

**PACIFIC GAS AND ELECTRIC COMPANY**  
**Wildfire Mitigations Plans Discovery 2023-2025**  
**Data Response**

<b>PG&amp;E Data Request No.:</b>	SPD_024-Q008Supp01
<b>PG&amp;E File Name:</b>	WMP-Discovery2023-2025_DR_SPD_024-Q008Supp01
<b>Request Date:</b>	January 9, 2025
<b>Requester DR No.:</b>	SPD_WSPS_PG&E_2025_001
<b>Requesting Party:</b>	Safety Policy Division
<b>Requester:</b>	Henry Sweat
<b>Date Sent:</b>	January 23, 2025 Supp01: February 7, 2025

**QUESTION 008**

Provide GIS maps that show the underground lines which include the installation date of the underground lines.

- a. Provide a list of segments of underground lines which have been de-energized during PSPS events since 2017, with the date each segment was de-energized. Include underground circuit segments which were de-energized by an outage on an upstream circuit segment, which lead to an outage of the underground circuit segment.
- b. Provide a list of segments of underground lines since 2021 which were de-energized during an outage when EPSS was enabled with the relevant outage id. Include underground circuit segments which were de-energized by an outage on an upstream circuit segment, which lead to an outage of the underground circuit segment.

**ANSWER 008 JANUARY 23, 2025**

PG&E interprets the request for “GIS maps” as seeking geospatial data. Please see the following attachments for data on PG&E’s primary underground lines as of January 16, 2024. The lines were selected by querying our Electric Distribution GIS (EDGIS) system of record where the primary line’s Install Code attribute is underground.

- *“WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Atch01CONF.gdb.zip”* – a geodatabase containing line features representing distribution primary underground lines.
- *“WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Atch02CONF.xlsx”* – a tabular list of the lines contained in the accompanying geodatabase.

Both files contain the following fields/attributes:

- Circuit ID;
- Circuit Name;
- Status – indicates if the line is ‘In Service’ or ‘Idle’;

- Install Year – where available, the year that the line was installed;
  - Customer Owned – where available, indicates the ownership of the line;
  - Global ID – the record’s unique identifier that correlates to the line feature in the accompanying geodatabase.
- a. Please see attachment “*WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Atch03.xlsx*”, (‘8a-PSPS’ worksheet), for a list of PSPS outages that involved circuit segments that contain undergrounded lines. Circuit segments with undergrounded lines may only limit PSPS impacts if the entire circuit is undergrounded upstream to the substation. Note the following regarding the data:
- Circuit segments are reported in this response because they contain at least a portion of distribution underground infrastructure.
  - The PSPS system of record captures outages at the service point and transformer level, which is then mapped to a circuit segment.
  - The PSPS system of record does not capture the type of line (overhead vs underground) of the circuit segment at the time of the outage. Therefore, the PSPS system of record has been compared to System Hardening and Undergrounding records to determine if a circuit segment contained distribution underground infrastructure at the time of the outage.
    - This approach does not account for undergrounding work under Rule 20A, 20B, or 20C, and does not account for pre-existing underground lines prior to the inception of the System Hardening and Undergrounding programs.
    - PG&E is currently conducting a more comprehensive analysis that will include results for all underground lines. This updated list will be submitted to SPD as a supplemental response to this data request.
  - Some PSPS outages do not have an attributed circuit segment. These records were not included in the comparison described above.
  - The data includes circuit segments that were de-energized because an upstream circuit segment was de-energized.
- b. Please see attachment “*WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Atch03.xlsx*” (‘8b-EPSS’ worksheet) for a list of EPSS outages that involved circuit segments that contain undergrounded lines. Note the following regarding the data:
- Circuit segments are reported in this response because they contain at least a portion of distribution underground infrastructure.
  - The EPSS system of record does not capture the type of line (overhead vs underground) of the circuit segment at the time of the outage. Therefore, the EPSS system of record has been compared to System Hardening and Undergrounding records to determine if a circuit segment contained distribution underground infrastructure at the time of the outage.
    - This approach does not account for undergrounding work under Rule 20A, 20B, or 20C, and does not account for pre-existing underground

lines prior to the inception of the System Hardening and Undergrounding programs.

- PG&E is currently conducting a more comprehensive analysis that will include results for all underground lines. This updated list will be submitted to SPD as a supplemental response to this data request.
- The data does not include circuit segments that were de-energized because an upstream circuit segment was de-energized.

#### **ANSWER 008 SUPPLEMENTAL 01 FEBRUARY 7, 2025**

PG&E is providing results from additional analysis to support the response to questions 8a and 8b.<sup>1</sup>

As described below, the original analysis was based on outage data paired with undergrounding conducted as part of the system hardening program, while the supplemental analysis is based on geospatial data of all undergrounding paired with outage data:

- **Original analysis** – starting with a list of all PSPS and EPSS outages, the affected circuit segments were compared to the System Hardening project log to correlate with circuit segments that were undergrounded before the outage took place. This yielded a list of circuit segments with underground lines that were installed through the System Hardening program only, not all other undergrounding infrastructure.
- **Supplemental analysis** – starting with a list of all underground distribution primary lines identified in EDGIS (Electric Distribution GIS, as of 1/28/25, the circuit segments of those lines were compared to the PSPS and EPSS outages to correlate the circuit segments that experienced an outage. This yields a list of all circuit segments with underground lines from our GIS system of record.

The approach of the supplemental analysis results in a more comprehensive list of PG&E distribution underground primary lines that have been affected by outages. The original approach only considered undergrounded lines installed through the System Hardening program.

Please see attachment “*WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Supp01Atch01.xlsx*” for a list of circuit segments that have experienced either a PSPS or EPSS outage between 2017 and 2024. Note the following regarding the data:

- Circuit segments are included in this response if they contain a non-zero amount of distribution underground infrastructure and experienced PSPS and/or EPSS impacts.
- The analysis is based on a list of transformers that are fed by underground primary conductor.

---

<sup>1</sup> Please note that our response on January 23, 2025, stated that we were providing “data on PG&E’s primary underground lines as of January 16, 2024.” This was a typo; the data provided was as of January 16, **2025**.

- Although a circuit segment may be listed as experiencing an outage, the specific span on that circuit segment where the outage originated may not be underground.
  - There may be undergrounding work completed in the field that is not yet recorded in our GIS. In these cases, the applicable underground circuit segment may not be included in the list.
  - To determine if a circuit segment contained underground infrastructure, the installation date of the underground infrastructure was compared to the outage date. There are circuit segments that do not have an installation date in our GIS; these circuit segments were not included in this analysis.
  - The EPSS program was implemented by PG&E in late 2021.
  - Circuit configurations and naming conventions change over time. The provided Circuit ID and Circuit Name reflect data as of 1/31, while the provided WDRM V4 circuit segment names are static. Thus, the provided circuit name may not match the circuit name implied by the circuit segment name.
  - Please note that outage reduction due to undergrounding may be contingent on the configuration of the grid at the time of the PSPS event or EPSS outage.
- a. See column D (Count of PSPS Outages) of the attachment to identify the circuit segments that have experienced a PSPS outage.
- Circuit segments that were de-energized because an upstream circuit segment was de-energized (as part of a PSPS outage) are included in this list but cannot be differentiated from circuit segments that were targeted for PSPS.
  - Please note that whether an area is subject to PSPS events after lines in that area have been undergrounded depends on whether, and how much of, the upstream and downstream line sections have been undergrounded. For example, an underground circuit segment may experience a PSPS outage if the undergrounded section remains connected to an overhead line (either upstream or downstream) that is subject to PSPS. As PG&E completes additional undergrounding, and underground sections are connected, more PSPS risk will be mitigated.
  - See worksheet 'Q8a – PSPS Outages' for a list of each aforementioned circuit segments' outage dates and event identifier.
- b. Please see attachment "*WMP-Discovery2023-2025\_DR\_SPD\_024-Q008Supp01Atch0.xlsx*," ('8b-EPSS' worksheet). See column E (Count of EPSS Outages) of the attachment to identify the circuit segments that have experienced a EPSS outage. Note the following regarding the data:
- Circuit segments that were de-energized because an upstream circuit segment was de-energized (due to an EPSS outage) is not available in our records and are not included in this list.
  - See worksheet 'Q8b – EPSS Outages' for a list of each aforementioned circuit segments' outage dates and report identifier.

PG&E would be pleased to meet with SPD to discuss the information provided in this response, if it would be helpful.