Guejito, and Rice fires of 2007 were caused by high winds and power lines contacting vegetation, as follows: Key findings indicate that winds in the vicinity of the fire area peaked at velocities approaching 50 miles per hour (MPH). In each case the fires started when the lines came in contact with each other, vegetation, or other wires, causing sparks that ignited dry vegetation.").
[18] Ibid.
[19] A.12-10-009, POC Opening Testimony (September 16, 2015) at pp. 13-14.
[20] A.12-10-009, Protest by the Division of Ratepayer Advocates of the San Diego Gas and Electric Company's Application for a Permit to Construct the Cleveland National Forest Power Line Replacement Projects (November 26, 2012) at p. 6 ("The Application has failed to justify as reasonable the CNF Projects. Less costly and equally as effective alternatives than the CNF Projects are available and already required by State and Federal administrative agencies. SDG&E should implement fully and completely these more cost-effective options before burdening the ratepayers with half-a-billion dollars of costs.").

proceeding. SB 901 explicitly allows the Commission to modify the plans.[21] New and/or accelerated programs and actions included in the WMPs that have not been tested and proven effective should not be approved.

3. Risk Analysis and Risk Drivers

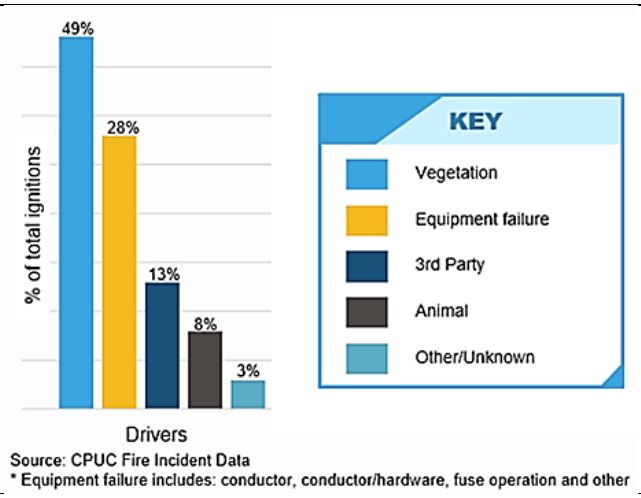
3.1 Analysis of Ignition Events Necessary to Validate Wildfire Mitigation Plan

POC reiterates here the importance of analyzing primary causes of recent fires and wire down events, in order to focus mitigation on high value actions. An analysis of the potential fire hazard of incentivizing customer portable gen set operation under red flag conditions is also necessary.

SDG&E's Plan fails to analyze or even report specific causes of 2017 and 2018 fire ignition events. This data is necessary to understand which mitigation actions should be made a priority. In contrast, the PG&E Plan includes detailed CPUC Reportable Ignition Data for its HFTD areas collected from January 1, 2015 through December 31, 2017. The table categorizing the causes of the 2015-2017 ignition events in PG&E HFTD areas is shown in Table 1.[22] About 80 percent of the ignition events were caused by electrified PG&E equipment coming into contact with vegetation or PG&E equipment failures.

Figure 1. 2015-2017 Drivers for PG&E Fire Incidents in HFTD Tiers 2 and 3, and Zone 1

[21] Cal. Public Util. Code § 8386(b) ("Prior to approval, the commission may require modification of the plans.").
[22] PG&E Plan, Figure 5 at p. 27.



This data is critical for understanding where resources need to be focused to reduce fire danger. For example, SDG&E notes that four of the fires in the HFTD were caused by Mylar balloons in the 2015-2017 period.[23] SDG&E also notes that if the territory is expanded to include non-HFTD, the number increases to twelve fires caused by Mylar balloons. PG&E and SCE also identify ignition events caused by Mylar balloons in their respective WMPs. As discussed at the February 13, 2019 WMP workshop, a legislative ban on Mylar balloons would be an effective and low or no cost measure to mitigate this significant source of ignition. However, SDG&E does not include any discussion of this mitigation measure in its Plan and has not taken any action this legislative session to move forward with such action.

Another example is the SDG&E's new expulsion fuse replacement program. SDG&E projects it will incur approximately $10 million per year in capital expense on this program in 2019 and 2020.[24] Yet in the 2015-2017 period SDG&E experienced no ignition events related to fuses.[25] Based on this limited ignition event data set, expulsion fuses have not been a fire hazard.

[23] R.18-10-007, Turn Data Request, Turn-SDG&E-04– SB901 Wildfire Mitigation Plan OIR SDG&E Response 1, Date Received: March 5, 2019, Date Submitted: March 8, 2019.
[24] SDG&E Plan at p. A-24.
[25] R.18-10-007, Turn-SDG&E-04– SB901 Wildfire Mitigation Plan OIR SDG&E Response 1, Date Received: March 5, 2019, Date Submitted: March 8, 2019.

This $10 million per year capital expense may be better spent bringing existing wooden pole cross-arm conductor spacing up to current GO 95 spacing requirements, for example, or greatly expanding the frequency of SDG&E's manual patrols of HFTD transmission and distribution right-of-ways to catch potential fire hazards in a timely manner.

SDG&E equipment that is capable of causing fire ignition should not be "run to failure" in the HFTD. The reportable ignition event reports should contain information on the age of the SDG&E equipment that initiated a fire when it failed. If a correlation between equipment age and failure is apparent, that would be a factual basis to put this type of equipment, pole-mounted transformers for example, on accelerated preventive replacement schedules in the HFTD to assure new equipment is in place long before equipment failure due to age is a significant possibility.

Pursuant to D.16-08-018, IOUs are required in their Risk Assessment Mitigation Phase (RAMP) reports to "explicitly include a calculation of risk reduction and a ranking of mitigations based on risk reduction per dollar spent."[26] SDG&E references its RAMP and its Risk Spend Efficiency (RSE) in its WMP and notes that many of the identified programs will be expanded or accelerated.[27] However, these calculations fail to adequately address the root causes of recent fires and wires-down events. As noted, the bulk of spending allocations is to system hardening through replacement of poles and conductors.[28] The fire mitigation value of these expenditures has not been proven and thus are lacking necessary data to be included in the RSE.

3.2 Potential Fire Hazard of Incentivizing Customer Gen-Set Operation Under Red Flag Conditions Must Be Evaluated

[26] D.16-08-018 Ordering Paragraph 8.
[27] Plan at pp. A-22 to A-23.
[28] Ibid at pp. A-22 to A-A23.

POC is concerned that the safety objective of the fire mitigation measures that SDG&E describes in the Plan may be undone by SDG&E incentivizing the use of hundreds or thousands of new potential ignition sources under red flag conditions in the HFTP. SDG&E states:[29]

> SDG&E has also received feedback from residential customers impacted by PSPS events that the desire to obtain smaller generators for their homes but do not possess the financial capability to acquire one. Therefore, SDG&E is considering the potential of the creation of a Generator Grant Program (GGP), administered by a neutral third party, to grant residential customers the funding for the express need to acquire and be able to use a portable generator during outages, in particular PSPS events. . . This program is currently in the conceptual phase and carries with it the need to identify all aspects of cost recovery.

There is no mention in the Plan of customer-owned solar and batteries, as a superior alternative to portable generators from a fire safety perspective. These systems eliminate the fire danger from frequent refueling and operation of portable generators. Residential customer-owned solar and battery systems are now being deployed in SDG&E service territory, with no upfront financing, at lower cost than SDG&E grid power.[30,31]

The overarching fire safety benefit of this approach is that it would seamlessly back-up impacted customers, with no work required of the customer under difficult, extreme fire hazard conditions to switch to the back-up system, and with no potential for creating new ignition sources under red flag fire conditions. There is no need for SDG&E to establish a ratepayer-funded grant program for portable generators when a far safer alternative, customer-owned solar and batteries, is cost-effective and available from multiple local suppliers. However, those impacted customers with limited financial capability may not have sufficient credit to qualify for

[29] Plan at p. 58.
[30] E-mail communication from N. Wyeth, Director Grid Services Sunrun Inc., to B. Powers, Powers Engineering (March 13, 2019).
[31] E-mail communication from T. Hammond, Sullivan Solar Power to B. Powers, Powers Engineering (March 13, 2019).

no upfront financing of these solar and battery systems without external financial support. A low interest loan program supported by SDG&E, or a limited expansion of SDG&E's on-bill financing program to include impacted customers in the HFTD for the expressed purpose of financing customer-sited solar and battery systems in the HFTD, would assure all impacted customers can add solar and batteries regardless of financial means.

SDG&E admits it has not conducted or referenced any studies regarding the fire safety risk of hundreds or thousands of customer-owned/operated gasoline fueled emergency gen-sets being started and operated by customers under red flag conditions in HFTDs.[32] The operation of hundreds or thousands of portable generators under extreme fire conditions, by customers with widely varying skill levels fueling and operating portable generators under extreme fire conditions, is problematic.

4. Wildfire Prevention Strategy and Programs

4.1 Inspection Plan

POC is concerned that no summary of the findings of SDG&E's recent enhanced field inspections is included in the Plan as a point of reference for the fire mitigation measures included in the Plan. SDG&E states:[33]

> Over the years, SDG&E has enhanced its system-management programs. Inspection and repair of SDG&E's electric system have particularly intensified in the HFTD, with CPUC mandated annual patrols in the HFTD Tier 3.

[32] R.18-10-007, POC Data Request: POC-SDG&E-01– SB901 Wildfire Mitigation Plan OIR SDG&E Response 2, Date Received: March 7, 2019, Date Submitted: March 12, 2019.
[33] Plan at p. 27.

Yet no summary or any other information on the results of the 2017 and 2018 annual field inspections is included in the Plan. A similar deficiency is the lack of information on the results of the detailed inspections that occur every 3-5 years. SDG&E states:[34]

> In addition to the patrols, utilities must conduct detailed inspections at a minimum every 3-5 years, depending on the type of equipment. For detailed inspections, the utilities' records must specify the condition of inspected equipment, any problems found, and a schedule date for corrective action.

SDG&E is explicit that the detailed inspections must specify the condition of the inspected equipment, any problems found, and a schedule date for corrective action. However, there is no information in the Plan that summarizes the results of these inspections. As a result, there is no corroborating information in the Plan to inform decisionmakers whether the fire mitigation measures are properly directed or need adjustment.

It is not clear whether these equipment inspections are performed by contractors or employees, as SDG&E notes later in the Plan it is the former who perform vegetation inspection. SDG&E should not rely exclusively on contractors for tasks that, if done inadequately, could have catastrophic impacts on customers, the environment, and the bottom line. SDG&E should utilize its own employees to walk the lines regularly, preferably employees that live in the HFTD, rather than contractors.

Patrol inspection should be increased from annually to monthly prior to and during high fire threat months. Field inspectors should walk the transmission and distribution lines to ensure that every foot of transmission and distribution lines in the HFTD are inspected. Frequent manual inspections is the best method available to assure vegetation growth and/or dying trees do not create fire hazards. SDG&E currently has 4,495 miles of transmission and distribution

[34] Plan at p. 25.

lines within the HFTD.[35] With about 25 field inspectors walking the lines, SDG&E could manually inspect every foot of its impacted transmission and distribution lines every month.[36]

4.2 Backup Power for Resilience

Investments in infrastructure to provide power to strategic locations during PSPS events should focus on solar and battery systems that avoid: 1) adding new potential fire ignition sources, and 2) need for frequent and hazardous refueling operations under red flag warning conditions.

4.3 Overhead Transmission and Distribution Fire Hardening

PG&E (pp. 64-65), SDG&E (pp. 32-33) and SCE (pp. 53-54) all include plans to replace wood poles with steel or composite poles in the WMPs at considerable cost. The IOUs claim that these replacements will improve resiliency as the new poles have more reliable material attributes. POC disputes this claim and suggests that these costly infrastructure projects do not show clear benefits and may actually make fire evacuations more difficult if the new poles are more difficult to clear from blocking ingress or egress during fire events. No factual evidence has been presented to establish whether wood pole replacement clearly reduces wildfire risks and whether the costs of such replacement programs are justified. The Division of Ratepayer Advocates (DRA) made this same point in its November 26, 2012 protest of SDG&E's plan to

[35] R.18-10-007, Turn Data Request: TURN-SDG&E 01– SB901 Wildfire Mitigation Plan OIR SDG&E Response 1, Date Received: Nov 30, 2018, Date Submitted: Dec. 7, 2018.
[36] Calculation of number of transmission and distribution line inspectors needed: 4,500 miles ÷ 200 miles per month per inspector (20 day per month x 10 mi/day) = 22.5 field inspectors to manually inspect entire 4,500 miles of transmission and distribution lines every month, covering 10 miles of line length per working day.

spend in the range of a half a billion dollars on pole replacement in the Cleveland National Forest.[37]

Available data does not support a conclusion that distribution poles of galvanized steel or composites will resist wildfires any better than those of preserved wood.[38] Indeed, data regarding steel strength firmly indicate that if portions of steel utility poles reach temperatures above 500C (932F), they will likely be unable to support design loads.[39] Under conditions optimal for wildfire propagation, fire temperatures ranging from 500 C (932 F) to over 1,200 C (2,192 F) within the leading fire front and for a while after the front has passed will exist.[40]

Evaluation of data regarding wildfire characteristics and the properties of galvanized steel does not support a conclusion that steel poles will perform better than preserved wood. The Commission should require the IOUs to substantiate with evidence that replacing wood poles prematurely with steel poles is not just an expensive expenditure of ratepayer monies that will have no significant impact on reducing fire risks.

SDG&E claims that steel poles are a more reliable construction material. However, no factual evidence has been presented to support this conclusion. As POC stated in its Motion for Evidentiary Hearings, there is no evidence that steel poles provide greater fire safety. The three 2007 fires in SDG&E territory were caused by SDG&E failure to maintain adequate clearance

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[37] A.12-10-009, Protest by the Division of Ratepayer Advocates of the San Diego Gas and Electric Company's Application for a Permit to Construct the Cleveland National Forest Power Line Replacement Projects, November 26, 2012. See **Attachment B**.

[38] S. Smith, *The Performance of Distribution Utility Poles in Wildland Fire Hazard Areas: North American Wood Pole Council Technical Bulletin* (2014), available at https://woodpoles.org/portals/2/documents/TB_PolesInWildfires.pdf.

[39] R. Tide, *Integrity of Structural Steel After," American Institute of Steel Construction, Inc., Chicago, IL, Technical report* (1998), available at http://www.aisc.org/store/p-946-integrity-of-structural-steel-after-exposure-to-fire.aspx.

[40] American Galvanizers Association, *In Extreme Temperature* (2013), available at http://www.galvanizeit.org/about-hot-dip-galvanizing/how-long-does-hdg-last/in-extreme-temperatures.

between combustible vegetation and the power lines, and by inadequate conductor spacing, not by wooden poles.

In A.12-10-009, the DRA protested SDG&E's application for a permit to construct the Cleveland National Forest power line replacement projects. The DRA found that SDG&E failed to justify as reasonable the proposed spending, which ultimately reached an estimated cost of $680 million,[41] on this wood-to-steel conversion project.

SDG&E's Cleveland National Forest wood-to-steel pole replacement project is an example of a very costly measure that may have little fire mitigation benefit. This was addressed by POC in its November 2015 opening brief in A.12-10-009:[42]

> POC agrees with the goal of reducing fire hazards and improving reliability. Indeed, it is for exactly that reason that POC proposed the development of a record on project alternatives. Less expensive and more effective options for improving fire safety and system reliability exist, among them, improved vegetation management, undergrounding, compliance with GO 95 requirements for conductor spacing, and the use of micro-grids. The Commission does not have a record to assess the efficacy of such alternatives because the (wood-to-steel pole) EIR rejects them on the basis of SDG&E's claims regarding safety and reliability, claims that were not subject to independent analysis or scrutiny. SDG&E's direct testimony does not provide any technical evidence establishing the asserted benefits of the project and intervenors were not permitted to address them because the ALJ struck testimony on those topics.
>
> One striking example of how alternatives were addressed is the EIR's treatment of conductor spacing and vegetation management for mitigating fire hazards. Although the EIR appears to find that improvements in these areas would be a superior alternative to the project, they are dismissed on the basis of SDG&E's claims regarding the fire risks associated with conductor-to-conductor contact. The EIR does not consider whether this risk could be mitigated with improved conductor spacing on existing poles, although the poles have been "grandfathered" and therefore excused from compliance with current GO 95 spacing standards and SDG&E's witnesses could not verify that the existing poles in the proposed project area are in conformance with current GO 95

[41] *See* SDG&E, *San Diego Gas & Electric Company 2016 Form 10-K Annual Report* (filed February 28, 2017) at pdf p. 364, Cleveland National Forest (CNF) Transmission Projects estimated cost = $680 million.

[42] A.12-10-009, POC Opening Testimony at p. 10.

> conductor spacing standards.[43] This is a troubling admission given SDG&E's proposal to invest more than $400 million in pursuit of fire safety and the testimony of its safety expert that conductor spacing is an important way to mitigate fire hazards.

SDG&E provided evidence in A.12-10-009 that the wooden poles themselves were not a source of ignition:[44]

> In a March 2015 data response to POC, SDG&E states that "there are no recent examples of a wooden pole itself failing and leading to an ignition that spread to non-utility objects." SDG&E has not shown how any of the cause agents of recent major fires in the CNF will be altered by converting wooden poles to steel poles with more conductor spacing and heavier conductors, or why greater attention to vegetation management will not completely resolve the real fire hazard potential.

POC described in its September 2015 opening testimony in A.12-10-009 that the wooden poles that SDG&E proposed to replace with steel poles were in good physical condition, based on data SDG&E providing in response to a POC data request, noting that:[45,46]

> The existing 69 kV wooden pole line segments in the scope of the project are, with the exception of line segment TL682, in good physical condition and are not experiencing substantial pest infestation or rot as shown in Table 1. TL682 is geographically distant from the other interconnected 69 kV line segments included in the project.
>
> The percentage of existing 69 kV poles in need of replacement due to pest infestation or rot, when line segment TL682 is excluded from the total, is substantially less than 1.0 percent. Thus, no maintenance or reliability need or reason exists to replace these poles.

However, the replacement steel poles in A.12-10-009 did include wider spacing of the conductors to avoid the possibility of "conductor slap,"[47] and resultant sparking, under high wind

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[43] A.12-10-009, Reporter's Transcript (October 12, 2015) at pp. 98 – 103. See **Attachment C**.
[44] A.12-10-009, POC Opening Testimony at p. 10.
[45] *Ibid.* at p. 11. Total number of 69 kV poles = 1,384. Number in poor condition = 38. Subset of number in poor condition on one line segment (TL682) geographically distant from other interconnected line segments = 30.
[46] A.12-10-009, POC-3 Exhibit to opening testimony (SDG&E response to DR).
[47] Conductor slap = adjacent conductors hanging from the same horizontal cross-arm coming into contact with each other.

conditions. Conductor slap was the cause of ignition of one of the 2007 fires.[48] Eliminating the potential for conductor slap is a substantive mitigation step. It does not require replacement of the entire pole. It requires only a simple retrofit of the wooden cross-arm (from which the conductors hang) on the existing wooden poles with a cross-arm that affords sufficient spacing between the conductors to prevent conductor slap.

SDG&E indicates it has replaced 19 percent of the wooden poles in the HFTD with steel poles, and that some number of additional poles will be replaced before the project is completed.[49] This means that the overwhelming majority of poles in the HFTD are wooden poles. As a result, a primary focus of the fire mitigation effort should be assuring that the existing wooden pole cross-arms are, where necessary, retrofit to assure sufficient clearance to eliminate the danger of conductor-to-conductor contact under high wind conditions.

4.4 Vegetation Management - Enhanced Inspections, Patrols and Trimming

SDG&E indicates that it relies exclusively or primarily on contractors for vegetation management activities:[50]

> SDG&E has historically utilized a contractor workforce to perform the vegetation management program activities of tree pre-inspection, tree pruning and removal, pole brushing, and quality assurance.

SDG&E provides no information on why it relies on contractors to carry-out what, if performed inadequately, has potentially catastrophic implications for impacted customers in the HFTD, and for SDG&E's financial performance as resources are used to pay fire claims. SDG&E provides no information on why contractors are used instead of employees for this

[48] *See* **Attachment B** at p. 5.
[49] Plan at p. 33 ("To date, SDGE has hardened 19% of the HFTD by installing over 15,000 new steel poles and plans on further investment to continue these efforts.").
[50] Plan at p. 42.

function, or whether the contractors have performed as well as full-time employees would be expected to do.

SDG&E also indicates that a certified arborist visits each tree on an annual cycle.[51] There is no analysis in the Plan of recent SDG&E-caused fire ignition events to determine if this schedule is sufficient to assure that vegetation encroachment has been eliminated as a fire risk factor in SDG&E service territory. As noted, SDG&E could manually inspect every foot of transmission and distribution right-of-way in the HFTD on a frequent basis, on the order of once a month, with only a handful of field staff walking a moderate number of right-of-way miles every working day. This approach would be low cost. Any incipient vegetative encroachment would be identified and addressed long before it would create potential for contact with a live conductor.

SDG&E indicates that in some situations it may be difficult to trim back 12 feet, much less 25 feet:[52]

> Where prudent and achievable, SDG&E's contract tree crews prune vegetation back to 12 feet (or more) in alignment with the CPUC GO 95, Rule 35, Appendix E guidelines.

Despite the challenges of achieving a uniform pruning back to 12 feet, SDG&E now proposes to trim back to 25 feet to improve fire mitigation:[53]

> SDG&E's tree trim scope will be increased to achieve a 25 feet clearance post-trim within the HFTD where feasible between trees and electric facilities. This is a significant increase over the average 12 feet of clearance that SDG&E currently achieves post-trim. There may be some barriers to achieving this goal. Environmental agencies, land agencies, and customers may oppose the tree pruning at this new clearance level, however, SDG&E hopes to work through these issues to achieve the desired wildfire risk mitigation.

[51] Plan at p. 42.
[52] Plan at p. 42.
[53] Plan at p. 43.

SDG&E is correct to observe that this aggressive pruning may meet with strong opposition, for the negative impact on the forest and wildlife and the vistas that many of the impacted customers choose to live in the HFTD to experience. This is yet another reason to assure impacted customers are equipped with solar and batteries so that SDG&E can de-energize selected conductors as needed without negatively affecting these same customers.

POC recommends that effort be focused on more rigorous patrolling and inspection in the transmission and distribution rights-of-way in the HFTD than excessive pruning of trees from 12 feet to 25 feet. The Commission needs more independent auditors, working for the Commission, in the field patrolling and inspecting to ensure SDG&E and the other IOUs are rigorously following their WMPs.

The millions per year that SDG&E will spend on expulsion fuse replacement, or proposed portable generator incentive programs, could and should be directed to regular independent auditing by Commission staff of vegetation management practices and equipment condition.[54] Most people rarely violate traffic laws out of concern there is a possibility that they may be ticketed by a police officer. For little money, less than $1 million per year, the Commission could maintain a field inspection staff of 3-5 people to perform unannounced

[54] SDG&E has actually barred Commission staff from inspecting fire ignition sources in the past. *See:* Petition 07-11-007, *Report of the (CPUC) Consumer Protection and Safety Division Regarding the Guejito, Witch and Rice Fires* (September 2, 2008) at pdf p. 9 ("On November 6, 2007, I (CPSD Inspector M. Intably) contacted an official of SDG&E and requested that he arrange an inspection at the site of the Guejito Fire, and interviews of the SDG&E personnel who witnessed the fire. The SDG&E official informed me that another representative from SDG&E would meet with me at the site of the fire and show me the SDG&E facilities that were involved. The SDG&E official also informed me that I would not be allowed to interview SDG&E personnel because SDG&E had not yet completed its investigation. He instructed me to contact SDG&E's attorneys to determine when CPSD staff would be allowed to interview SDG&E personnel."; pdf p. 23 referencing the Rice Fire source of ignition – "CPSD also believes that SDG&E's unwillingness to provide immediate access to witnesses and evidence prevented CPSD from conducting a more timely investigation.").

inspections of 10 percent of SDG&E's transmission and distribution lines in the HFTD per month (for example). SDG&E would be subject to fines for out-of-compliance conditions, and the fines would be rolled-back into fire safety activities.

4.5 Public Safety Power Shutoff Protocols

SDG&E proposes the creation of a generator grant program.[55] SDG&E fails to evaluate the potential fire hazard of hundreds or thousands of customers starting gasoline-fueled back-up generators outside under high wind, red flag conditions in the HFTD. SDG&E and other IOUs should instead focus on a renewable technologies grant program.

4.6 Alternative Technology – Distributed Solar with Battery Storage

There is no discussion of distributed solar and battery storage and use of microgrids as mitigation measures in the SDG&E Plan. This technology could be deployed in 2019 to effectively mitigate the risk of catastrophic wildfire by reducing the load on stressed transmission and distribution lines and associated hardware during high fire threat days. This technology is effective not just during PSPS events, but also during high fire threat situations when reducing the load would tend to reduce the potential for sparking and arcing on the lines.

To ensure that the WMPs comply with the directive of Section 8386 that plans must include "preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfires" and "to ensure its system will achieve the highest level of safety, reliability, and resilience," the WMPs must evaluate the feasibility of these alternative technologies.[56] The WMPs do not include

[55] Plan at p. 58.
[56] Pub. Util. Code § 8386 subd. (c)(3) and (c)(12).

consideration of alternative technologies such as customer solar and battery storage as preventative strategies. Preventative strategies to minimize the risk of electrical lines and equipment causing catastrophic wildfires should include the use of distributed resource and microgrids.[57] Distributed generation resources and microgrids can be used to provide electricity to communities without the need for operational transmission and distribution lines during PSPS events and thus serve to decrease risk of catastrophic wildfire under high fire hazard conditions. These resources minimize the impact of power shut-off events by providing localized electricity even as transmission and/or distribution lines are shut off.[58]

Mitigating wildfires must entail mitigating climate change. Strategies that address both should be favored. Strategies that exacerbate climate change should be disfavored. Each of the proposed strategies in the Plans should be required to undergo a Greenhouse Gas (GHG) emissions analysis.

5. Emergency Preparedness, Outreach and Response

Critical infrastructure identified in the Plans such as fire stations and Community Resource Centers should be powered by renewable sources such as rooftop solar with battery storage. SDGE's Plan presumes impacted customers will rely on portable back-up generators.[59]

6. Performance Metrics and Monitoring

There is no linkage provided in the SDG&E Plan between the actions proposed to mitigate fire risk and the fires caused by SDG&E equipment in 2017-2018.[60] This is a

[57] *See* Pub. Util. Code § 8386, subd. (c)(3).
[58] *See* California Energy Commission, Tracking Progress Report (August, 2018) at pp. 3-4; Pub. Util Code, § 8386, subd. (c)(6).
[59] Plan at p. 63.
[60] D.14-02-015, Appendix C: Fire Incident Data Collection Plan, at p. C-3. Fire-related reporting requirements should be limited to events that meet the following criteria. For the purposes of the Data

deficiency in the Plan. SDG&E registered 23 reportable fires in 2017 and 26 reportable fires in 2018.[61] SDG&E registered 47 wire-down events in the HFTD in 2017 and 41 wire-down events in the HFTD in 2018.[62] Yet no incident reports are included in the Plan that would allow the Commission to assess if the proposed fire mitigation strategies are coherent with the principal causes of reportable fires and wire-down events. The fundamental purpose of the Plan should be to steadily reduce the number of IOU-caused fires and wire-down events year-to-year.

Understanding the primary causes of actual IOU-caused fires is essential to assessing the merits of the proposed mitigation strategies, monitoring the success of mitigation measures, and adjusting the mitigation measures as needed to maximize effectiveness.

6.1 Inspection Plan

Inspection rates should be increased to monthly prior to and during high fire threat months. Commission field staff should independently audit the effectiveness of vegetation management and equipment hazard remediation activities conducted by SDG&E employees and contractors in the HFTD.

6.2 Alternative Technologies

The Plan should include number and location of buildings already equipped with rooftop solar and battery storage in the HFTD in an appendix.

Collection Proposal, a reportable event is any event where utility facilities are associated with the following conditions:

(a) A self-propagating fire of material other than electrical and/or communication facilities, and
(b) The resulting fire traveled greater than one linear meter from the ignition point, and
(c) The utility has knowledge that the fire occurred.

[61] Plan at p. 80.
[62] Ibid at p. 81.

6.3 CPUC Reportable Ignitions

The specific causes of all CPUC reportable ignitions in 2017 and 2018 must be included in the 2019 Plan.

6.4 Transmission and Distribution Wires Down

The specific causes of all CPUC wires-down events in 2017 and 2018 must be included in the 2019 Plan.

7. Recommendations for Future WMPs

Future WMPs must focus on strategies that provide the greatest fire danger mitigation effectiveness per dollar spent. This will require a granular analysis of each mile of transmission and distribution lines and the specific causes of past fires and most likely causes of future fires. This analysis must utilize the "fire ignition" and "wire down" event reports required by the Commission to adjust the WMPs to achieve maximum fire mitigation effectiveness and maximum value for ratepayers for the dollars being expended on the various WMP programs. Future WMPs should not include projects or strategies that have not been proven to effectively reduce the risk of catastrophic wildfires. For example, future WMPs should not include wood-to-steel pole replacement capital expenditures without evidence supporting the effectiveness of these pole replacements in reducing the risk of fire ignition in HFTD areas. In addition, future WMPs should include incentive programs for ratepayers to quickly transition to customer-owned solar and batteries, as a lower fire risk alternative to portable generators.

8. Other Issues

None at this time.

Respectfully submitted,

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