

**THE PUBLIC ADVOCATES OFFICE DATA REQUEST:  
CALADVOCATES-SDGE-2022 WMP-10  
SDG&E RESPONSE**

**Date Received: March 18, 2022  
Date Submitted: March 23, 2022**

**I. GENERAL OBJECTIONS**

1. SDG&E objects generally to each request to the extent that it seeks information protected by the attorney-client privilege, the attorney work product doctrine, or any other applicable privilege or evidentiary doctrine. No information protected by such privileges will be knowingly disclosed.
2. SDG&E objects generally to each request that is overly broad and unduly burdensome. As part of this objection, SDG&E objects to discovery requests that seek “all documents” or “each and every document” and similarly worded requests on the grounds that such requests are unreasonably cumulative and duplicative, fail to identify with specificity the information or material sought, and create an unreasonable burden compared to the likelihood of such requests leading to the discovery of admissible evidence. Notwithstanding this objection, SDG&E will produce all relevant, non-privileged information not otherwise objected to that it is able to locate after reasonable inquiry.
3. SDG&E objects generally to each request to the extent that the request is vague, unintelligible, or fails to identify with sufficient particularity the information or documents requested and, thus, is not susceptible to response at this time.
4. SDG&E objects generally to each request that: (1) asks for a legal conclusion to be drawn or legal research to be conducted on the grounds that such requests are not designed to elicit facts and, thus, violate the principles underlying discovery; (2) requires SDG&E to do legal research or perform additional analyses to respond to the request; or (3) seeks access to counsel’s legal research, analyses or theories.
5. SDG&E objects generally to each request to the extent it seeks information or documents that are not reasonably calculated to lead to the discovery of admissible evidence.
6. SDG&E objects generally to each request to the extent that it is unreasonably duplicative or cumulative of other requests.
7. SDG&E objects generally to each request to the extent that it would require SDG&E to search its files for matters of public record such as filings, testimony, transcripts, decisions, orders, reports or other information, whether available in the public domain or through FERC or CPUC sources.
8. SDG&E objects generally to each request to the extent that it seeks information or documents that are not in the possession, custody or control of SDG&E.
9. SDG&E objects generally to each request to the extent that the request would impose an

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undue burden on SDG&E by requiring it to perform studies, analyses or calculations or to create documents that do not currently exist.

10. SDG&E objects generally to each request that calls for information that contains trade secrets, is privileged or otherwise entitled to confidential protection by reference to statutory protection. SDG&E objects to providing such information absent an appropriate protective order.

**II. EXPRESS RESERVATIONS**

1. No response, objection, limitation or lack thereof, set forth in these responses and objections shall be deemed an admission or representation by SDG&E as to the existence or nonexistence of the requested information or that any such information is relevant or admissible.

2. SDG&E reserves the right to modify or supplement its responses and objections to each request, and the provision of any information pursuant to any request is not a waiver of that right.

3. SDG&E reserves the right to rely, at any time, upon subsequently discovered information.

4. These responses are made solely for the purpose of this proceeding and for no other purpose.

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**III. RESPONSES**

As this data request relates to SDG&E's Wildfire Mitigation Plan (WMP), which sets forth programs and initiatives that are generally focused in the High Fire Threat District (HFTD), the information and numbers provided in responses are focused on the HFTD.

**QUESTION 1**

In SDG&E's WMP update, page 199 lists "initiation of third-party review of the models" as planned enhancement to its Probability of Ignition model in 2022. Please answer the following:

- a) When does SDG&E plan to initiate this third-party review?
- b) When does SDG&E plan to complete this third-party review?
- c) Please describe the objectives of the planned third-party review.
- d) Please describe the methods that will be used for the planned third-party review.
- e) If SDG&E has determined who will perform the third-party review, please identify the organizations or persons responsible for the review.
- f) If SDG&E has not determined who will perform the third-party review, how will SDG&E make this decision?
- g) Does SDG&E plan to undertake a third-party review of the WRRM and WRRM-Ops models?
- h) If the answer to part (g) is no, why not?
- i) Does SDG&E plan to undertake a third-party review of the WiNGS-Planning model?
- j) If the answer to part (i) is no, why not?
- k) Does SDG&E plan to undertake a third-party review of the WiNGS-Ops model?
- l) If the answer to part (k) is no, why not?
- m) Please provide a copy of this third-party review to Cal Advocates when it is complete.

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**RESPONSE 1**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

a) The initiation of the third-party review is conditional upon completion of the preceding points listed on page 199 of the WMP update:

- 2022 iteration and improvement of POI models
- Migration of models to the cloud

While SDG&E values the feedback and validation that might result from a third-party review as it pertains to highly technical models and quantifications, we believe that such a review is most beneficial when the models are fully developed and documented. As noted in the WMP update, POI models are a work in progress. SDG&E anticipates completing the above points sometime in 2022.

b) SDG&E has not yet formalized a process or format for a third-party review. However, we anticipate that the review process may encompass multiple, periodic, and perhaps iterative stages.

c) SDG&E has engaged with different third parties to review the models based on different needs and objectives, including:

- i. Review of the enterprise risk level assumptions
- ii. Cloud Migration & review of components of models
- iii. Modeling methods, algorithms, and reproducibility
- iv. Data quality assessment

d) SDG&E has engaged with multiple organizations, and is considering different approaches for a third party review. We anticipate that the review process may encompass multiple methods or stages. Some of the methods that we have explored or initiated are:

- i. Expanding the role of third-party contractors to serve as technical advisors
- ii. Expanding the role of academic partners to include independent evaluation
- iii. Presenting and defending the modeling methodologies at the “model review board” led by SoCalGas (a subsidiary of Sempra) data scientists.
- iv. Engaging with utility program evaluation firms

e) SDG&E has not yet formally finalized which organization(s) will perform a third-party review of the POI models.

f) SDG&E will continue to collaborate in the Joint IOU Risk Modeling workshops to obtain suggestions for third party evaluators and gain perspectives for best practices pertaining to a

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third-party review. SDG&E would work to use a neutral third party that could provide an unbiased perspective.

- g) SDG&E is exploring RMS, which will enable SDG&E to have a more informed view of the consequences of wildfire events. Data provided by RMS will enable SDG&E to obtain a probabilistic view of impact across a broad number of impact criteria, and consequently to make more informed decisions related to risk management. The two models will be evaluated for their use in current and future decision making models.
- h) N/A
- i) SDG&E is exploring the applicability of a third-party review for the WiNGS-Planning model. The third-party review would take place after the WiNGS Planning model is migrated to Python and productionized in AWS cloud.
- j) Not Applicable
- k) SDG&E has started a review of certain components of the WiNGS-Ops model in conjunction with cloud migration efforts. For example, third-party contractors have reviewed SDG&E's programming code for errors and to confirm that it is reproducible. Additionally, the WiNGS-Ops cloud architecture is developed by a third-party contractor and reviewed by Sempra's Cloud Architecture Review Board, which serves as a third party for assessing security risks pertaining to model deployment. SDG&E will continue to explore the applicability of additional third-party review for WiNGS-Ops
- l) Not Applicable
- m) While SDG&E has not yet finalized the process or format for which to document the third-party review, SDG&E may share the results of a third party review when complete and accepted subject to all applicable rights and privileges.

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**QUESTION 2**

Regarding Table 7.1 of the February 11, 2022 non-spatial data (2022 WMP Attachment B), please explain in detail how the projections of future risk events affect SDG&E's decision making process.

**RESPONSE 2**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

SDG&E's current decision making process does not use the projections of future risk events in Table 7.1, 2022 non-spatial data (2022 WMP Attachment B). However, the WiNGS-Planning model and WiNGS Ops model utilizes the historical data that informs SDG&E's decision making process.

The WiNGS-Planning model assesses the annual rate of ignitions at the circuit-segment level utilizing historical ignition counts, in order to estimate the likelihood of a significant wildfire occurring on any given segment. This calculation comprises the WF LoRE (Likelihood of a Risk Event) element within the model. This element is used along with the WF CoRE (Consequence of a Risk Event) to compute the baseline wildfire risk score for each circuit-segment element. The risk score is subsequently utilized to assess mitigation RSEs at the segment level and identify circuit-segment risk rankings, which informs decision making around scoping strategic long-term mitigation projects.

The WiNGS-Ops model currently uses probability of failure (POF) and probability of ignition (POI) scores based on historic outage and ignition data in conjunction with PSPS and consequence models to inform when and where to proactively shut off the power (PSPS), based on a wind speed threshold. The POI and POF scores are critical in the model as they represent the asset risk for failure and ignition.

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**QUESTION 3**

In Table 7.1 of the February 11, 2022 non-spatial data (2022 WMP Attachment B), SDG&E provides “Key recent and projected drivers of risk events.” Please answer the following questions regarding the rows in Table 7.1 that are all marked as “Are risk events tracked for ignition driver? yes”. It is acceptable to address these rows collectively, to the extent that the same responses apply.

- a) What methods did SDG&E use to calculate the projected number of risk events in 2022?
- b) What methods did SDG&E use to calculate the projected number of risk events in 2023?
- c) What data did SDG&E use to calculate the projected number of risk events in 2022 to 2023?
- d) Please provide any workpapers SDG&E used to calculate projected risk events in this table.

**RESPONSE 3**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

- a) The 2022 risk events projection methodology is as follows for both transmission and distribution related outage risk events:
  - a. The starting point is the five-year average of risk events per driver.
  - b. Programs that are expected to mitigate each driver are mapped to those specific drivers.
  - c. The risk events reduced for each driver is calculated for each program.
    - i. The calculated five-year average risk event rate per driver is calculated by taking the five-year average risk event count per driver and dividing by the total system risk events.
    - ii. This calculated five-year average risk event rate is multiplied by the calculated risk events reduced per year for each program.
  - d. The forecasted risk events for future years is the five-year average risk events per driver minus the risk events reduced for each relevant program.
  - e. The quarterly projections are assumed to be split equally and the annual risk events are divided by four.

For distribution and transmission wire down events:

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- a. The starting point is the ratio the five-year average of wire down risk events to outage risk events for each driver.
  - b. The outage risk events for each projected quarter are multiplied by this ratio to calculate the projection of wire down events in future years.
- b) The process is the same for 2023 risk events, but the starting point is the 2022 projected risk events.
- c) The data used is the historical risk event data in Table 7.1 and the risk reduction calculations for each relevant program.
- d) See attached file “CalPA DR WMP-10 Q3d.xlsx”

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**QUESTION 4**

In Table 7.1 of the February 11, 2022 non-spatial data (2022 WMP Attachment B), SDG&E provides “Key recent and projected drivers of risk events.” For the following rows in Table 7.1, SDG&E forecasts more risk events per year (on average) in 2022-2023 than actually occurred in 2015-2021. For each line, explain why SDG&E forecasts an increase in risk events.

- |             |             |              |
|-------------|-------------|--------------|
| a) Line 1c  | k) Line 17b | u) Line 18o  |
| b) Line 1d  | l) Line 17c | v) Line 20a  |
| c) Line 2a  | m) Line 17d | w) Line 21a  |
| d) Line 2b  | n) Line 18a | x) Line 22a  |
| e) Line 2c  | o) Line 18d | y) Line 23a  |
| f) Line 2d  | p) Line 18e | z) Line 25c  |
| g) Line 3a  | q) Line 18f | aa) Line 25e |
| h) Line 4a  | r) Line 18g | bb) Line 26f |
| i) Line 6a  | s) Line 18h | cc) Line 26k |
| j) Line 10h | t) Line 18i | dd) Line 26m |

**RESPONSE 4**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

In Table 7.1, SDG&E does not forecast any increase in risk events per year in 2022-2023. Please refer to the table below for each requested driver projection. The starting point for each driver’s projection is the five-year average as described in the response to question 3 above. The projected risk events in 2022 and 2023 are either the same, or a reduction from the five-year average for each driver.

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#	Sub-cause category	2015	2016	2017	2018	2019	2020	2021	5-yr avg 2017- 2021	2022	2023
1.c.	Balloon contact- Distribution	1	5	8	3	5	5	3	4.8	4.781	4.761
1.d.	Vehicle contact- Distribution	6	13	17	23	28	33	22	24.6	24.529	24.458
2.a.	Connector damage or failure- Distribution	7	2	0	7	6	11	15	7.8	7.681	7.563
2.b.	Splice damage or failure — Distribution	0	0	0	0	0	0	0	0	0.000	0.000
2.c.	Crossarm damage or failure - Distribution	0	0	0	1	3	1	1	1.2	1.191	1.183
2.d.	Insulator damage or failure- Distribution	0	0	0	0	0	1	0	0.2	0.198	0.196
3.a.	Wire-to-wire contact / contamination- Distrib	0	0	0	0	1	0	0	0.2	0.197	0.194
4.a.	Contamination - Distribution	0	0	0	2	2	4	0	1.6	1.597	1.593
10.h.	Other - Transmission	0	0	1	0	0	1	0	0.4	0.398	0.396
17.b.	Animal contact- Distribution	70	80	77	74	89	95	86	84.2	83.339	82.478
17.c.	Balloon contact- Distribution	70	84	120	112	93	111	136	114.4	113.937	113.474
17.d.	Vehicle contact- Distribution	94	96	93	99	100	107	120	103.8	103.501	103.202
18.a.	Capacitor bank damage or failure- Distributio	13	5	3	11	12	11	15	10.4	10.305	10.210
18.d.	Lightning arrester damage or failure-	22	28	26	20	28	23	38	27	26.727	26.454
18.e.	Switch damage or failure- Distribution	8	15	10	19	15	17	12	14.6	14.452	14.304
18.f.	Pole damage or failure - Distribution	20	32	62	23	67	31	46	45.8	45.395	44.990
18.g.	Insulator and brushing damage or failure -	2	7	7	9	10	4	11	8.2	8.125	8.050
18.h.	Crossarm damage or failure - Distribution	4	14	20	30	33	29	43	31	30.778	30.556
18.i.	Voltage regulator / booster damage or	0	0	1	1	0	1	3	1.2	1.196	1.192
18.o.	Other - Distribution	2	12	13	19	25	4	74	27	26.848	26.696
20.a.	Contamination - Distribution	1	0	0	0	2	0	5	1.4	1.397	1.394
21.a.	Utility work / Operation	6	9	5	9	9	30	16	13.8	13.800	13.800
22.a.	Vandalism / Theft - Distribution	2	4	1	3	2	6	10	4.4	4.398	4.396
23.a.	All Other- Distribution	1	0	0	1	0	2	0	0.6	0.598	0.596
25.c.	Balloon contact- Transmission	17	24	22	25	16	23	21	21.4	21.280	21.160
25.e.	Other contact from object - Transmission	1	0	2	1	3	0	0	1.2	1.192	1.184
26.f.	Pole damage or failure - Transmission	1	0	0	4	3	0	0	1.4	1.391	1.382
26.k.	Anchor / guy damage or failure -	0	0	1	0	0	0	0	0.2	0.199	0.198
26.m.	Connection device damage or failure -	0	0	0	1	1	0	0	0.4	0.398	0.396

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**QUESTION 5**

In section 7.3.5.13 of SDG&E’s 2022 WMP, titled “Quality assurance/quality control of vegetation management,” (p. 293) SDG&E states that, SDG&E utilizes a third-party contractor to perform quality assurance audits of vegetation management activities to measure work quality, contractual adherence, compliance, and to determine the effectiveness of each component of the program. These audits include a statistical analysis of a representative sample of all completed work. Auditing is performed by ISA Certified Arborists. A minimum random sampling of 15 percent of completed work is audited to determine compliance with scoping requirements.

- a) Please state the number of third-party contractor quality assurance audits of vegetation management activities performed in 2021 as referenced above.
- b) How many of these audits produced findings of non-compliant vegetation or non-compliant line clearances?
- c) State the total circuit-miles of vegetation management work completed in 2021 (“all completed work”).
- d) State the number of circuit-miles of vegetation management work that was subject to quality assurance audits as part of the random sample mentioned above.
- e) How many instances of non-compliant vegetation were identified during these audits?
- f) Please provide copies of all reports or written findings stemming from these quality assurance audits.

**RESPONSE 5**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 5, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

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a) The table below represents the number of audits performed in 2021 on the VM activities of Pre-inspection, Tree Trim/Removal, and Pole Brushing across the service territory. The metric used is the total number of audit work orders associated with these activities.

<b>VM Activity</b>	<b>Pre-inspection</b>	<b>Tree Trim/Removal</b>	<b>Pole Brushing</b>
2021 Audit Work Orders	207	374	140

b) The table below represents the number of Tree Trim/Removal audits performed in 2021 across the service territory that had a finding of a non-compliant line clearance. The metric used is the total number of Tree Trim/Removal audit work orders.

<b>VM Activity</b>	<b>Tree Trim/Removal</b>
HFTD Non-Compliant Findings	9
Non-HFTD Non-Compliant Findings	5

c) SDG&E does not track its Vegetation Activities using line miles as the metric.

d) See above.

e) The table below represents the number of Tree Trim/Removal instances that had a finding of a non-compliant line clearance on distribution facilities. The metric used is the total number of tree IDs.

<b>VM Activity</b>	<b>Tree Trim/Removal</b>
HFTD Non-Compliant Findings	20
Non-HFTD Non-Compliant Findings	5

f) Please see attached document titled “DR\_CalPA\_WMP-10\_Q5f.xlsx” which includes the QA/QC audit findings for the Pre-inspection, Tree Trim/Removal, and Pole Brushing activities.

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**QUESTION 6**

At page 294 (as well as pp. 19-20), SDG&E states, As part of the “doubling-down” initiative for fire preparedness in advance of fire season, Vegetation Management also performed a QA/QC audit on a sample of all FiRM project work completed in 2021. This audit identified zero non-compliant tree/line clearance findings.

With the context of these above quotes:

- a) State the total circuit-miles of FiRM project work completed in 2021.
- b) State the number of circuit-miles of FiRM project work that were included in the sample for this QA/QC audit.
- c) Was this QA/QC audit performed on a random sample of FiRM project work?
- d) How did SDG&E determine the sample size for this audit?
- e) Please provide the report or written findings of this QA/QC audit.

**RESPONSE 6**

*SDG&E objects to this question on the grounds set forth in General Objections Nos. 2, 3, 5, 6, and 7. Subject to the foregoing objections, SDG&E responds as follows:*

- a) SDG&E completed 120 circuit miles of overhead hardening, which included 100 miles of Traditional Hardening and 20 miles of Covered Conductor Hardening. Of the 120 miles, approximately 100 miles of overhead hardening were from the legacy FiRM program work in the HFTD in 2021.
- b) Vegetation Management (VM) does not track work completion using line miles as a metric. A total of 406 poles were QA/QC reviewed of the 1383 total poles where FiRM work was performed in 2021.
- c) No.
- d) For the sample, VM was provided a list of all poles where FiRM work was scheduled for 2021. A total of 406 of these poles are located within a Vegetation Management Area (VMA) whose routine inspection schedule occurs outside July-September. All 406 of these poles were included in the VM QA/QC audit.
- e) Please see attachment titled, “DR\_CalPA\_WMP-10\_Q6e.xlsx\_.” This list includes the 21 poles that were identified as requiring brushing for Public Resources Code 4292 requirements as a result of hardware installed during FiRM.

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**END OF REQUEST**