

**THE OFFICE OF ENERGY AND INFRASTRUCTURE SAFETY:
OEIS-SDGE-2022-004
SDG&E RESPONSE**

**Date Received: March 10, 2022
Date Submitted: March 15, 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

QUESTION 1

**Regarding the “Other” category in response to OEIS-SDGE-22-002 Q4 Attachment B
Table 7.1: Key recent and projected drivers of risk events:**

- a. Please provide the number and percentage of each cause code under “Other” as referenced in OEIS-SDGE-22-002 Response 4.
- b. If a field is null or not provided, how does “Other” differ from “Unknown”?

RESPONSE 1

- a. Please see the table below for the number and percentage of each cause code under “Other” as referenced in OEIS-SDGE-22-002 response 4.

Distribution Wire down			
Cause	Cause Description	Total outages	Ratio
510	Conductor contact/wire slap	19	6.62%
526	Guy wire/anchor failure	1	0.35%
550	Transformer faulted/mechanical	1	0.35%
408	Ice or snow/Equipment failure	2	0.70%
410	Lightning/arrester/xfmr failure (weather related)	12	4.18%
544	Switch faulted/mechanical	3	1.05%
517	Tee (dead break) failure	2	0.70%
532	Pole - contact/damage/broke/rotted/on fire	17	5.92%
518	Cutout failure	6	2.09%
412	Wire slap/pole down/wire down (weather related)	84	29.27%

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204	Customer trouble/request	1	0.35%
214	Deenergized for safety	1	0.35%
314	Foreign object in distribution line	1	0.35%
515	OH connector failure (jumper/splice/squeeze-on)	1	0.35%
512	Faulted cable	2	0.70%
550	Transformer faulted/mechanical	3	1.05%
206	Fire	5	1.74%
214	Line-Xfmr deenerg for safety	5	1.74%
Null	Null (secondary cause field only)	121	42.16%

Transmission Wire Down			
Cause	Cause Description	Total outages	Ratio
6020	Conductor - Notes includes static wire	2	100%

Other Distribution			
Cause	Cause Description	Total outages	Ratio
404	Circ. Flashover/storm/high winds/undet.	1	0.67%
408	Ice or snow/Equipment failure	2	1.34%
410	Lightning/arrester/xfmr failure (weather related)	145	97.32%
517	Tee (dead break) failure	1	0.67%

Outage - Transmission			
Cause	Cause Description	Total outages	Ratio
6999	Other Transmission Equipment	3	100%

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- b. The “Other” category does not contain any Undetermined primary cause codes but does contain secondary cause fields that are blank or null. The primary cause field cannot be blank or null. If SDG&E cannot determine the cause of an outage, then those outages are categorized as Undetermined in the primary cause field. Not all outages will have a secondary cause which will result in a blank or null secondary cause field. When a secondary cause is known, the field will be populated with the appropriate cause code. An Undetermined cause code is not used in the secondary cause field.

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QUESTION 2

Regarding aggregated targets presented by SDG&E in a PSPS workshop on February 25, 2022:

SDG&E presented the following 2021 and 2022 targets:

- Asset install/Replacement: 2021 target 7,176; 2022 target 4,325
 - Distribution inspections: 2021 target 169k; 2022 target 151k
 - Transmission inspections: 2021 target 19,638; 2022 target 16,707
- a. Explain why SDG&E has decreased its targets for 2022 for each respective category.
 - b. Provide a breakdown of all initiatives aggregated into these targets, including the associated targets for each initiative (i.e., types of assets being installed and replaced).

RESPONSE 2

- a. The decreased targets for each respective category are driven by:
 - Asset install/replacement: The reduction is driven by the completion of the HFTD fuse replacements program. SDG&E is expected to complete all fuse replacements within the HFTD in 2022 leading to a reduction in units from 3,976 in 2021 to 277 in 2022.
 - Distribution inspections: Distribution inspections are performed on a multi-year cycle, and the annual targets will fluctuate year to year. In 2021 and previous years more wood pole intrusive inspections were scheduled for completion within the HFTD, while in 2022 SDG&E's wood pole intrusive inspections are due mostly in non-HFTD areas. The main drivers in the reduction from 2021 to 2022 are a 4,000 unit decrease in distribution detailed inspections, a 6,000 unit decrease in infrared inspections, and a 9,000 unit decrease in intrusive wood pole inspections (see table below). HFTD inspections are performed and remain within their required inspection schedules.
 - Transmission inspections: Transmission inspections are performed on a three-year cycle, and the annual targets will fluctuate year to year. The main driver in the reduction from 2021 to 2022 is a 900 unit decrease in drone inspections.

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Year	HFTD		HFTD	non-HFTD		Total	Year	est. \$ HFTD	st. \$ non-HFTD	% HFTD	% non-HFTD
2019	19,736		19,736	794		20,530	2019	\$1,243,368	\$50,022	96.13%	3.87%
2020	18,343	1,830	16,513	2,488		19,001	2020	\$1,155,609	\$156,744	86.91%	13.09%
2021	7,990	2,062	10,052	13,392	308	23,752	2021	\$503,370	\$843,696	42.32%	57.68%
2022	381		381	20,256		20,637	2022	\$24,003	\$1,276,128	1.85%	98.15%
2023	68		68	20,204		20,272	2023	\$4,284	\$1,272,852	0.34%	99.66%
2024			0	20,175		20,175	2024	\$0	\$1,271,025	0.00%	100.00%
2025	356		356	20,023		20,379	2025	\$22,428	\$1,261,449	1.75%	98.25%
2026	1,329		1,329	20,166		21,495	2026	\$83,727	\$1,270,458	6.18%	93.82%
2027	6,282		6,282	12,176		18,458	2027	\$395,766	\$767,088	34.03%	65.97%
2028	14,587		14,587	2,603		17,190	2028	\$918,981	\$163,989	84.86%	15.14%
Total	69,072		71,196	132,277		205,473	Total	\$ 4,351,536	\$8,333,451	35.62%	64.38%

b. The tables below provide breakdowns of all initiatives aggregated into these targets.

Asset install/replacement

Initiative	2021 Units	2022 Units
Expulsion Fuse Removal/Replacement (7.3.3.7)	3976	277
Hotline Clamp Removal/Replacement (7.3.3.10)	2743	1650
Lightning Arrestor Removal/Replacement (7.3.3.18.2)	1789	1848
Capacitor Removal/Replacement (7.3.3.1)	35	40
PSPS Sectionalizing Devices (7.3.3.8.1)	13	10
Wireless Fault Indicators (7.3.2.3)	544	500
Total	9,100	4,325

Distribution Inspections

Initiative	2021 Units	2022 Units
Annual Patrols (7.3.4.11)	86490	86490
Detailed Inspections (7.3.4.1)	22354	18177
Infrared Inspections (7.3.4.4)	17068	12000
Drone Inspections (7.3.4.9.2)	21420	22000
HFTD Tier 3 Inspections (7.3.4.9.1)	11535	12286

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Wood Pole Intrusive Inspections (7.3.4.6)	8721	350
Total	167,588	151,303

Transmission Inspections

Initiative	2021 Units	2022 Units
Additional Tier 3 Inspections (7.3.4.10.2)	1652	1654
Detailed Inspections (7.3.4.2)	1957	2087
Infrared Inspections (7.3.4.5)	6239	6154
Drone Inspections (7.3.4.10.1)	1440	500
Visual Inspections (Helo Patrol) (7.3.4.12)	6423	6312
Total	17,711	16,707

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QUESTION 3

Regarding the sensitive/fast protection settings discussed in Section 7.3.6.2 “Protective equipment and device settings” of SDG&E’s 2022 WMP Update (p. 307):

- a. What number and percentage of remote sectionalizing devices have the capability to enable these settings?
- b. Would all devices with such a setting capability within the HFTD be enabled during days with an extreme FPI rating or PSPS-triggering conditions?
 - i. If not, how does SDG&E determine which devices are enabled and when?
- c. How would conditions triggering a PSPS event differ from an extreme FPI rating when determining if settings are enabled?
- d. What sensitive/fast protection settings are enabled on days where the fire potential is extreme and when conditions may warrant a PSPS?
 - i. What is the increased sensitivity?
 - ii. Are they factory-based settings? If not, how are settings determined?
 - iii. Are the same settings enabled for all devices? If not, how are locations for settings determined?

RESPONSE 3

SDG&E objects to Question 3 on the grounds set forth in General Objections Nos. 2 and 3. Subject to the foregoing objections, SDG&E responds as follows.

- a. There are 649 capable field devices, which equates to 56.4% of all field devices. There are 100 capable 12kV distribution substations, which equates to 97% of all 12kV substations.
- b. Yes, Devices are enabled during periods when there is an extreme FPI or conditions may trigger a PSPS. Devices are enabled in the areas or zones where extreme FPI or PSPS conditions are present.
- c. In both instances, settings are enabled at the district level. During Extreme FPI events, settings are enabled based on the impacted tier of the HFTD, and thus may cross district boundaries or involve multiple districts. This differs from PSPS events that occur during

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Elevated FPI conditions. These events are usually more local and therefore settings are applied within the district/districts where the PSPS event is expected to occur.

- d. Sensitive Phase and Ground Protection elements are enabled in all devices capable of sensitive settings.
 - i. The increased sensitivity is based on the load profile of each sectionalizing device and determined by the historical peak loads determined by the telemetry data pulled from SDG&E's SCADA system.
 - ii. SDG&E's sensitive settings are not factory based. These settings are based on specific methodologies developed by SDG&E system protection to make the devices trip faster if faults were to occur. Telemetry data obtained through SDG&E's SCADA system is pulled for each device and trended over the previous five years to obtain historical peak loads. The settings for both phase and ground protection are then set higher than those historical peaks with a safety margin to guard against mis-operation under load conditions. Time delays are also set to trip instantaneously to ensure fast clearing of the fault / damage.
 - iii. Device settings are location specific based on telemetry data obtained through SDG&E's SCADA system.

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QUESTION 4

Regarding SDG&E’s statement on covered conductor’s potential to raise the threshold for PSPS events (“The Covered Conductor Program has the potential to raise the threshold for PSPS events to higher wind speeds compared to bare conductor hardening” from SDG&E’s 2022 WMP Update, p. 214) :

- a. Has SDG&E determined how wind thresholds will be changed?
 - i. If so, please provide estimates of wind thresholds that may be changed (i.e., changes of wind speed that would result in removing circuits from consideration of PSPS events).
- b. When does SDG&E intend to complete a full covered conductor project?
- c. When does SDG&E plan to change its wind thresholds, if changes in thresholds are being implemented separately from covered conductor installation?

RESPONSE 4

- a. No, SDG&E has not determined how wind thresholds will be changed as a result of covered conductor. SDG&E intends to engage a third-party contractor to perform a study, including but not limited to an analysis of covered conductor clashing and the subsequent electrical and mechanical effects. Once this study has been performed, SDG&E will then use that data to see if there are any opportunities to revise wind speed thresholds once full sections of covered conductor are completed.
- b. SDG&E completed one circuit section of covered conductor that covered six spans of conductor between remotely operable (SCADA) switches. SDG&E intends to complete additional full circuit-sections with covered conductor on all spans by the end of 2023.
- c. SDG&E intends to assess the potential changes to wind thresholds after additional installation of covered conductor and the completion of further studies. SDG&E will also assess information gathered during the joint workstreams regarding covered conductor. The timeframe is based on several factors and is not yet known.

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QUESTION 5

**Regarding the Nov. 1 Change Order Report request to decrease scale for Initiative 7.3.3.8.2
Microgrids:**

- a. What mitigation measures is SDG&E implementing to lower wildfire and PSPS risk for the Sherilton Valley area prior to undergrounding or installing covered conductor?

RESPONSE 5

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

SDG&E notes that microgrids only mitigate PSPS risk and do not mitigate wildfire risk. For SDG&E's 2022 WMP, SDG&E does not anticipate any PSPS mitigation measures for the Sherilton Valley area. SDG&E will continue to assess risk and potential mitigation measures, such as deploying temporary generation if appropriate.

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QUESTION 6

Regarding the Nov. 1 Change Order Report request to change estimated spend for Initiative 7.3.3.16 Strategic Undergrounding:

- a. Were the undergrounding projects performed in 2021 in the same locations as those indicated in SDG&E’s 2021 WMP Update?
- b. Did SDG&E address the known highest risk areas through the undergrounding projects performed in 2021?

RESPONSE 6

- a. SDG&E targeted 25 miles of lines energized through strategic undergrounding projects in 2021. To support this goal, SDG&E planned to install approximately 29 miles and resulted in energizing 26.24 miles of undergrounding that followed the existing processes for design, permitting, scoping, and land acquisitions. These installations were focused in the HFTD. Below is the list of strategic undergrounding projects completed in 2021.

Circuit	Community	Project Description	# UG Miles	Status Notes
C1030	Valley Center/San Pasqual Tribe	Phase 1 (Skyline Ranch)	0.73	Energized on 2/15/22
C1030	Valley Center/San Pasqual Tribe	Phase 2A (Paradise Mtn.)	7.50	Energized on 10/2/21
C1030	Valley Center/San Pasqual Tribe	Phase 2B (Hell Hole Canyon)	5.07	Energized on 6/23/21
C1030	Valley Center/San Pasqual Tribe	DUG Ph.1 Valley Center	3.88	Energized on 7/21/21
C1030	Valley Center/San Pasqual Tribe	DUG Phase 2 N Wohlford Rd.	2.60	Energized on 10/09/21
C221	Santa Ysabel	DUG PH.2 (Dudley's)	0.41	Energized on 12/7/21
C448	Cameron Corner	DUG (Buckman Spring Rd)	1.25	Energized on 11/20/21
C448	Cameron Corner	Microgrid Solution partnership w/ SUG	0.50	Energized on 9/30/21
C448	Cameron Corner	Microgrid Solution ONLY project	0.92	Energized on 9/30/21
C79	Descanso	DUG - Oak Grove Drive	3.38	Energized on 9/10/21
Total Mileage			26.24	

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- b. Yes, SDG&E installed 26.24 miles that were designed, scoped and went through the permitting process. SDG&E targeted miles based on how they ranked in SDG&E's wildfire risk ranking scores. In addition to the risk scores, additional data points were taken into consideration, including but not limited to data on historic PSPS events, wind conditions, critical facilities, and other factors to determine where undergrounding would have the largest impact. Constraints such as environmental limitations and concerns, permitting, subsurface and field conditions, acquisition of easements and engineering/design were also taken into consideration.

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QUESTION 7

Regarding the WRRM-Ops modeling assumptions and limitations:

- a. In SDG&E's 2022 WMP Update, p. 110, the Modeling Assumptions and Limitations subsection (Section 4.5.1.4 Wildfire Risk Reduction Model – Operations, subsection 4) says “Modeling assumptions and limitations are available from the vendor” and points to footnote 28 (“See Wildfire Analyst, available at <https://www.wildfireanalyst.com/features/>”). The link in the footnote takes you to the Technosylva web site. Where on that web site can Energy Safety find assumptions and limitations of the WRRM-Ops model?

RESPONSE 7

See attachment “Technosylva WFA-E-MODELS and INPUTS.PDF”

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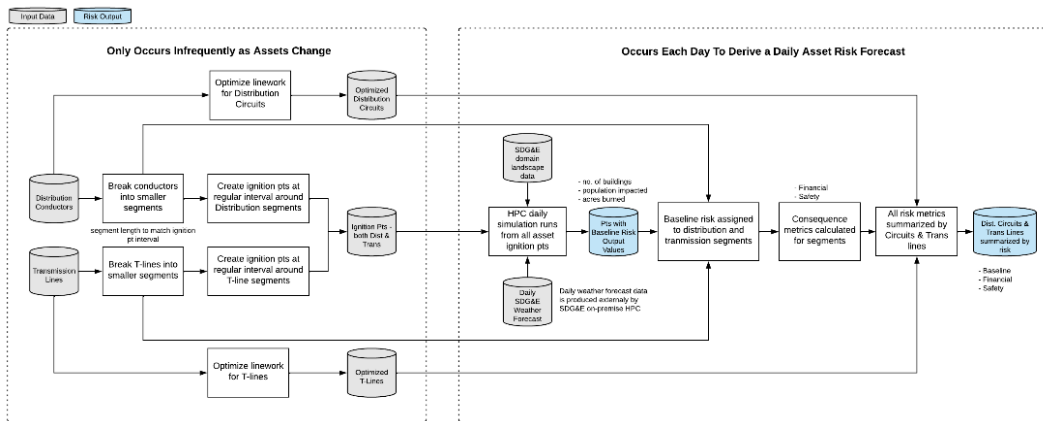
QUESTION 8

Regarding a possible mistake in graphic labels:

- a. In SDG&E’s 2022 WMP Update, p. 111, the Figure 4-26 “Data Flow for Calculating Risk Metrics for Customer OH Assets” includes elements that are labeled “SCE domain landscape data” and “Daily SCE Weather Forecast.” Is this a labeling mistake?
 - i. If so, what are the correct labels for these elements?

RESPONSE 8

It is a mistake, and the corrected graphic is below. This graphic is from Technosylva, and the process is the same for SCE and SDG&E since Technosylva supports both utilities.



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END OF REQUEST