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Transmittal via email: wildfiresafetydivision@cpuc.ca.gov and R.18-10-007 service list

RE: MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2020 WILDFIRE MITIGATION PLAN Q3 QUARTERLY REPORT OF SDG&E, PG&E, AND SCE

Dear Director Thomas Jacobs:

The Mussey Grade Road Alliance (MGRA or Alliance) serves these comments pursuant to the WSD Guidance letter of July 17, 2020,[1] which authorizes public comment on Remedial Compliance Plans (RCPs) and Quarterly Reports (QRs), and Director Carolyn Thomas Jacobs' letter of September 8, 2020 extending the comment period.[2]

The following Alliance comments were prepared by MGRA's expert witness, Joseph W. Mitchell.

MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2020 WMP Q3 REPORTS OF SDG&E, PG&E, AND SCE

Like the Remedial Compliance Plans, the IOU Q3 reports contain a considerable amount of new material. The summary documents alone are several hundred pages, and the reports are accompanied by new data and supporting spreadsheets. The following notes comments are only a

[1] Guidance on the Remedial Compliance Plan & Quarterly Report Process Set Forth in Resolution WSD-002; Caroline Thomas Jacobs; July 17, 2020.
[2] Subject: Request to Extend Comment Period for Quarterly Reports and Adjust Reply Comment Parameters; Carolyn Thomas Jacobs; September 8, 2020

cursory review. WSD should take the opportunity to do additional analysis on the IOU submissions.

1. GENERAL ISSUES

1.1. Guidance 1 - Foundational, Supporting, Traditional, or Control Programs

None of the major IOUs claims to be able to fully comply with Guidance 1, which instructs them to provide risk reduction, consequence reduction, and risk model information for all of their programs. SDG&E states that "not all initiatives can have a direct impact on reducing risk, and it is difficult to calculate a risk reduction for some initiatives…"[3] SCE states: "To summarize, many wildfire initiatives either do not directly mitigate ignition risk (e.g., the Allocation methodology development and application initiative in the Resource allocation methodology category) or are traditional programs that have been performed for many years."[4]

The general arguments put forward by IOUs regarding these programs is that 1) the program is solely supportive of other risk reduction programs or 2) the program is part of the general operational activities of the utilities, or 3) the program is governed by a regulatory mandate. While it is clear that such activities do not fit neatly into the framework of wildfire risk reduction programs, WSD should not be comfortable with accepting the utility arguments regarding these programs because the incremental value of these programs has still not been demonstrated.

One way to gauge the value of foundational or supporting activities is to compare the state of the utility and ratepayers if those programs did not exist, or if they had significant cuts in their budget. MGRA has proposed analyses of this type in the past, including in its 2020 Wildfire Mitigation Plan comments.[5] In this "world of hurt" analysis, scenarios would be envisioned where safety programs were entirely cut out or reduced, or rolled back to their pre-2017 (or 2007) status, or in which the utility was no longer viable and customers had to find another option for electric power. An analysis of this type could provide adequate support for truly foundational or supporting programs if WSD determines such support is required.

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[3] San Diego Gas & Electric Company's Quarterly Report on 2020 Wildfire Mitigation Plan for Q3 2020; September 9, 2020; p. 5. (SDG&E Report)

[4] Southern California Edison; First Quarterly Report on 2020-2022 Wildfire Mitigation Plan for Class B Deficiencies; September 9, 2020; pp. 2-3. (SCE Report)

[5] MUSSEY GRADE ROAD ALLIANCE COMMENTS ON 2020 WILDFIRE MITIGATION PLANS OF SDG&E, PG&E, SCE; April 7,2020; p. 40.

Recommendations:

- If WSD requires supporting calculations for programs that are foundational, supporting, traditional or regulatory mandates it should require that utility estimates be based on a counterfactual elimination, reduction, or roll-back of those programs.

1.2. Guidance 2 & PG&E 2 – Covered Conductor

All three major IOUs are rolling out a covered conductor program, however the benefits of their programs are not adequately explained, estimated, or compared against alternatives.

PG&E, for instance, estimates the reduction in outages predicted from adopting covered conductor versus other mitigations.[6] While this is useful, the basis for PG&E's estimates are not explained. Neither PG&E nor any other IOU presents any research regarding covered conductor resistance to tree fall-in or breakage and contact with ground. While covered conductor is not proof against that sort of damage, it should be expected that much of the insulation would remain intact even in the event of severe damage, reducing the potential for arcing and ignition. It appears that PG&E's analysis assumes arcing in the case of all breakage or tree fall-in events.

SDG&E, on the other hand, only provides qualitative comparisons of covered conductor as compared to other system hardening efforts.[7] It is working on a "new model" for risk estimation but currently uses subject matter expertise to estimate risk reduction.

SCE, which has the most extensive covered conductor program, also uses subject matter experts to estimate risk reduction from covered conductor.[8]

Recommendations:

WSD should encourage the IOUs to collaborate on an experimental program to measure the resistance of covered conductor to severe vegetation contact or line breakage events, estimating the probability of arcing and magnitude of energy release compared to bare conductor under similar circumstances. The IOUs should also come up with a common method of measuring the risk reduction provided by covered conductor for various types of outages, faults, or infrastructure damage.

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[6] PG&E Q3 Report; Supplemental file 2020WMP_ClassB_PGE-2_Atch01.
[7] SDG&E Q3 Report; pp. 20-22.
[8] SCE Q3 Report; p. 16.

1.3. Guidance 4 & 12 – PSPS Impacts and Directional Vision

None of the major IOUs provided quantitative responses to the WSD guidance requiring them to state how specific WMP initiatives will affect their PSPS thresholds, PSPS frequency, or PSPS duration. As far as directional vision, none of the major IOUs has the elimination of PSPS as a mitigation strategy in its long term planning. SDG&E plans to take consequences of PSPS into account in future WMP updates,[9] but does not state which consequences will be included. In PG&E's supplemental attachment 2020WMP_ClassB_Guidance-1_Atch01, Table 23, it provides meager qualitative discussion of PSPS. In PG&E's long-term planning discussion of PSPS,[10] there is no long term goal to evaluate to what extent hardening, vegetation management, and the deployment of covered conductor could be used to raise shutoff threshold. Neither is there any program to measure residual risk requiring PSPS, nor any program to evaluate customer harm. While SCE plans to evaluate performance data with an eye to raising PSPS thresholds, it does not intend to engage in this program until 2026.[11] Even with covered conductor deployed, SCE anticipates still requiring power shutoff for wind gusts exceeding 58 mph.[12]

In short, the IOUs consider power shutoff to be a core component of their wildfire prevention strategy, do not account for customer costs and risks brought on by loss of power, and do not have long term elimination of PSPS as a goal, or to substantially adjust PSPS thresholds based on system hardening.

Recommendations:

- WSD should itself drive or should request that the CPUC drive an effort to quantitatively identify customer harm caused by PSPS, and to quantify the benefit of PSPS in terms of avoided wildfire losses.
- In its future guidance for long term vision, WSD should push the IOUs to envision and implement strategies that will eliminate customer harm from de-energization.
- SCE should be asked to justify its planned shutoff threshold of 58 mph for covered conductor.

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[9] SDG&E Q3 Report, p. 6.
[10] PACIFIC GAS AND ELECTRIC COMPANY QUARTERLY REPORT ON 2020 WILDFIRE MITIGATION PLAN FOR MAY TO JULY 2020; September 9, 2020; p. 80. (PG&E Q3 Report)
[11] SCE Q3 Report; p. 168.
[12] Id; p. 43.

2. SDG&E

2.1. SDG&E-13,14 – Justification of 25 Foot Trim and Granularity of "At Risk Species"

At WSD's request, SDG&E has provided a more extensive and transparent analysis of its vegetation outage data in order to support its expanded trim distances. WSD's goal was to obtain more detailed information about the specific tree species (as opposed to genera) that were involved in SDG&E outages and grouped into SDG&E's "at risk species" classification. SDG&E's species outage data, provided in SDGE-14 Table 24,[13] yields surprising results. This data conflicts dramatically with earlier data request responses that MGRA used in its WMP comments filed with the Commission[14] and WSD,[15] and consequently we modify some of MGRA's conclusions and recommendations.

While SDG&E lists a number of factors that cause a tree to be classified as an "at risk species", Table 24 makes apparent that its designations appear to be based solely on (or at least are 100% correlated with) the number of outages caused by that species in the SDG&E service area. The top five species responsible for the most outages are eucalyptus, pine, oak, sycamore, and palm. These are also the same five species classified as "at risk". However, there is no indication of which species are *incrementally* (per tree) more likely to cause outages. In SDG&E's response to guidance SDG&E-13, in which it presents data to justify its 25 foot maximum trim value, SDG&E breaks out outages per 1,000 trees for analyzing different trim distances, though not taking species into account. This is odd, because it has the data to do both.

To answer the question of how likely a tree of a given species is to cause an outage, I have recalculated SDG&E's Table 24 normalizing to SDG&E's average inventory. The results are presented in Table 1, below:

[13] SDG&E Q3 Report; p. 131.
[14] R.18-10-007; MUSSEY GRADE ROAD ALLIANCE COMMENTS ON THE WILFIRE MITIGATION PLANS; March 13, 2019; pp. 16-17.
[15] MGRA 2020 WMP Comments; pp. 29-31.

Species	Average Inventory	Average Outages per year	Total Outages	% of total outages	Outages per 1000 trees per year
Eucalyptus	48116	25.50	459	41.90%	0.53
Palm	11223	12.50	225	20.50%	1.11
Pine	11509	8.11	146	13.30%	0.70
Oak	19510	3.72	67	6.10%	0.19
Sycamore	3118	1.11	20	1.80%	0.36
Pepper (California)	8462	0.94	17	1.60%	0.11
Cottonwood	1931	0.72	13	1.20%	0.37
Avocado	11838	0.72	13	1.20%	0.06
Cypress	473	0.67	12	1.10%	1.42
Ash	4706	0.61	11	1.00%	0.13
Century Plant	401	0.50	9	0.80%	1.25
Ficus	1587	0.50	9	0.80%	0.32
Willow	9099	0.50	9	0.80%	0.05
Silk Oak	1578	0.44	8	0.70%	0.28
Tamarisk/Salt Cedar	1310	0.39	7	0.60%	0.30

Table 1 - Recalculation of SDG&E Table 24. Columns have been added for total number of outages and for outages per 1000 trees per year. Only plants causing more than 6 outages in the 18 year study period are included. Color coding is based upon number of outages per year per 1,000 trees: Red: >1.00, Yellow: 0.5 to 1.0, No color, 0.3 to 0.5, and Green, < 0.3.

Based upon data request responses provided in 2019, MGRA's comments on the 2019 and 2020 WMPs concluded that eucalyptus and sycamore were ten times more likely per tree to cause an outage than oaks. In that analysis, eucalyptus trees were by far the most likely to be a cause of outages. There are two notable differences between the data sets. First, the data provided in Table 24 represents 18 years of outage data, whereas that provided for the 2019 WMPs was only for the previous five years. Second, the 2019 WMP dataset was restricted to outages in which the tree had 12 feet or more of clearance. With those differences acknowledged, we note the following differences between the results:

- Palm trees are the most likely of the major species to cause outages on a per tree basis.
- Other less common species such as century plant and cypress are more apt per tree to cause outages than species classified as "high risk"
- Pine trees cause more outages per tree than eucalyptus.
- Sycamore trees are 30% less likely per tree to be a cause of an outage than eucalyptus. Based on the 2019 data request responses by SDG&E, MGRA concluded that these probabilities per tree from these two tree types were the same.

Additionally, some conclusions reached by MGRA in its 2019 and 2020 WMP comments are reconfirmed; specifically, that oak trees pose a relatively low risk of outage per tree, even though it is classified as an "at-risk species".

Over time, SDG&E has been increasing its trim distances, and these trim distances may be enforced differently for each species. If so, this would affect the relative risk per tree of an outage shown in Table 1. SDG&E tries to justify its extended trim distances in its answer SDG&E-13, and presents outage data based on known trim distances, specifically in Tables 21-23 and Figures 16 and 17. In the latter figures, SDG&E also uses the "vegetation contacts per 1000 trees" metric. Importantly, though, SDG&E does not reveal species data in the SDG&E-13 response, and as shown in the SDG&E-14 response and in Table 1 relative outage risk is dramatically different per species. So once again, we are unable to reach an evidence-based conclusion as to whether aggressive additional trimming is justified for native species such as oak and sycamore. WSD should remedy this for SDG&E's Q4 report and for its 2021 update.

Recommendation:

- SDG&E needs to justify its additional trim requirements based on both species and trim data. Hence it should be required to provide a combined analysis showing the effect of both trim distance AND tree species on outage rates.

2.2. Guidance 7 – Lack of Detail Regarding Enhanced Inspection Programs

SDG&E provides a quantitative justification for its prioritization of maintenance issues identified by its inspection programs, stating that 25% of issues classified as "emergency" will cause a fault if they are not addressed before the next inspection cycle, compared to only 0.21% of non-critical issues.[16] It is important to note that SDG&E's analysis assumes a constant failure rate. However, both vegetation contact and equipment failure are known to be driven by environmental conditions, particularly wind. Likewise, the consequences of wildfire ignitions are also expected to be environmentally driven, being considerably worse under fire weather conditions (such as Red Flag Warning days). One would therefore expect that incremental risk of ignitions resulting in catastrophic wildfire would be higher during certain periods of the year. SDG&E should be asked to show to what extent their QA/QC faults are environmentally driven (i.e. coincident with severe weather days, either wet storms or fire weather). This information can inform prioritization. For

[16] SDG&E Q3 Report; p. 42.

example, if medium range forecasts are indicating a high potential for Red Flag Warnings, it may be beneficial to promote some "Priority" tickets to "Emergency" if the defects are known to have environmental dependencies.

Recommendation:

WSD should request that SDG&E provide data showing to what extent its QA/QC defects are environmentally driven; i.e. correlated with wind storms (both wet storms and fire weather).

2.3. Guidance 9 – Pilot Program Evaluation

In its discussion of its pilot programs, SDG&E's narrative[17] lacks quantitative evaluation or pass/fail criteria that would be used to determine whether a pilot program would proceed to the next phase of deployment.

Recommendation:

Evaluation and pass/fail criteria (preferably quantitative) should be required in order to satisfy Guidance-9.

3. SCE

3.1. Guidance 6 – Disaggregating WMP Initiatives from Standard Operations

SCE provides an updated table of programs in its Guidance-6 Appendix A, in Table-6 Table "Disaggregating WMP Initiatives from Standard Operations". In this table, SCE provides risk reduction scores and risk-spend efficiencies for all of its programs. However, most of its disaggregated programs use the same risk and RSE scores. For instance, the risk score and RSE for weather stations are the same as the risk score and RSE for fuel sampling, and the same as those for fuel mapping, etc. It appears that SCE's submission fails to satisfy WSD's guidance to "to determine whether and how these programs incrementally impact wildfire risk reduction or if related WMP initiatives are redundant and unnecessary."[18]

Recommendation:

SCE should be required to calculate independent risk scores and risk/spend efficiencies for all of its programs.

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[17] SDG&E Q3 Report; pp. 47-51.
[18] SCE Q3 Report; p 81.

3.2. SCE-14 – Determination of "At-Risk" Trees

Based on the information provided in Tables 26 and 27 of the SCE Q3 Report,[19] SCE does not appear to apply quantitative criteria for its determination of "At-Risk" tree species. The qualitative attributes that it uses to determine risk are not described as to how they apply to each tree species, and how they are weighted.

Recommendation:

WSD should require SCE to provide data quantifying tree-caused circuit outages (TCCI) based upon number of incidents per 1,000 trees for each tree species.

4. PG&E

4.1. Guidance 1 – Benefits of Situational Awareness

PG&E attempts to support its situational awareness program by providing estimates of its benefits in terms of reduced response times. However, its estimates are not justified by data and appear overoptimistic. PG&E states that: "[u]sing situational awareness tools to detect and respond to ignitions, the chance of a large fire becoming catastrophic or destructive drops significantly,"[20] but fails to provide supporting evidence for this statement. In its supporting data file,[21] PG&E reveals that its justification is based on an SME estimate that its situational awareness program will reduce fire response times by 15 minutes. There is no additional support for this number, which seems overly optimistic.

MGRA attempted to do a quantitative check on PG&E's satellite wildfire detection program in its comments on the 2020 WMPs based on PG&E's responses to a WSD data request.[22] In all three cases reported for which a wildfire was related to a CPUC-reportable incident, the satellite detection occurred later than (sometimes much later than) the incident start time reported by the fire agencies.

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[19] Id.; p. 234-235.
[20] PG&E Q3 Report; p. 5.
[21] PG&E Q3 Report; file 5.3.2_CMEWPv1.1
[22] MGRA 2020 WMP Comments; pp. 25-27.

Recommendation:

- WSD should request quantitative support for PG&E's claim that its situational awareness programs will reduce fire response times by 15 minutes. This should consist of a comparison of satellite detection times and incident start times reported by fire agencies.

4.2. PGE-9 – Egress Score

PG&E's response to Deficiency PGE-9 does not provide a quantitative description of how PG&E calculates and uses an egress score.[23] Importantly, PG&E's egress scoring does not appear to take into account whether a particular circuit is adjacent to and poses a threat to an emergency evacuation route. As MGRA noted in its 2020 WMP comments, burning utility poles blocked egress routes during the Camp fire.[24]

Recommendation:

- WSD should require PG&E to provide a quantitative description of how egress score is calculated and incorporated into its prioritization calculations.
- WSD should require all utilities to identify where wooden poles are adjacent to evacuation routes.

Respectfully submitted this 30th day of September, 2020,

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[23] PG&E Q3 Report; p. 124.
[24] MGRA 2020 WMP Comments; pp. 28-29; citing
Los Angeles Times; "Must Reads: Here's how Paradise ignored warnings and became a deathtrap"; December 30, 2018; Page St. John, Joseph Serna, Rong-Gong Lin II;
https://www.latimes.com/local/california/la-me-camp-fire-deathtrap-20181230-story.html