

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

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| PG&E Data Request No.: | OEIS_023-Q002 | | |
| PG&E File Name: | WildfireMitigationPlansDiscovery2023_DR_OEIS_023-Q002 | | |
| Request Date: | June 20, 2024 | Requester DR No.: | OEIS-P-WMP_2024-PG&E-008 |
| Date Sent: | July 1, 2024 | Requesting Party: | Office of Energy Infrastructure Safety |
| DRU Index #: | | Requester: | Nathan Poon/ Brad Hill |

SUBJECT: REGARDING PG&E'S TRANSMISSION ASSET INSPECTION PROGRAMS AND PILOTS

QUESTION 002

- a. Provide the find rate of level 1 and 2 conditions and number of inspections performed from January 1, 2020, to December 31, 2023, for the following inspection initiatives and pilot programs. If the inspection initiative or pilot began after January 1, 2020, please specify the start date of the initiative in the response.
- i. Aerial detailed inspections
 - ii. Infrared inspections
 - iii. Conductor measurement
 - iv. Below grade foundation assessment
 - v. Corona inspections
 - vi. Ultrasonic pole inspections
 - vii. Corrosion climbing assessment
 - viii. Proactive sampling and testing
 - ix. LiDAR assessment
 - x. Climbing detailed inspections
 - xi. Intrusive Pole inspections
 - xii. Patrol inspections
- b. For each inspection initiative or pilot below, please provide the estimated percentage of conditions that PG&E would likely not have identified through climbing detailed, patrol, or intrusive pole inspections. Describe how PG&E calculated this estimated percentage.
- i. Aerial detailed inspections
 - ii. Infrared inspections
 - iii. Conductor measurement
 - iv. Below grade foundation assessment
 - v. Corona inspections

- vi. Ultrasonic pole inspections
- vii. Corrosion climbing assessment
- viii. Proactive sampling and testing
- ix. LiDAR assessment

ANSWER 002

- a. The three tables below provide the number of completed inspection units, Level 1 and Level 2 finds (count of notifications) and the Level 1 and Level 2 find rates (notifications per inspection unit). The counts of notifications for aerial and climbing detailed inspections, LiDAR assessment, intrusive pole inspections, and patrols are derived from the dataset used to generate Table 2 in the 2024 Q1 WMP QDR. The counts of aerial inspections from 2021-2023 also are taken from Table 2 of the QDR. The counts of climbing detailed inspections and patrols are derived from data in SAP. The inspection units and counts of notifications for the remaining programs are based on data collected by the program managers.

Table 1: Completed inspection units.

| | | 2020 | 2021 | 2022 | 2023 |
|---------------------------------------|------------------------------|---------------|---------------|---------------|---------------|
| | Inspection units | # Inspections | # Inspections | # Inspections | # Inspections |
| i. Aerial detailed inspections | Structures | 52,834 | 66,645 | 59,022 | 50,491 |
| ii. Infrared inspections | Miles | 5,355 | 7,500 | 9,474 | 8,011 |
| iii. Conductor measurement | Spans | 3 | 13 | 13 | 0 |
| iv. Below grade foundation assessment | Structures (started in 2021) | N/A | 99 | 545 | 352 |
| v. Corona inspections | Miles | 5,355 | 7,500 | 9,474 | 8,011 |
| vi. Ultrasonic pole inspections | Structures (started in 2022) | N/A | N/A | 157 | 8 |
| vii. Corrosion climbing assessment | Structures (started in 2023) | N/A | N/A | N/A | 172 |
| viii. Proactive sampling and testing | Samples | 3 | 17 | 25 | 17 |
| ix. LiDAR assessment | Spans (started in 2023) | N/A | N/A | N/A | 27,147 |

| | | 2020 | 2021 | 2022 | 2023 |
|---|------------------|---------------|---------------|---------------|---------------|
| | Inspection units | # Inspections | # Inspections | # Inspections | # Inspections |
| x. Climbing detailed inspections | Structures | 2,911 | 3,317 | 3,607 | 4,180 |
| xi. Intrusive Pole inspections | Structures | 14,841 | 17,512 | 12,645 | 10,376 |
| xii. Patrol inspections | Structures | 142,660 | 130,677 | 111,206 | 105,480 |

Table 2: Level 1 and Level 2 finds (count of notifications)

| | 2020 | 2021 | 2022 | 2023 | 2020 | 2021 | 2022 | 2023 |
|--|-----------------------|---------------|---------------|---------------|-----------------------|---------------|---------------|---------------|
| | Level 1 Finds | Level 1 Finds | Level 1 Finds | Level 1 Finds | Level 2 Finds | Level 2 Finds | Level 2 Finds | Level 2 Finds |
| i. Aerial detailed inspections | 178 | 103 | 88 | 234 | 17,159 | 22,666 | 21,508 | 15,289 |
| ii. Infrared inspections | 0 | 1 | 2 | 2 | 3 | 15 | 12 | 16 |
| iii. Conductor measurement | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| iv. Below grade foundation assessment | N/A – started in 2021 | 0 | 0 | 0 | N/A – started in 2021 | 9 | 3 | 0 |
| v. Corona inspections | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| vi. Ultrasonic pole inspections | N/A – started in 2022 | N/A | 0 | 0 | N/A – started in 2022 | N/A | 0 | 0 |
| vii. Corrosion climbing assessment | N/A – started in 2023 | N/A | N/A | 0 | N/A – started in 2023 | N/A | N/A | 62 |

N/A – started in 2023

N/A – started in 2023

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|---|--|-----|-----|-----|-------|-------|-------|-------|
| viii. Proactive sampling and testing | N/A - sampling drives proactive repair/replace decisions | | | | | | | |
| ix. LiDAR assessment | N/A | N/A | N/A | 1 | N/A | N/A | N/A | 727 |
| x. Climbing detailed inspections | 1 | 0 | 0 | 0 | 335 | 251 | 616 | 512 |
| xi. Intrusive Pole inspections | 0 | 0 | 1 | 4 | 221 | 191 | 1,637 | 1,242 |
| xii. Patrol inspections | 456 | 420 | 226 | 497 | 1,047 | 1,267 | 715 | 508 |

Table 3: Level 1 and Level 2 find rates (count of notifications per inspection unit)

| | 2020 | 2021 | 2022 | 2023 | 2020 | 2021 | 2022 | 2023 |
|---------------------------------------|--|-------------------|-------------------|-------------------|-----------------------|-------------------|-------------------|-------------------|
| | Level 1 Find Rate | Level 1 Find Rate | Level 1 Find Rate | Level 1 Find Rate | Level 2 Find Rate | Level 2 Find Rate | Level 2 Find Rate | Level 2 Find Rate |
| i. Aerial detailed inspections | 0.00337 | 0.00155 | 0.00149 | 0.00463 | 0.32477 | 0.34010 | 0.36441 | 0.30281 |
| ii. Infrared inspections | 0.00000 | 0.00013 | 0.00021 | 0.00025 | 0.00056 | 0.00200 | 0.00127 | 0.00200 |
| iii. Conductor measurement | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| iv. Below grade foundation assessment | N/A – started in 2021 | 0.00000 | 0.00000 | 0.00000 | N/A – started in 2021 | 0.09091 | 0.0550 | 0.00000 |
| v. Corona inspections | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00000 | 0.00011 | 0.00000 |
| vi. Ultrasonic pole inspections | N/A – started in 2022 | N/A | 0.00000 | 0.00000 | N/A – started in 2022 | N/A | 0.00000 | 0.00000 |
| vii. Corrosion climbing assessment | N/A – started in 2023 | N/A | N/A | 0.00000 | N/A – started in 2023 | N/A | N/A | 0.36047 |
| viii. Proactive sampling and testing | N/A - sampling drives proactive repair/replace decisions | | | | | | | |
| ix. LiDAR assessment | N/A | N/A | N/A | 0.00004 | N/A | N/A | N/A | 0.02678 |
| x. Climbing detailed inspections | 0.00034 | 0.00000 | 0.00000 | 0.00000 | 0.11508 | 0.07567 | 0.17078 | 0.12249 |
| xi. Intrusive Pole inspections | 0.00000 | 0.00000 | 0.00008 | 0.00039 | 0.01489 | 0.01091 | 0.12946 | 0.11970 |
| xii. Patrol inspections | 0.00320 | 0.00321 | 0.00203 | 0.00471 | 0.00734 | 0.00970 | 0.00643 | 0.00482 |

b.

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| i. Aerial detailed inspections | PG&E estimates roughly >2/3 of Aerial finds would not have been identified through Ground inspections based on an analysis of tags found on structures receiving Ground and Aerial inspections in the same year. Note this is due to the difference in vantage point and the aerial review process allowing for additional data sources during desktop review. |
| ii. Infrared inspections | PG&E estimates the majority of infrared findings would not be identified through other inspection methods due to the failure mode being internal electrical connection degradation not visible externally. |
| iii. Conductor measurement | PG&E estimates the majority of LineVue findings would not be identified through other inspection methods due to the failure mode being internal steel core conductor corrosion not visible externally. |
| iv. Below grade foundation assessment | PG&E estimates the majority of below grade foundation findings would not be identified through other inspection methods due to the failure mode being foundation integrity degradation not visible to the above ground inspection methods. |
| v. Corona inspections | PG&E does not have an estimate at this time due to the small number of finds. |
| vi. Ultrasonic pole inspections | PG&E does not have an estimate at this time due to the lack of findings. |
| vii. Corrosion climbing assessment | PG&E estimates that the majority of findings could be identified through a detailed Climbing, Aerial, or Ground inspection due to the visual assessment tower members during the pilot. This pilot includes quantitative measurement of material loss due to corrosion which provides input into calibration of our asset degradation model and informs asset repair vs replace decisions. |
| viii. Proactive sampling and testing | PG&E does not have an estimate at this time. The findings of this pilot mainly inform proactive repair/replace decisions. |
| ix. LiDAR assessment | PG&E estimates the majority of LiDAR findings would not be identified through other inspection methods due to the quantitative spatial nature which is difficult for other inspection methods to provide. |