

**PUBLIC ADVOCATES OFFICE DATA REQUEST:
CALADVOCATES-SDGE-2023WMP-11
SDG&E RESPONSE**

**Date Received: April 18, 2023
Date Submitted: April 26, 2023**

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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QUESTION 1

Regarding SDG&E's SCADA Underground (UG) Switches:

- a) Please explain SDG&E's operating procedure for operating a SCADA UG switch to energize and de-energize a circuit or circuit segment.
- b) Please provide SDG&E's written procedures or other documentation related to your response to part (a).
- c) Please explain in detail SDG&E's operating procedure, from start to finish, for the following operation: after opening a normally closed switch, the switch is returned to its normally closed position during switching.
- d) Please explain in detail SDG&E's operating procedure, from start to finish, for the following operation: after closing a normally open switch, the switch is returned to its normally open position during switching.

RESPONSE 1

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 10. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

A Distribution System Operator (DSO) in the control center sends a SCADA Command to the SCADA UG switch to either Close or Open the device, energizing or de-energizing the downstream segment.

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QUESTION 2

Regarding SDG&E's Load Break Elbows:

- a) Please explain SDG&E's operating procedure for operating a load break elbow in a vault to energize or de-energize a circuit or circuit segment.
- b) Please provide SDG&E's written procedures or other documentation related to your response to part (a).
- c) Please explain in detail SDG&E's operating procedure, from start to finish, for the following: after opening a circuit segment via a load break elbow that is normally in a closed position, the circuit segment is returned to its normally closed position during switching.
- d) Please explain in detail SDG&E's operating procedure from start to finish of the following operation: after closing a circuit segment via a load break elbow that is normally in an open position, then the circuit segment is returned to its normally open position during switching.

RESPONSE 2

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 10. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

Qualified Electrical Workers are given the proper authorization to perform switching by opening or closing the load break elbow with an insulated Live Line Tool. This will energize or de-energize the circuit or circuit segment.

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QUESTION 3

Regarding SDG&E's Junction Boxes:

- a) Please explain in detail SDG&E's operating procedure for operating a junction box in a vault to energize or de-energize a circuit or circuit segment.
- b) Please provide SDG&E's written procedures or other documentation related to your response to part (a).
- c) Please explain in detail SDG&E's operating procedure, from start to finish, for the following operation: after closing a circuit segment via a junction box that is normally in an open position, the circuit segment is returned to its normally open position during switching.
- d) Please explain in detail SDG&E's operating procedure, from start to finish, for the following operation: after closing a circuit segment via a junction box that is normally in a closed position, the circuit segment is returned to its normally closed position during switching.

RESPONSE 3

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

Not applicable. Junction boxes are not a type of sectionalizing equipment used in energizing and de-energizing circuits or circuit segments.

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QUESTION 4

Please explain SDG&E's selection criteria for installing the following equipment on underground circuits:

- a) SCADA UG
- b) Junction boxes
- c) Load break elbows

RESPONSE 4

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

- a) SCADA UG switches replace existing overhead switches that are being removed. They are also added, as needed, to limit the number of customers within one sectionalizing device.
- b) Junction boxes are placed based off a combination of pulling calculations, cable reel lengths, and strategic location where the cabling needs to split in multiple directions.
- c) Load break elbows are used on new construction.

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QUESTION 5

Please explain SDG&E's selection criteria for installing the following equipment on underground circuits:

- a) Pad-mounted transformers
- b) Subsurface transformers

RESPONSE 5

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

- a) Pad-mounted transformers are the preferred installation method for transformers
- b) Subsurface transformers are generally avoided, and Pad-mounted transformers are preferred.

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QUESTION 6

For each of the undergrounding projects that SDG&E has planned for 2023, please answer the following questions on each project:

- a) How many SCADA underground switches will be installed?
- b) How many overhead switches will be removed?
- c) How many tie switches to adjacent circuits currently exist?
- d) How many OH tie switches to adjacent circuits will be removed?
- e) How many tie switches (OH or UG) will exist when the project is complete?
- f) How many SCADA overhead switches will be removed?
- g) How many SCADA underground switches will be installed as tie points to adjacent circuits?
- h) How many SCADA underground switches will be installed for sectionalizing?
- i) How many subsurface transformers will be installed?
- j) How many pad-mounted transformers will be installed?
- k) How many vaults will be installed?
- l) How many junction boxes will be installed?
- m) How many junction boxes will be installed for sectionalizing?
- n) How many junction boxes will be installed as tie points to adjacent circuits?
- o) How many load break elbows will be installed?
- p) How many load break elbows will be installed for sectionalizing?
- q) How many load break elbows will be installed as tie points to adjacent circuits?
- r) How many handholes will be installed?
- s) How many risers will be installed?

RESPONSE 6

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

- a) 2
- b) 5
- c) 1
- d) 1
- e) 1
- f) 0
- g) 1
- h) 0
- i) 0
- j) 341
- k) 0

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- l) 40
- m) 40
- n) 0
- o) 1671
- p) 1671
- q) 0
- r) 948
- s) 46

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QUESTION 7

For each of the undergrounding projects that SDG&E has planned for 2024, please answer the following questions on each project:

- a) How many SCADA underground switches will be installed in each circuit.
- b) How many overhead switches will be removed?
- c) How many tie switches to adjacent circuits currently exist?
- d) How many OH tie switches to adjacent circuits will be removed?
- e) How many tie switches (OH or UG) will exist when the project is complete?
- f) How many SCADA overhead switches will be removed?
- g) How many SCADA underground switches will be installed as tie points to adjacent circuits?
- h) How many SCADA underground switches will be installed for sectionalizing?
- i) How many subsurface transformers will be installed?
- j) How many pad-mounted transformers will be installed?
- k) How many vaults will be installed?
- l) How many junction boxes will be installed?
- m) How many junction boxes will be installed for sectionalizing?
- n) How many junction boxes will be installed as tie points to adjacent circuits?
- o) How many load break elbows will be installed?
- p) How many load break elbows will be installed for sectionalizing?
- q) How many load break elbows will be installed as tie points to adjacent circuits?
- r) How many handholes will be installed?
- s) How many risers will be installed?

RESPONSE 7

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8 and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

- a) 14
- b) 1
- c) 4
- d) 2
- e) 6
- f) 7
- g) 1
- h) 12
- i) 0
- j) 360
- k) 0
- l) 78
- m) 78

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- n) 0
- o) 1326
- p) 1326
- q) 0
- r) 976
- s) 68

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QUESTION 8

On page 155 of its WMP, SDGE discusses its WMP initiative related to Distribution Pole Replacements and Reinforcements.

Please provide the average, median, minimum and maximum age of poles that SDG&E:

- a) Replaced in 2020
- b) Repaired in 2020
- c) Replaced in 2021
- d) Repaired in 2021
- e) Replaced in 2022
- f) Repaired in 2022

RESPONSE 8

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

a) Replaced in 2020 average age = 40.7 years

Replaced in 2020 median age = 40.8 years

Replaced in 2020 minimum age = 0.2 years

Replaced in 2020 maximum age = 90.9 years

b) Repaired in 2020 average age = 50 years

Repaired in 2020 median age = 71 years

Repaired in 2020 minimum age = 15 years

Repaired in 2020 maximum age = 85 years

c) Replaced in 2021 average age = 42.9 years

Replaced in 2021 median age = 45 years

Replaced in 2021 minimum age = 0.25 years

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Replaced in 2021 maximum age = 101.5 years

d) Repaired in 2021 average age = 50.5 years

Repaired in 2021 median age = 49 years

Repaired in 2021 minimum age = 13 years

Repaired in 2021 maximum age = 101 years

e) Replaced in 2022 average age = 44 years

Replaced in 2022 median age = 47.2 years

Replaced in 2022 minimum age = 1.4 years

Replaced in 2022 maximum age = 84.4 years

f) Repaired in 2022 average age = 50 years

Repaired in 2022 median age = 47 years

Repaired in 2022 minimum age = 40 years

Repaired in 2022 maximum age = 71 years

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QUESTION 9

On page 155 of its WMP, SDGE discusses its WMP initiative related to Distribution Pole Replacements and Reinforcements.

Please provide the average, median, minimum and maximum age of poles that are scheduled to be:

- a) Replaced in 2023
- b) Repaired in 2023
- c) Replaced in 2024
- d) Repaired in 2024

RESPONSE 9

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

a) SDG&E cannot provide data for work currently in process for 2023 as the final engineering and design will determine whether the pole will be replaced or repaired. However, below are the statistics for poles replaced year-to-date in 2023:

Average age = 39.2 years

Median age = 37.8 years

Minimum age = 12.9 years

Maximum age = 76.3 years

- b) SDG&E no longer reinforces damaged poles in the HFTD. Instead, SDG&E replaces the pole.
- c) SDG&E cannot forecast work in 2024, as this work results from 2023 maintenance and inspections that have not yet been completed.
- d) SDG&E no longer reinforces damaged poles in the HFTD. Instead, SDG&E replaces the pole.

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QUESTION 10

Regarding pp. 165-166 of your 2023 WMP where SDG&E discusses initiatives related to the Installation of System Automation Equipment,

- a) What are the differences amongst Early Fault Detection (EFD), Wires Down Detection (WDD) and Falling Conduction Protection (FCP)?
- b) Please discuss the scope and status for EFD and its effectiveness with supporting data.
- c) Please discuss the scope and status for WDD and its effectiveness with supporting data.
- d) Please discuss the scope and status of FCP and its effectiveness with supporting data.

RESPONSE 10

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

- a) EFD aims to utilize technologies such as Advanced Radio Frequency Sensors (ARFS) and Power Quality (PQ) Meters to detect and prevent significant equipment failures in order to address fire risk while also gaining the benefits of reducing customer forced outages. Wire Down Detection (WDD) leverages our existing Advanced Metering Infrastructure (AMI) network, providing “near time” analysis of circuit events. Falling Conductor Protection (FCP) is designed to trip distribution and transmission overhead circuits before broken conductors can reach the ground energized.
- b) The EFD Program (WMP.1195) scope aims to utilize Advanced Radio Frequency Sensors (ARFS) and Power Quality (PQ) Meter technologies to detect and prevent significant equipment failures in order to address fire risk while also gaining the benefits of reducing customer forced outages. During the demonstration phase of the program the following items were damage found as a result of Early Fault Detection (EFD) technology:
 - (1) Broken ceramic insulator found and replaced that was not identified during routine patrols.
 - (2) Burned insulator found and replaced.
 - (3) Multiple wire splices with internal partial discharge found and replaced.
 - (4) Damaged insulator leaking to crossarm found and replaced.
 - (5) Bird nest found and removed.
 - (6) Bird-caged jumper found and replaced.
 - (7) Damaged conductor, loose (not broken) strand, deemed no structural damage by QEW.
 - (8) Bird-caged conductor found that was not identified during routine patrols; deemed no structural damage by QEW.
 - (9) Animal damage to dead-end insulator found and replaced.

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- (10) Multiple instances of cosmetic wire slap damage to conductor; deemed no structural damage by electric troubleshooter.

SDG&E considers the damage discovered as supportive of the efficacy of the system as designed and capable of detecting electrical components that pose a potential for risk.

- c) The scope of the Wire Down Detection (WDD) demonstration project was to use our existing AMI data to detect wire down in distribution networks. Preliminary analysis of WDD data showed promising results and the advanced analytics developed as part of this project demonstrated energized downed conductors and single-phase faults can be identified in near real time.
- d) FCP scope is a specific technology deployed as part of the overarching Advanced Protection Program (APP) as detailed in section 8.1.2.8.1 of our 2023-2025 WMP. The scope of Falling Conductor Protection (FCP) is to deploy sectionalizing devices such as reclosers, line monitoring sensors, and supporting network communication devices. FCP is designed to trip distribution and transmission overhead circuits before broken energized conductors can reach the ground.

SDG&E successfully detected a broken conductor which occurred on a recently enabled FCP circuit in October of 2022. On October 29, 2022, SDG&E responded to reports of a wire down. Upon arrival, it was confirmed there was a wire down and repairs were needed to restore the circuit to normal configuration.

Upon investigation of FCP event records, it was discovered that the SDG&E FCP scheme on the circuit successfully detected the broken conductor. The scheme was still in test mode at the time and did not act to trip the circuit segment, as SDG&E has not yet enabled full tripping mode. However, this event which demonstrates the efficacy of the system in a real world scenario. SDG&E is continuing its strategic deployment of FCP throughout the HFTD and will continue to validate real-world scenarios which improve the efficacy of the technology.

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QUESTION 11

Please provide an Excel sheet listing each circuit (in its own row) that had circuit outages that occurred from 2020 to 2022 in any HFTD area. *A circuit outage is when the Substation circuit breaker trips and de-energizes the entire circuit due to a fault.* For each circuit with an outage, the Excel sheet should list each Circuit Outage as a row. Please provide the following additional information (in columns):

- a)
- b) ID number of the circuit affected
- c) The date of the outage
- d) Cause of outage.
- e) For all equipment failure outages, please state the specific type of failure (i.e.: OH transformer failure, overload, cross arms, UG transformer failure, cable failure, splice failure etc.)
- f) The outage duration in minutes
- g) The total number of customers impacted.
- h) If all or part of the circuit is currently undergrounded, provide the date that OH to UG conversion was completed
- i) If all or part of the circuit is in scope of a planned undergrounding project, the forecast completion date of the OH to UG conversion project.

RESPONSE 11

SDG&E objects to the request on the grounds set forth in General Objections Nos. 1, 2, 5, 8, and 9. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

See attachment “CalPA-SDGE-2023WMP-11_Q11.xlsx.”

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QUESTION 12

Regarding SDG&E's Average Peak Load for UG Projects. For the purposes of this question, if any portion of a circuit was or will be undergrounded as part of an OH to UG conversion project, the circuit should be included:

- a) Provide the average peak load to circuit ampacity in percent for 2017 through 2019 for the circuits with OH to UG conversion completed in 2020.
- b) Provide the average peak load to circuit ampacity in percent for 2018 through 2020 for the circuits with OH to UG conversion completed in 2021.
- c) Provide the average peak load to circuit ampacity in percent for 2019 through 2021 for the circuits with OH to UG conversion completed in 2022.
- d) Provide the average peak load to circuit ampacity in percent for 2020 through 2022 for the circuits that will be undergrounded in 2023.
- e) Provide average peak load to circuit ampacity in percent for 2020 through 2022 for the circuits that will be undergrounded in 2024.
- f) Provide the average peak load to circuit ampacity in percent for 2020 through 2022 for all adjacent circuits to the circuits that have OH to UG conversion projects in 2023.
- g) Provide the average peak load to circuit ampacity in percent for 2020 through 2022 for all adjacent circuits to the circuits that have OH to UG conversion projects in 2024.

RESPONSE 12

SDG&E objects to the request on the grounds set forth in General Objections Nos. 2, 5, 8, 9 and 10. Subject to and without waiving the foregoing objections, SDG&E responds as follows:

Please see "CONFIDENTIAL Question 12.zip."

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END OF REQUEST