Count	Party Name	Data Set	Data Request	Question No.	Suppl/Rev	Question ID	Question Text	Responses	Requestor	Date Rec'd	Final Due Date	Date Sent	Links	Number of Attchs	NDA Required	2025 WMP Section	Category	Subcategory
1	TURN	002	TURN_002	1	No	TURN_002_Q1	Section 5.2.1, page 57 states, "starting in January 2023, PG&E incorporated additional customers who could be impacted into the PSPS consequence model and classified them as Potentially-Impacted Customers (PIC)." a. How were the PIC selected? b. How were they initially identified? c. What types of consequences do they have that were not included in the 12-year customer lookback? d. Please explain the basis for PG&E's belief that "not every customer who could experience a PSPS event is captured in the historical backcast." e. Regarding the statement on page 57 that "this enables the calculation of roughly double the potentially-affected customers …", please provide the specific data on which this statement is based.	Please note that, PG&E no longer accounts for Potentially Impacted Customers (PICs) in its PSPS consequence model due to the low incremental risk values associated with customers that were not included in our lookback. Thus, the statement on page 57 of the 2026-2028 WMP is historical in nature. a. The selection criteria for PICs were created by using our distribution planning models under the scenario of "what if" every distribution line in HFTD/HFRA is required to be de-energized. b. Potentially impacted customers (i.e. all customers who would impacted by the theoretical de-energization of every HFTD/HFRA distribution line) were identified through our distribution planning models. WMP-Discovery 2026-2028_DR_TURN_002-Q001 Page 2 c. The inclusion of PICs results in an increased risk associated with customers in locations where PSPS thresholds were not met in our historical lookback, but have exposure to PSPS risk based on HFTD/HFRA location and system configuration. This evaluation does not include the addition of new consequences. d. The meaning behind this statement is that this is a low probabilistic event, and the intent was to assign risk exposure to customers that are not accounted for in PG&E's traditional lookback. This is because our lookback is based on historical weather conditions that have met PSPS thresholds to initiate a PSPS event. This is not to say that locations in HFTD that have never met PSPS thresholds could not see an event in the future. e. This statement is based on the idea that all customers that would be impacted by the theoretical de-energization of every HFTD/HFRA distribution line, minus the unique customers included in our lookback.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	5	Risk Methodology & Assessment	5.2.1
2	TURN	002	TURN_002	2	No	TURN_002_Q2	Section 5.2.2.1 page 63 provides the formula for PSPS likelihood. Please explain why 5 years was selected as the denominator?	PG&E's lookback is used to estimate PSPS consequence and includes 2018-2022 data (5 years). This is to align with the initiation and execution of PSPS events in 2018. PG&E's enterprise risk model also includes an additional 2 years of data (2023-2024) that was not included in the existing lookback due to meteorology polygons not being available at the time of the analysis. To address this data gap, PG&E used actual PSPS events but determined the customer impact by de-energizing the upstream device as would be specified using our most recent PSPS guidance and protocols.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	5	Risk Methodology & Assessment	5.2.2.1
3	TURN	002	TURN_002	3	No	TURN_002_Q3	Section 6.1.2, page 118 states that, instead of undergrounding, "in certain circumstances we may choose to overhead harden a circuit segment or portion of a circuit segment because of feasibility constraints." Please identify and explain each and every criterion that PG&E would use to determine that feasibility constraints have reached the point that PG&E would choose overhead hardening over undergrounding and how PG&E would decide, based on those criteria, that overhead hardening is the best choice.	PG&E objects to this request as it is overbroad, vague, ambiguous, and unduly burdensome. It is not possible to identify every single criterion that PG&E could use in evaluating the feasibility of a project. Notwithstanding and without waiving this objection, PG&E responds as follows: The feasibility of installing underground infrastructure can vary significantly across PG&E's service area, and therefore, the specific circumstances and facts must be evaluated for each case. Certain conditions may necessitate overhead hardening instead of undergrounding due to feasibility constraints. These conditions may include, but are not limited to: • Culturally Restricted Areas: Locations where underground installation may not be permitted due to cultural or historical considerations. • Geographical Challenges: Situations such as large water crossings where bridge attachments are not possible or large canyon crossings where no reasonable underground path exists. • Legal and Land Use Constraints: Inability to acquire the necessary easements or rights to install underground infrastructure. WMP-Discovery 2026-2028_DR_TURN_002-Q003 Page 2 • Geological Conditions: Presence of hard rock or granite terrain, where excavation costs are prohibitively high. These feasibility constraints are reviewed during the scoping process, and the associated costs are included in mitigation scenario analyses, such as the Cost-Benefit Ratio (CBR). This evaluation may lead to choosing a hybrid solution in some cases. In other instances, feasibility constraints become apparent later in the project lifecycle. When this occurs, decisions regarding overhead hardening versus undergrounding are made based on financial implications, timing considerations, risk assessment, and constructability challenges. This ensures that the selected approach is the most feasible and effective given the circumstances.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.2
4	TURN	002	TURN_002	4	No	TURN_002_Q4	Section 6.1.3.1, page 129, states, "While undergrounding is PG&E's preferred solution for mitigating ignition risk in the highest risk areas, we recognize that undergrounding takes longer to execute than overhead hardening and is a more costly investment in the short term[,]" and "Covered conductor can generally be installed more quickly and costs less than undergrounding, but it does not protect against tree strike risk or fully address the reliability risk[,]" and concludes that "undergrounding, where feasible, is the best alternative where tree strike risk is high." This conclusion does not address the information provided in Table 6.1.3-1 on page 128. Please explain why the cost and timing of undergrounding, which the table provides has a 98-99% average effectiveness, is preferred to the combination of covered conductor, EPSS, and PSPS, which the table provides has a 97% average effectiveness.	We disagree that this conclusion is not addressed. On page 128, we noted that "[t]he combined use of covered conductor, EPSS, and PSPS introduces a high likelihood of system outage risk and is disruptive to our customers." As further and more fully described in Section 6.1.3.2 (pg. 134-135) and in PG&E's 2025 WMP Update, ACI 23-05 (pp. 56-57), PG&E recognizes that overhead hardening can be installed more quickly than an undergrounding solution; however, the initial risk reduction achieved from quicker installation of an overhead mitigation does not compensate for the greater total, more permanent risk reduction achieved over the lifetime of an underground solution. Undergrounding is preferred to the combination of covered conductor, EPSS, and PSPS because it nearly eliminates wildfire risk. We expect undergrounding to also reduce reliability risk and the need to operate and maintain overhead equipment and clearing vegetation around the overhead facilities. PG&E's intent is to significantly reduce reliability impacts of outage programs and to offer near permanent solutions to the highest risk areas.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.1
5	TURN	002	TURN_002	5	No	TURN_002_Q5	Regarding Table PG&E-6.1.3-1 on page 128, please provide the supporting data on which the "Blended Average Effectiveness" values for Rows 4, 5, and 6 are based.	Please refer to "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx" The table below is a summary of references for the supporting data for each of the Blended Average Effectiveness values from Table PG&E-6.1.3-1 in the attached Excel sheet. Line No. System Hardening Mitigations Blended Average Effectiveness (a) Notes 2015-2024 1 Undergrounding All (b) 99% See "Effectiveness Analysis" tab for supporting data 2 Undergrounding Primary Distribution Lines (c) 98% See "Effectiveness Analysis" tab for supporting data 3 Line Removal with Remote Grid 98% See "Effectiveness Analysis" tab for supporting data 4 Covered Conductor + EPSS + PSPS (d) 97% Calculated value using formula outlined in footnote (d). See 4a. And 4b. for input	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3-1
6	TURN	002	TURN_002	6	No	TURN_002_Q6	Section 6.1.3.2, page 134, states: "Overhead system hardening combined with operations mitigations EPSS and PSPS has a high-risk reduction benefit that is roughly comparable to that of undergrounding without these operational mitigations. PG&E continues to prefer undergrounding on high-risk circuits where feasible for several reasons. Undergrounding is permanent risk reduction that does not have the negative reliability impacts from PSPS and EPSS. Underground facilities are less likely to be damaged during winter storms by high winds and vegetation falling into lines damaging the facilities or other contact with the lines from third parties. Over time, undergrounding also has lower operations and maintenance expenses." a. Please provide any studies or reports in PG&E's possession that compare the long-term or life cycle costs of undergrounding with the costs of overhead hardening combined with EPSS and PSPS. b. Please provide any studies or reports in PG&E's possession that compare the long-term or life cycle costs of undergrounding with the costs of overhead hardening combined with EPSS, PSPS, and remote grids to reduce the reliability impacts of EPSS and PSPS. c. Please provide any studies or reports in PG&E's possession that compare the operations and maintenance expenses of undergrounding with overhead hardening. d. Please provide any studies or reports in PG&E's possession that compare the operations and maintenance expenses of undergrounding with overhead hardening, combined with EPSS and PSPS. e. Please provide any studies or reports in PG&E's possession that compare the reliability (e.g., SAIDI, SAIFI, CAIDI, etc.) of undergrounded vs. overhead hardened facilities. f. Please provide any studies or reports in PG&E's possession that compare the reliability (e.g., SAIDI, SAIFI, CAIDI, etc.) of undergrounded vs. overhead hardened facilities – not including the	Please see PG&E's responses below: 1,2,3 PG&E has performed and will continue to perform a reasonably diligent search for any relevant studies or reports and will supplement this response if any are identified. a. As described in the 2023-2025 WMP (Revision Notice PG&E-23-05), PG&E is developing a tool that we anticipate using in future regulatory filings. The tool, referred to as the Wildfire Benefit Cost Analysis (WBCA) tool, will compare the long-term costs of undergrounding to the long-term costs for other mitigations including overhead hardening combined with EPSS and PSPS and line removal with remote grid. The tool will consider capital installation costs and several categories of O&M costs such as patrols and inspections, emergency response, and vegetation management. The output from the tool will be a comparison of the long-term costs and benefits for different mitigation alternatives. b. As described in the 2023-2025 WMP (Revision Notice PG&E-23-05), PG&E is developing a tool that we anticipate using in future regulatory filings. The tool, referred to as the Wildfire Benefit Cost Analysis (WBCA) tool, will compare the long-term costs of undergrounding to the long-term costs for other mitigations including overhead hardening combined with EPSS and PSPS and line removal with remote grid. The tool will consider capital installation costs and several categories of O&M costs such as patrols and inspections, emergency response, and vegetation management. The output from the tool will be a comparison of the long-term costs and benefits for different mitigation alternatives. 1 PG&E is aware of various studies produced by academic institutions and third-parties that compare the costs and benefits of undergrounding to other mitigations. See, for example, Dynamic Grid Management Technologies Reduce Wildfire Adaptation Costs in the Electric Power Sector. PG&E has not reviewed and does not necessarily support the information or conclusions in these third-party and academic studies. 2 Note, in the 2023 GRC PG&E prepared data response GRC-2023-PH_DR_TURN_154_Q014Supp01 that included an analysis of long-term operations and maintenance costs associated with its 2023 GRC undergrounding proposal. The system hardening milage assumptions and cost assumptions used in this analysis were based on information from the 2023 GRC and in many cases are no longer relevant. PG&E is identifying the study in order to be responsive to the data request but notes that the	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.2

6	TURN	002	TURN_002	6(s)	Yes	TURN_002_Q6(s)	Section 6.1.3.2, page 134, states: "Overhead system hardening combined with operations mitigations EPSS and PSPS has a high-risk reduction benefit that is roughly comparable to that of undergrounding without these operational mitigations. PG&E continues to prefer undergrounding on high-risk circuits where feasible for several reasons. Undergrounding is permanent risk reduction that does not have the negative reliability impacts from PSPS and EPSS. Underground facilities are less likely to be damaged during winter storms by high winds and vegetation falling into lines damaging the facilities or other contact with the lines from third parties. Over time, undergrounding also has lower operations and maintenance expenses." a. Please provide any studies or reports in PG&E's possession that compare the long-term or life cycle costs of undergrounding with the costs of overhead hardening combined with EPSS and PSPS. b. Please provide any studies or reports in PG&E's possession that compare the long-term or life cycle costs of undergrounding with the costs of overhead hardening combined with EPSS, PSPS, and remote grids to reduce the reliability impacts of EPSS and PSPS. c. Please provide any studies or reports in PG&E's possession that compare the operations and maintenance expenses of undergrounding with overhead hardening. d. Please provide any studies or reports in PG&E's possession that compare the operations and maintenance expenses of undergrounding with overhead hardening, combined with EPSS and PSPS. e. Please provide any studies or reports in PG&E's possession that compare the reliability (e.g., SAIDI, SAIFI, CAIDI, etc.) of undergrounded vs. overhead hardened facilities. f. Please provide any studies or reports in PG&E's possession that compare the reliability (e.g., SAIDI, SAIFI, CAIDI, etc.) of undergrounded vs. overhead hardened facilities – not including the reliability impacts of PSPS and EPSS.	e. PG&E analyzed the reliability performance on sections of circuits where we performed undergrounding work in 2022 and 2023 to quantify overall improvements to service reliability and showed approximately a 90% reduction in faults that resulted in sustained outages after undergrounding work was completed. Please see Section 8.2.2 of our 2026-2028 WMP. Please note that this analysis did not compare undergrounding to overhead hardening. Please refer to Section 6.2.1.2 for PG&E's explanation of risk impacts of mitigation activities including covered conductor and undergrounding. PG&E is not currently aware of any studies or reports in PG&E's possession that compare the reliability of undergrounded and overhead hardened facilities. Ultimately, we expect undergrounded lines to be less susceptible to outage-causing conditions associated with exposed overhead lines such as damage and/or vegetation contact from severe winds, animal contact, line slap or wire down. f. PG&E analyzed the reliability performance on sections of circuits where we performed undergrounding work in 2022 and 2023 to quantify overall improvements to service reliability and showed approximately a 90% reduction in faults that resulted in sustained outages after undergrounding work was completed. Please see Section 8.2.2 of our 2026-2028 WMP. Please note that this analysis did not compare undergrounding to overhead hardening. We are not aware of any studies or reports that are in our possession that compare the reliability of undergrounded vs. overhead hardened facilities—not including the reliability impacts of PSPS and EPSS; however, we expect undergrounded lines to be less susceptible to outage-causing conditions associated with exposed overhead lines such as damage and/or vegetation contact from severe winds, animal contact, line slap or wire down.	A Mireille Fall-Fry	4/7/2025	4/14/2025	4/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.2
7	TURN	002	TURN_002	7	No	TURN_002_Q7	The microgrids discussed in 8.2.7 are said to not impact reliability because they are not dependent on upstream lines. Do they increase reliability in areas where they have been installed and can they be deployed in conjunction with other hardening mitigations to minimize reliability concerns?	Section 8.2.7 addresses three microgrid related initiatives. Remote Grids Remote grids are not connected to the distribution system, as they place generation assets right at the customer locations and the upstream distribution line to that location is removed. Therefore, any reliability concerns due to outages from the upstream distribution system are eliminated in the Remote Grid system architecture. Temporary Distribution Microgrids These microgrids are not set to 'automatically' energize upon an outage condition; they are manually operated to isolate and energize the microgrid footprint once the PSPS event has de-energized the area, in a pre-planned, pre-staged, pre-resourced manner due to its inherent design. While it is possible that they could be utilized during unplanned or planned outages, it would be highly dependent upon whether the temporary generators are pre-staged at the location, whether the location is safe to actually energize in that outage, and whether the actual process of energizing the microgrid (and subsequently restoring back to source), is actually beneficial from an outage duration standpoint versus simply patrolling, repairing, and restoring the outage condition. Since these temporary distribution microgrids utilize reciprocating engine generating assets, the ability to 'automatically' energize these locations is not available. Community Microgrid Enablement Program and Microgrid Incentive Program WMP-Discovery 2026-2028_DR_TURN_002-Q007 Page 2 These microgrids are community driven and could increase reliability in areas where they are installed, but are dependent upon the condition and nature of the outages and the grid design of the microgrid footprint that determine its conditions for safe operations. Each microgrid being requested to be designed by these communities through these funds are unique and therefore their impact on reliability is dependent upon their design, operational cost/benefit, and the preventative, denial objectives	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.7
8	TURN	002	TURN_002	8	No	TURN_002_Q8	Section 7, page 170, states that "during the July 2, 2024[,] PSPS event, we were able to reduce the event duration for some customers by temporarily re-energizing a line that serves a portion of the impacted customers[,]" and "[w]e may offer temporary re-energization during future PSPS events where conditions allow." What conditions are necessary to replicate partial or temporary re-energization during PSPS events?	As described Section 7, page 170 "PSPS Lessons Learned" and explained in PG&E's post de-energization report for the July 2, 2024 PSPS event, two severe wind events were forecasted to come in separate back to back waves. The first wind event meeting PSPS criteria occurred during overnight period of July 1-2 with a brief lull in the winds that occurred during the day of July 2. The second forecasted wave of critical fire weather conditions meeting our PSPS criteria was forecasted to occur later in the evening which allowed us to patrol and temporarily re-energize the portion of the customers who were impacted by the first wave to allow customers to cool their homes and charge their devices. On the evening of July 2, weather conditions deteriorated rapidly meeting our PSPS criteria and requiring us to de-energize a second time as a result of the second wave of severe weather conditions. Please see the following link for our July 2, 2024 post de-energization report: https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-andsupport/PGE_PSPS_Post-Event_Report_20240702-amended.pdf Generally, conditions that allow PG&E to temporarily re-energize during PSPS events are the lull in critical weather conditions. The lull period would need to have sufficient time for our crews to patrol following the weather all-clear. Weather "All-Clears" are called based on pre-defined, geographic areas and mapping of each weather station in each zone to that area. WMP-Discovery 2026-2028_DR_TURN_002-Q008 Page 2 Please note that the specific conditions that arose during the July 2, 2024 event allowed PG&E to temporarily re-energize a portion of the affected customers, but that such temporary re-energization is condition and event-specific and not a programmatic application strategy to reduce PSPS duration.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	7	Public Safety Power Shutoff	7
9	TURN	002	TURN_002	9	No	TURN_002_Q9	Please fill in the values in the following table (all units are miles):	Please see attachment "WMP-Discovery2026-2028_DR_TURN_002-Q009Atch01.xlsx". The following considerations and assumptions are applied to this response: • If a subproject spans multiple High Fire-Threat District (HFTD) tiers, the subproject is attributed to the higher tier (e.g., if a subproject falls under both Tier 2 and Tier 3, its mileage is attributed to Tier 3). For data on overhead miles replaced by undergrounding: a. For subprojects that are 100% undergrounding with available overhead removal data, the reported figures reflect the overhead miles removed. b. For hybrid subprojects (partially underground and a combination of overhead hardening and/or line removal) or cases where overhead removal data is unavailable, miles are calculated using a conversion factor: 1 mile of overhead equals 1.25 miles of undergrounding. WMP-Discovery 2026-2028_DR_TURN_002-Q009 Page 2 • Since the template does not request miles completed outside HFTDs, this response excludes system hardening work under the Community Rebuild program. • The original table requested both 2023 actuals and planned miles. We updated our response to include actuals through 2024 and planned work for 2025.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.2
10	TURN	002	TURN_002	10	No	TURN_002_Q10	Please provide a narrative explanation of the decision tree shown in figure 8.2.1-2, including any criteria that PG&E intends to use to determine if conditions in the decision tree are met. a. Figure 8.2.1-2 appears to indicate that UG is preferred when CBR > 1 and within 50% of the OH + EPSS CBR and UG NB > OH NB. Please explain the basis for the figure of 50%. b. It appears that the decision tree begins with UG as the default option and only moves to alternatives when certain criteria are not met. Why doesn't PG&E begin with the more cost-effective hybrid approach and move to UG when absolutely necessary? c. Please explain the tree strike scores and how they are determined? Why is a score of 6+ significant? d. Please identify and explain and each and every criterion that is considered in determining "Are there Egress/Ingress concerns expressed by PSS team? Please provide a narrative explanation of the types of concerns and how they impact risk. e. Please provide a narrative explanation of the PSPS polygon and the effect on CPZ. f. At any point in the decision tree, are the hybrid project CBRs recalculated based on different permutations/combinations?	a. PG&E is incorporating the Cost-Benefit Ratio (CBR) into our decision-making framework in anticipation of this requirement as part of the 10-year Electrical Undergrounding Plan (EUP). The Commission has stated that "the utility is not bound to select its mitigation strategy based solely on the CBRs produced by the Cost-Benefit Approach," supporting the concept that CBR does not need to be the sole determinant of risk mitigation strategies.1 This is because an over-emphasis on CBR devalues high cost / high benefit projects. CBR does not consider the absolute benefits and holistic value of permanent risk mitigations, and when used as the sole criteria, results in situations where risk is permanently left on the system, including on circuit segments where undergrounding's benefits are greater than those of overhead hardening. In our decision tree, CBR is used as the primary criteria for selecting mitigation measures. However, for undergrounding (UG) projects where the benefits are more favorable than OH hardening + EPSS, these projects will also be considered, provided their cost-benefit ratio falls within an acceptable range relative to the CBR of overhead hardening projects. The 50% threshold is a discretionary value intended to ensure that CBR remains a key consideration, while also allowing for the engineering team to weigh the full range of benefits, including mitigation of tree strike risks, reliability risks created by operational mitigations, and ingress/egress considerations, which are often not fully quantified in CBR or risk calculations. In these cases, the CBR must also be greater than 1, indicating the benefits of the mitigation outweigh its costs. b. PG&E's approach to system hardening has been, and continues to be, to begin with the mitigation alternative that permanently reduces the greatest amount of risk, which is undergrounding and line removal with remote grid. If these mitigations do not meet our economic decision criteria, we consider overhead hardening where it may be considered more effective than undergrounding. c. PG&E describes what the tree strikes scores are and how they are calculated in our 2022 WMP (PG&E's Revised 2022 WMP, July 26, 2022, pages 584-585). The scores represent the number of fall-in trees that can touch and break a hardened overhead line. Scores greater than or equal to 6 represent a moderate or greater risk, high risk.	A Mireille Fall-Fry	4/7/2025	4/10/2025	4/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1-2
11	OEIS	001	OEIS_001	1	No	OEIS_001_Q1	Regarding Vegetation Management QA and QC Units: On page 410 of its 2026-2028 WMP, PG&E lists "inspections" as the "Population size/Sample Unit" for VM-08D, VM-08T, VM-22D, and VM-22T. However, in the "Sample Size" column, PG&E uses a different unit, listing the number of miles (VM-08D, VM-08T, and VM-22T) and spans (VM-22D), that it will audit. a. Define what constitutes an "inspection" unit. b. Clarify whether PG&E is auditing all work performed and not performed along the length of the sample spans/miles, or discrete documented "inspections" within those spans/miles. c. If PG&E audits discrete inspections rather than the entire length of a span/mile, reproduce Table 9-6 "Vegetation Management QA and QC Activity" with: i. An estimated total number of inspections it could potentially audit under the 2026, 2027, and 2028 "Population Size" columns. ii. An estimated number of inspections PG&E plans to audit under the 2026, 2027, and 2028 "Sample Size" columns. d. For VM-22T units, PG&E lists "miles" in "Population Size" column, "spans" in "Sample Size," and "Inspections" in the "Population/Sample Unit." Clarify the unit used for VM-22T.	a. For VM-22 D&T, an inspection unit will be the location of overhead electric facilities inspected by Vegetation Management (VM) Operations. b. For VM-08 D&T, an inspection unit will consist of overhead line segments.QA/QC work will be performed along the length of the sample spans/miles/locations. Both, post VM inspection and/or post Tree work activities can be evaluated. c. N/A; please see response B. i. N/A ii. N/A d. The population provides the total estimated volume of overhead transmission facilities in HFTD. The sample size is the minimum volume of VM QC transmission inspected locations to verify. As noted above, for VM-22T, an inspection unit will be the location of overhead electric facilities inspected by Vegetation Management (VM) Operations. See the footnote above for more detail.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11
12	OEIS	001	OEIS_001	2	No	OEIS_001_Q2	Regarding Vegetation Management QA and QC Outside the HFTD On page 410 of its 2026-2028 WMP, PG&E specifies that 100% of QA/QC samples are from locations within the HFTD. a. Does PG&E perform QA/QC in its HFRA? i. If yes, describe its QA/QC program in its HFRA. ii. If not, why does it not extend its QA/QC program to its HFRA? b. Does PG&E perform QA/QC in non-HFTD areas? i. If yes, describe its QA/QC program in non-HFTD areas. ii. If not, why does it not extend its QA/QC program to non-HFTD areas?	a. Yes. QC and QA will perform assessments in HFRA. i. PG&E's QA/QC will be conducted the same in HFRA as elsewhere. ii. N/A b. Yes. QC and QA will perform assessments in both HFTD and non-HFTD areas. i. PG&E's QA and QC will be conducted the same in Non-HFTD as elsewhere. ii. N/A	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11
12	OEIS	001	OEIS_001	2(a)	Yes	OEIS_001_Q2(a)	Regarding Vegetation Management QA and QC Outside the HFTD On page 410 of its 2026-2028 WMP, PG&E specifies that 100% of QA/QC samples are from locations within the HFTD. a. Does PG&E perform QA/QC in its HFRA? i. If yes, describe its QA/QC program in its HFRA. ii. If not, why does it not extend its QA/QC program to its HFRA? b. Does PG&E perform QA/QC in non-HFTD areas? i. If yes, describe its QA/QC program in non-HFTD areas. ii. If not, why does it not extend its QA/QC program to non-HFTD areas?	a. Yes. QC and QA will perform assessments in HFRA. i. PG&E's QA/QC will be conducted the same in HFRA as elsewhere. ii. N/A b. Yes. QA will perform assessments systemwide, including HFTD, HFRA and non HFTD/non-HFRA. However, QA will only count units in HFTD and HFRA areas towards WMP targets. QC will only perform assessments in HFTD and HFRA areas. i. PG&E's QA and QC will be conducted the same in non-HFTD as elsewhere. ii. N/A	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11

12	SPD	002	SPD_002	4	No	SPD_002_Q4	Every Friday by noon, submit all of the materials requested in Questions 1-3 to Kbeworks. Each weekly response should be packaged in a single zip file and organized according to the following folder structure: a. Party Name (i.e. Energy Safety, Cal Advocates, etc.) b. DR Name (i.e. SPD-PGE-WMP2026-001) i. Place the data request responses in this folder. c. Attachments i. Place any attachments to the data request responses in this folder.	PG&E objects to this request on the grounds that continuing discovery obligations are not permitted under California law. Bilas v. Exxon Mobil Corp., 124 Cal.App.4th 1315, 1326 (2004); Code Civ. Proc. § 2030.060(g). Notwithstanding and without waiving this objection, PG&E responds as follows. Discovery provided to Energy Safety and other requesting parties is publicly posted and available on PG&E's website at Community Wildfire Safety Program. The native format version (Excel) of PG&E's WMP DR Summary is updated on our website each Thursday. We will provide confidential versions of any confidential responses and/or attachments submitted to Energy Safety or any other party every Friday. We will do our best to provide such responses by noon each Friday, or as soon as is reasonably possible.	Eddie Schmitt	4/16/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_002.zip	0	No	N/A	N/A	N/A
13	OEIS	001	OEIS_001	3	No	OEIS_001_Q3	Regarding Vegetation Management QA and QC Target Pass Rates On page 410 of its 2026-2028 WMP, PG&E sets a target pass rate for Vegetation Management Quality Assurance (VMQA) of 97%. On page 411, PG&E writes that VMQA has a "99% estimated level of compliance." a. How does PG&E use the "estimated level of compliance" in its operations? b. Explain why the estimated level of compliance differs from the target pass rate.	a. The 99% estimated level of compliance is the predicted baseline score based on historic audit data. This estimated level of compliance is then entered into a sampling formula along with error rate and confidence level to derive an appropriate sample mileage. For 2025, we have been using between a 2.5% and 3.25% margin of error to account for variability in the audit sampling (since we aren't looking at 100% of the line mileage in a given area). After the conclusion of the audit, we calculate the true margin of error since we'd have a collected grown-in tree population as a denominator at that point (this is because we use line mileage as a proxy for tree populations to get a minimum amount of mileage to review). At the conclusion of the audit, if the actual margin of error is less than the estimated margin of error used, the audit could be considered statistically valid. Basically, the margin of error would account for any outlier audits where the compliance score was well below 99%. b. Historical VMQA audit shows that system wide, scores average at or above 99% compliance. This is used strictly to derive audit mileage sample. The actual achieved pass rate is still a variable dependent on Operational Performance and independent of what VMQA expected to see. Using 99% as a baseline estimated level of compliance is consistent with the audit scores that QA has observed historically.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11
14	OEIS	001	OEIS_001	4	No	OEIS_001_Q4	Regarding Vegetation Management Field Quality Control On page 415 of its 2026-2028 WMP, PG&E states that it discontinued its Field Quality Control (FQC) because it is redundant to "ongoing knowledge checks." a. Describe the similarities and differences between FQC and "ongoing knowledge checks." b. List the redundancies between FQC and "ongoing knowledge checks." c. For non-redundant aspects: i. Explain whether and how PG&E accounts for these aspects in other ways (e.g., other QA/QC programs). ii. If PG&E does not account for these aspects in other ways, explain why PG&E discontinued	a. Vegetation Management (VM) Knowledge Checks i. VM operations new hire check-ins – required monthly ii. VM construction management development of a Vegetation Management Inspector (VMI) assessment yard with both field and desk review components iii. Periodic field visits of VMI from their PG&E leadership team or delegates Field Quality Control (FQC) Assessments i. Performs on-site knowledge assessments of VMI using a defined checklist applicable to specific VM work scopes ii. FQC scope required annual assessment of at least 90% of the eligible population WMP-Discovery 2026-2028_DR_OEIS_001-Q004 Page 2 iii. FQC scope included direct observation of VMI inspection work behaviors and adherence/non-adherence to applicable guidance documentation b. FQC performs on-site knowledge assessments of VMI using a standardized checklist. The VMI assessment yard will perform knowledge assessments of VMI using standardized testing methods. FQC performs on-site field observations of VMI. The existing Vegetation Operation Inspection (VOI) team and internal operations field leadership perform periodic field visits with VMI. c. For non-redundant aspects: i. FQC captures VMI adherence to applicable regulatory requirements and internal guidance documentation and publishes the results in a reporting space. QA/QC can be used as an analog for VMI performance by auditing the VMI work product. ii. n/a	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11
15	OEIS	001	OEIS_001	5	No	OEIS_001_Q5	Regarding Vegetation Management Field Reviews On page 411 of its 2026-2028 WMP, PG&E describes its Vegetation Management Quality Control (VMQC) program. PG&E states that it "performs field reviews after VM Operations has completed their inspections and/or tree work to verify the applicable procedural scope has been met." a. Does PG&E's record keeping system distinguish between field reviews of inspections and field reviews of tree work? i. If yes, list the sample size for distribution (VM-22D) and transmission (VM-22T) of: A. Inspection quality control field reviews; B. Tree work quality control field reviews. ii. Explain why PG&E aggregates quality control of two activities, inspections and tree work, into one target (e.g., VM-22D in Table 9-8, page 410).	a. No; PG&E's VMQC program's record keeping system does not distinguish between field reviews of inspections and field reviews of tree work. i. N/A ii. PG&E aggregates quality control of two activities, inspections, and tree work, into one target because the VMQC assessment criteria allows both VM inspection and tree work activities to be evaluated to ensure procedural and regulatory compliance is met for the annual routine cycle.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.11
16	OEIS	001	OEIS_001	6	No	OEIS_001_Q6	Regarding Vegetation Management Work Orders On page 417 of its 2026-2028 Base WMP, PG&E lists past-due work orders in Table 9-7 and 9-8 and notes that "constrained units are excluded" from both tables. a. Provide Tables 9-7 and 9-8 including constrained work orders. b. List the number of past due work orders constrained by the followed categories: i. Biological and Cultural ii. Customer iii. Encroachment Permit iv. Environmental Permit v. Operational c. For Encroachment and Environmental Permit constraints, list the number of past due work orders by the permit needed to remedy the constraint	a. Please note, PG&E does not consider constrained units as past due. Please see table(s) below for a breakdown of constrained units by constrained category and HFTD Tier/Priority level.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.12
17	OEIS	001	OEIS_001	7	No	OEIS_001_Q7	Regarding Vegetation Management Training and Retention On pages 422-423 in its 2026-2028 Base WMP, PG&E describes "formal courses (instructor-led and web-based) and on-the-job training" in describing vegetation management personnel training. a. Describe how PG&E invests in the career advancement of its vegetation management personnel. b. Describe PG&E's efforts to retain vegetation management personnel.	a. PG&E invests in the career advancement of its vegetation management (VM) personnel by covering both time and cost of certifications including basic Arborist Certification and advanced qualifications like Tree Risk Assessment Qualified (TRAQ). PG&E also helps to streamline the certification process and aid personnel in their Arborist certification test preparation, by hosting weekly International Society of Arboriculture (ISA) Arborist Certification study group calls. For current Arborists, PG&E collaborates with the Western Chapter ISA to schedule dedicated TRAQ qualification training days, ensuring easy access to the course. b. PG&E has unionized the Vegetation Management Inspector (VMI) and Vegetation Operations Inspector (VOI) positions to enhance retention of VM personnel. This initiative has resulted in increased wages and established clear career paths for advancement.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.13
18	OEIS	001	OEIS_001	8	No	OEIS_001_Q8	Regarding PG&E-23B-18. Improving Vegetation Management Inspector Qualifications a. On page 580 of its 2026-2028 WMP, PG&E discusses how it will improve the qualifications and training of VM inspectors. PG&E writes that it has "implemented a process of profiling training courses within the VM organization based on personnel role and internal employee or contractor status." i. Describe the "profiling" process. ii. Define "profiling" in the context of "profiling training courses."	a. i. With the profiling process, Vegetation Management personnel are automatically assigned trainings based on their job titles. This process automatically adjusts training requirements when individuals are hired or change positions. ii. Profiling in the context of "Profiling Training Courses" is defined as linking specific trainings to job titles.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.13
19	OEIS	001	OEIS_001	9	No	OEIS_001_Q9	Regarding Distribution Routine Patrol Program On page 363, PG&E's WMP states "PG&E is in the process of evaluating which component(s) of the [Focused Tree Inspection (FTI)] and [Tree Removal Inventory (TRI)] scope will be incorporated into the Distribution Routine Patrol Program. This analysis will be based on findings from efficacy studies planned to be performed in 2025. PG&E will incorporate VMOM into activities described in [Activities Based on Weather Conditions]." a. Does PG&E have specific, measurable, achievable, relevant, and time-bound (SMART) targets for evaluating which component(s) of the FTI and TRI scope will be incorporated into the Distribution Routine Patrol Program, the efficacy study, and incorporating VMOM into Activities Based on Weather Conditions? i. If so, provide those SMART targets. ii. If not, explain why PG&E does not have SMART targets for its plan to consolidate its vegetation inspection programs for distribution circuits in the HFTD. b. Provide the procedures for these efficacy studies. c. When does PG&E expect to determine which components of the FTI and TRI scope will be incorporated into the Distribution Routine Patrol Program? d. When does PG&E expect its new Distribution Routine Patrol Program procedure that	On page 363, PG&E's WMP states "PG&E is in the process of evaluating which component(s) of the [Focused Tree Inspection (FTI)] and [Tree Removal Inventory (TRI)] scope will be incorporated into the Distribution Routine Patrol Program. This analysis will be based on findings from efficacy studies planned to be performed in 2025. PG&E will incorporate VMOM into activities described in [Activities Based on Weather Conditions]." a. Does PG&E have specific, measurable, achievable, relevant, and time-bound (SMART) targets for evaluating which component(s) of the FTI and TRI scope will be incorporated into the Distribution Routine Patrol Program, the efficacy study, and incorporating VMOM into Activities Based on Weather Conditions? i. If so, provide those SMART targets. ii. If not, explain why PG&E does not have SMART targets for its plan to consolidate its vegetation inspection programs for distribution circuits in the HFTD. b. Provide the procedures for these efficacy studies. c. When does PG&E expect to determine which components of the FTI and TRI scope will be incorporated into the Distribution Routine Patrol Program? d. When does PG&E expect its new Distribution Routine Patrol Program procedure that includes components of FTI and TRI will be effective (i.e., used by personnel in the field)?	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.2.1
20	OEIS	001	OEIS_001	10	No	OEIS_001_Q10	Regarding Pruning and Removal On page 377, PG&E's WMP states "PG&E is examining work prioritization categories beyond the P1, P2, and Routine designation." For this examination: a. Provide examination criteria. b. Provide descriptions of work prioritization categories under examination. c. Provide a description of the parts of the service territory these new designations will apply to including the reason these parts of the service territory would benefit from additional prioritization categories. d. Provide a schedule for and anticipated completion date of this examination. e. Provide an anticipated effective date of the new prioritization category scheme (i.e., when the prioritization scheme will be used by personnel in the field).	a. The examination criteria are based on the completion timelines associated with P1, P2, and Routine designations. If appropriate, additional work prioritization categories would be introduced. b. The current Work Prioritization categories are defined in Priority Tag Procedure TD 7102P-17. The current categories are under examination. Additional categories may be considered for creation. c. The consideration for a new work prioritization category could apply to any part of the service territory. A location of higher wildfire risk could have a higher work prioritization designation. d. This examination is a continuous improvement activity with no anticipated completion date at this time. We expect the examination through the end of 2025 to inform our 2026-2028 WMP activities. WMP-Discovery 2026-2028_DR_OEIS_001-Q010 Page 2 e. As the examination progresses, if PG&E determines to include any additional work prioritization categories, implementation of those additional categories will subsequently need to take into consideration the management of change to be utilized. We do not have an anticipated effective date at this time.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.3
21	OEIS	001	OEIS_001	11	No	OEIS_001_Q11	Regarding Enterprise System Qualitative Targets On pages 535-536 of its WMP, PG&E provides qualitative target ES-01. a. Provide the current data quality, profiling, and monitoring practices used for VM data. b. Provide the data quality, profiling, and monitoring practices planned for use under ES-01. c. List the datasets that have been identified as critical for VM execution.	a. Our current data quality, profiling, and monitoring practices occur in three phases: • MANAGE o Define – develop dataset inventory o Own – identify owners for the critical dataset o Metadata – provide the information needed to use the data o Critical data elements – list the critical data elements to be managed. o Standards – define required data standards needed o Profile – analyze the critical data elements o Rules – define business rules to ensure the data meets quality requirements o Retain – determine retention timeline length for the dataset • MITIGATE o Test – build tests to measure quality data WMP-Discovery 2026-2028_DR_OEIS_001-Q011 Page 2 o Measure – identify data that fails quality standards o Control – identify control points in the process that need to be managed o Cleanse – conduct actions to remove or improve poor quality data o Monitor – ensure remediation actions complete and data maintains quality over time o Dispose – determine when and how to dispose of dataset records • MAINTAIN o Stability – ensure data maintains its quality over time o Maturity – update the process, the controls, and the data b. We will continue to apply the prior mentioned practices of MANAGE, MITIGATE, MAINTAIN against remaining unmanaged critical data sets. c. There are currently 28 critical datasets for VM execution. The number and specific datasets are subject to change as execution needs change. Please see list below: • Account • Asset • AssignedResource • Case • CaseComment	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	12	Enterprise Systems	12.2

22	OEIS	001	OEIS_001	12	No	OEIS_001_Q12	Regarding PG&E-25U-08. Reinspection of Trees in Tree Removal Inventory On page 582 of its WMP, PG&E provides a response to PG&E-25U-08 indicating "In late 2024, PG&E began planning a pilot field re-evaluate trees listed for work within Shasta County." a. Provide pilot study procedure(s). b. Provide pilot schedule. c. Provide any study results.	a. There is no formalized procedure specific to this pilot. PG&E followed TD-7102P 01, Distribution Inspection Procedure and attachment 6 (Tree Removal Inventory program) process for a Level 2 inspection by a Tree Risk Assessment Qualified (TRAQ) -certified arborist. This process was followed for all Tree Assessment tool (TAT) Abatte vegetation points with a record of "Yes" in the system of record within Shasta County. b. The field execution of the Pilot began in Quarter 4 of 2024 for Level 2 Inspections performed by a TRAQ-certified arborist and the subsequent Board-Certified Master Arborist review. • All Level 2 field inspections by TRAQ-certified arborists were completed in Q1 2025. • Any remaining Board-Certified Master Arborist reviews are expected to be completed in Q2 2025. Please note: Subsequent to the field collection of data, PG&E plans to analyze the results of the pilot and evaluate recommended next steps by Q4 2025. WMP-Discovery 2026-2028_DR_OEIS_001-Q012 Page 2 c. The study is pending compilation and subsequent documentation. Documentation will be analyzed by Q4 2025 for recommendations. The recommendations resulting from the findings of the pilot are also dependent on continued feedback from internal or external stakeholder	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.2.1
23	OEIS	001	OEIS_001	13	No	OEIS_001_Q13	Regarding Wood and Slash Management Tracking Section 9.5.3 of PG&E's 2026-2028 WMP states that "Debris management is completed in coordination with tree work across PG&E's service area…Wood management that is conducted in response to a customer request is typically completed within 90 days of tree work project completion across PG&E's service area, unless affected by weather, field conditions, or other constraints" (p. 381). a. Does PG&E document and track the management of slash and woody debris that is a byproduct of VM work? i. If yes: A. Describe the documentation and record keeping methods used. B. List the data fields that are recorded as part of the wood and slash debris management tracking process. ii. If no, explain: A. How PG&E assures wood and slash management is completed in all VM treatment areas according to the Utility Standard, TD-7116S and Utility Procedure, TD-7116P-01. B. How PG&E plans to integrate wood and slash debris management tracking into internal procedures similar to tracking the completion of other VM orders.	a. No. PG&E does not track the management of slash and woody debris, vegetative material less than 4 inches in diameter. i. N/A WMP-Discovery 2026-2028_DR_OEIS_001-Q013 Page 2 ii. See below: A. There is no language in the Utility Standard, TD-7116S or the Utility Procedure, TD-7116P-01 requiring vegetation management (VM) crews to track the management of slash and woody debris. PG&E directs its VM crews to complete debris treatment in coordination with the tree work. This expectation is clearly defined in our contract specification, "Specific Conditions No. 5404 for Vegetation Management (VM) Tree Trimming and Brush Removal." When tree work is logged as complete in the database by VM crews, it implies that the crews have also completed the associated debris treatment. For reference, here is a screenshot of the contract language from Exhibit J, Page 67 of the "Specific Conditions No. 5404 for Vegetation Management (VM) Tree Trimming and Brush Removal.": B. PG&E has no plans to integrate wood and slash debris management tracking into internal procedures.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.5
24	OEIS	001	OEIS_001	14	No	OEIS_001_Q14	Regarding Wood and Slash Management Impacts on Wildfire Risk PG&E-23B-16, Updating Wood Management Procedure, requires an updated Wood Management Procedure that "[c]onsiders the wildfire risk related to accumulated fuels generated by PG&E's vegetation management activities." On page 586 of its WMP, PG&E states that updates to Utility Standard, TD-7116S and Utility Procedure, TD-7116P-01 include "alignment to industry practices related to accumulated fuels generated by VM activities. a. Clarify what industry practices PG&E is referring to. b. Explain how wildfire risk related to accumulated fuels generated by PG&E's vegetation management activities is considered in Utility Standard, TD-7116S and Utility Procedure, TD-7116P-01.	a. The utility vegetation management industry is increasingly concerned about wood remaining from line clearance activities. In response to these concerns, we are aligning with industry practices which includes expanding wood management offerings to all customers and land managers upon request, within a defined scope and across all vegetation management programs. This alignment with industry best practices is documented in our response to question 15 specifically referencing prior and futured scheduled benchmarking activities with SDG&E, SCE and Liberty Utilities. b. In addition to expanding wood management offerings as described above, our Wood Management Procedure aligns with defensible space requirements and expectations outlined in the State of California Public Resources Code (PRC) Section 4291 and California Code of Regulation (CCR) Title 14 Section 1299.03. Our scope includes wood management within the following zones: • 100 feet of a human inhabitable structure, structure footprint, or campsite. WMP-Discovery 2026-2028_DR_OEIS_001-Q014 Page 2 • Vegetative material located within 15 feet of the access road to a human inhabitable structure, structure footprint, or campsite. • Vegetative material is located within 15 feet of an outbuilding or propane tank.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.5
25	OEIS	001	OEIS_001	15	No	OEIS_001_Q15	Regarding Wood and Slash Management Benchmarking In response to PG&E-23B-16, Updating Wood Management Procedure, PG&E states that benchmarking meetings with SCE and SDG&E to discuss wood management began in 2023 (p. 586) and benchmarking is targeted to be complete by September 30, 2028 (p. 354). These discussions with SCE and SDG&E and a review of Liberty's procedure have "helped shape" the new Wood Management Standard and Procedure, though, "absent a consistent approach across utilities, [PG&E] aligned and updated our Standard and Procedure to reflect the common ground of PRC 4291" (p. 586). Future benchmarking meeting topics are expected to include consideration of whether each utility's respective wood management policy meet the required progress defined in the area for continued improvement (p. 587). a. Explain why PG&E plans for the benchmarking effort spans over five years. b. Describe common and uncommon practices between PG&E, SCE, and Liberty that have been identified during the benchmarking effort; explain how each uncommon practice was determined to be included or excluded from PG&E's updated Utility Standard, TD-7116S and Utility Procedure, TD-7116P-01. c. Describe specific outcomes from the benchmarking effort and clarify how these outcomes relate to specific updates in the Utility Standard, TD-7116S and Utility Procedure, TD-7116P-01. d. Compare PG&E's past wood management procedure (prior to benchmarking) to the updated wood management procedure and describe how the updates to the procedure meet the required progress of PG&E-23B-16.	a. The utility vegetation management industry is increasingly concerned about wood remaining from line clearance activities. In response to these concerns, we are aligning with industry practices which includes expanding wood management offerings to all customers and land managers upon request, within a defined scope and across all vegetation management programs. This alignment with industry best practices is documented in our response to question 15 specifically referencing prior and futured scheduled benchmarking activities with SDG&E, SCE and Liberty Utilities. b. In addition to expanding wood management offerings as described above, our Wood Management Procedure aligns with defensible space requirements and expectations outlined in the State of California Public Resources Code (PRC) Section 4291 and California Code of Regulation (CCR) Title 14 Section 1299.03. Our scope includes wood management within the following zones: • 100 feet of a human inhabitable structure, structure footprint, or campsite. • Vegetative material located within 15 feet of the access road to a human inhabitable structure, structure footprint, or campsite. • Vegetative material is located within 15 feet of an outbuilding or propane tank.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.5
26	OEIS	001	OEIS_001	16	No	OEIS_001_Q16	Regarding Integrated Vegetation Management Reassessment and Treatment Timing In Section 9.7.3 IVM Scheduling, PG&E states that, "For TIVM, previously worked ROWs are reassessed every 2-5 years" (p. 386). The 2026-2028 WMP does not described how the need for retreatment of Transmission ROWs is determined. In contrast, PG&E's 2023-2025 WMP provided threshold triggers for retreatment of vegetation, including "incompatible vegetation exceeding 3 ft. in height and/or when incompatible vegetation is greater than 50 percent ground coverage within the ROW" (p. 695). a. Describe the rationale conducting reassessment inspection on a 2-5 year cycle and clarify what factors (e.g, species, growth rates, percent cover, height) were used to define this timeframe. b. Clarify the threshold triggers PG&E will use to determine the need for retreatment of vegetation in transmission ROWs during the 2026-2028 WMP cycle.	a. Historically, the rationale for a 2 to 5-year cycle of reassessment was due to it being known that incompatible vegetation will regrow within that timeframe. With the availability of LiDAR data, vegetation height and density conditions are analyzed each year. This data also allows for year-over-year growth analysis by span. The vegetation conditions are then used for work plan development using the inputs described below. As stated in the 2026-2028 WMP, PG&E schedules Transmission IVM (TIVM) ROW maintenance based on outputs of the work plan development described in the program overview (see 9.7.1 pp. 384). WMP-Discovery 2026-2028_DR_OEIS_001-Q016 Page 2 b. The quantity of TIVM work varies by year and is dependent on the resources available. PG&E considers the following inputs to determine the need for retreatment of vegetation in transmission ROWs during work plan development: • The year in which previous ROW expansion/ROW clearing project work was completed. Follow-up IVM maintenance is then typically targeted to occur within 1-5 years. • How many previous years of IVM maintenance have occurred on a line and when the last cycle of maintenance occurred. Follow-up IVM maintenance is then typically recommended to occur within 1-3, 3-5, or 5-7 years depending on other factors below. • Vegetation height and density (% cover of size classes at 6-12 feet, at 5-6 feet, and at 3-4 feet) • HFTD/HFRA Tiers and circuit mileage length	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	9	Vegetation Management & Inspections	9.7.2
27	OEIS	001	OEIS_001	17	No	OEIS_001_Q17	Regarding Covered Conductor, Line Removal and Microgrids On page 180 of its 2026-2028 Base WMP, PG&E states "[PG&E's System Hardening GH-12] initiative includes overhead hardening mitigations, specifically covered conductor installation and line removal, including remote grids." a. Provide separate targets for the following initiatives in the same table format as Table 8-1. i. Covered Conductor ii. Line Removal iii. Microgrids	PG&E does not set separate targets for the initiatives that are included in GH-12. We have provided estimates based on the 2026-2028 workplan and these estimates may differ from the total miles completed each year. For clarity, microgrid information is not provided because those are not part of the Overhead and Line Removal – Distribution Initiative (GH-12) initiative. Instead, remote grid enables the removal of lines and is included in the line removal activity. See attachment "WMP-Discovery\2026-2028_DR_OEIS_001-Q017Atch01.xlsx" with the estimates by initiative requested in Table 8-1 format.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1/8.2.9/8.2.7
28	OEIS	001	OEIS_001	18	No	OEIS_001_Q18	Regarding idle transmission power lines a. How many circuit miles of idle transmission lines does PG&E have in the HFTD and HFRA? i. Do any of these idle transmission lines run parallel, and in close proximity to energized transmission lines? ii. Are any of these idle transmission lines planned for removal in 2026 to 2028? A. If yes, provide targets for 2026, 2027, and 2028. B. If no, explain: 1. Explain why removal is not planned. 2. Explain if any of these lines could become energized through induction.	a. PG&E has three idle transmission lines totaling 2.25 miles in HFTD and HFRA. i. One of these lines runs parallel and close to energized Distribution lines outside of HFTD and HFRA. ii. No A. N/A B. 1. PG&E plans to remove two of the three lines in 2025. The third line is not planned for removal at this time but is being evaluated for the optimal induction mitigation solution. 2. Only one of the three lines has sections that could become energized through induction. These sections are outside of HFTD and HFRA, and PG&E is evaluating induction mitigation WMP-Discovery 2026-2028_DR_OEIS_001-Q018 Page 2 options to reduce the risk of the line becoming energized through induction.	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.9.1
29	OEIS	001	OEIS_001	19	No	OEIS_001_Q19	Regarding CC and Undergrounding in Fire Rebuild Areas On page 186 of its WMP, PG&E states, "PG&E often refers to areas that have been impacted directly by wildfires within an HFTD as "Fire Rebuild" work. Work in areas impacted by wildfires outside of an HFTD area is referred to as "Community Rebuild" work." Provide the targets for the "Overhead Hardening and Line Removal – Distribution (GH-12)" and "System Hardening - Undergrounding (GH-04)" activities for 2026 to 2028 which are designated as "Fire Rebuild" or "Community Rebuild." Provide your response in the table below.	PG&E has not set separate targets for activities designated as "Fire Rebuild" or "Community Rebuild." These work/reams are emergent and we rebuild, as needed, in response to fire incidents. Currently, 10 miles of Community Rebuild work are forecasted in 2026 in the System Hardening - Undergrounding Initiative GH-04. We do not have any additional forecasts for Fire or Community Rebuild. See the table below for the requested information: WMP-Discovery 2026-2028_DR_OEIS_001-Q019 Page 2 2026 2027 2028 "Fire Rebuild" "Community Rebuild" "Fire Rebuild" "Community Rebuild" "Fire Rebuild" "Community Rebuild" Overhead Hardening and Line Removal - Distribution (GH-12) Targets N/A N/A N/A N/A N/A N/A System Hardening - Undergrounding (GH-04) activity Targets	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1/8.2.2

30	OEIS	001	OEIS_001	20	No	OEIS_001_Q20	Regarding the CBR Calculation in Area for Continued Improvement PG&E-2SU-04 In response to Area for Continued Improvement PG&E-2SU-04, PG&E discusses the methodology used for its CBR calculation on page 572. The discussion does not include how PG&E calculated the "eyes-on-risk" achieved by a detailed aerial inspection vs. and aerial scan inspection. a. Does PG&E assume that an aerial scan achieves the same eyes-on-risk as a detailed aerial inspection? i. If yes, discuss how PG&E determined an aerial scan achieves the same eyes-on-risk as a detailed aerial inspection. This discussion must include a description of differences in the process and execution of aerial scans vs. aerial detailed inspections (i.a. photograph locations, equipment required to be photographed, photograph quantity per inspection, photograph clarity requirements, reviewer inspection checklists, etc.) ii. If no, provide the following calculations: A. The eyes-on-risk of a detailed aerial inspection on an asset in an area of extreme consequence and extreme wildfire risk. 1. The eyes on risk of an aerial scan inspection on the same asset. B. The eyes-on-risk of a detailed aerial inspection on an asset in an area of severe consequence and severe wildfire risk. 1. The eyes on risk of an aerial scan inspection on the same asset. C. The eyes-on-risk of a detailed aerial inspection on an asset in an area of high consequence and high wildfire risk. 1. The eyes on risk of an aerial scan inspection on the same asset.	a. Yes, PG&E assumes that an aerial scan achieves the same eyes-on-risk as a detailed aerial inspection. i. The primary objective of inspections is to identify various conditions requiring corrective actions. Some of the corrective actions must be addressed in the short term while others have a longer time duration depending on the observed condition and location in the HFTD, in accordance to GO 95, Rule 18. PG&E's eyes-on-risk metric associated with inspections is meant to capture the ability of an activity to detect conditions that could fail in the short-term. These are conditions that are associated with Level 1 findings and urgent Level 2 findings, which correspond to PG&E's A, B, and X tags. These are the tag conditions that are addressed expeditiously immediately for an A tag, within seven days for an X tag, and within a six month time frame for a B tag. Since PG&E's aerial scans will identify A, B, and X conditions, it achieves the same eyes-on-risk as a detailed ground or aerial inspection. b. Not applicable, please see the response to subpart (a) above.	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	ACI PG&E-2SU-04	ACI PG&E-2SU-04	ACI PG&E-2SU-04
31	OEIS	001	OEIS_001	21	No	OEIS_001_Q21	Regarding Aerial Scan Inspections On page 236 of its 2026-2028 Base WMP, PG&E states that aerial scan inspections will be implemented to get additional eyes-on-risk in the riskiest areas. PG&E states that the inspection will consist of a review of a "streamlined set of photos…tailored to enable the identification of the conditions…that post the highest wildfire risk." a. Provide a comprehensive list of the differences between aerial scan and aerial distribution detailed inspections (i.e. the number of photographs taken, the equipment photographed, the distance from camera to equipment being photographed, the number of photographs being reviewed, items on the reviewer's inspection checklist, etc.). Provide documentation that supports this list of differences (job aids, inspection checklists, etc.)	The difference between the inspections is that, while the detailed inspection will identify all compelling abnormal conditions on the structure, the scan inspection will focus on emergency and urgent conditions, corresponding to A, B, and X tag priorities. PG&E is piloting the aerial scan inspection this year, utilizing different methodologies and shot sheets with the goal of selecting the best methodology with which to implement the inspection for 2026. Therefore, we cannot provide a fully detailed list of the differences between the two programs since the aerial scans have not yet been finalized. However, as described in PG&E's 2026-2028 WMP, the scan inspection will consist of a review of a streamlined set of photos that have been tailored to enable identification of the conditions on the structure and equipment that pose the highest wildfire risk, including the mid-span conductor. While the aerial scans will be a more abbreviated assessment, they will have the ability to assess and identify the conditions that can lead to failure in the short-term	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.8/8.3.14
32	OEIS	001	OEIS_001	22	No	OEIS_001_Q22	Regarding Real Time Sensors On page 237 of its 2026-2028 Base WMP, PG&E states that it is piloting real time sensors that may collect data that in the future can be used in lieu of aerial scan inspections. a. Provide a list of sensors that are being/will be piloted from 2026-2028. b. For each sensor provide the following information i. Manufacturer ii. Model number/series iii. Data the sensor records/transmits (voltage, current, power quality, temperature, vibration, etc.) iv. Current phase of pilot (planning, execution, evaluation, scaling) v. Estimated completion date of pilot evaluation phase	PG&E is still early in exploring the relationship between grid sensors' continuous monitoring capabilities and how they may be used to supplement electrical asset inspections. Information on our current distribution grid sensor technologies follows below. a. During the 2026-2028 period, we anticipate scaling deployment of Early Fault Detection (EFD) sensors, Distribution Fault Anticipator (DFA) sensors, and Gridscope sensors. b. Please see below for the requested information on sensor technology. As these sensors are beyond pilot phase, we are also providing the approximate number of sensors we have installed to date. WMP-Discovery 2026-2028_DR_OEIS_001-Q022 Page 2 Sensor EFD DFA Gridscope Manufacturer IND Technologies Power Solutions / Texas A&M University Gridware Approximate Number Installed 203 96 10,000 Model Number / Series EFD G4; EFD Tap RSA1-0 Gridscope Data the sensor records/transmits (voltage, current, power quality, temperature, vibration, etc.) Radio frequency Saturday	Nathan Poon	4/8/2025	4/11/2025	4/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	10	Situational Awareness and Forecasting	10.4/10.31
33	OEIS	001	OEIS_001	23	No	OEIS_001_Q23	Regarding Projected Risk Reduction On page 147 of the 2026-2028 Base WMP, PG&E provides Figure 6-1: Projected Overall Service Territory Risk, showing the residual risk over time with resiliency mitigations and operational mitigations. a. Provide similar versions of this figure showing the associated projected risk reduction for wildfire risk, PSPS risk, and PEDS risk over time. b. From 2025 to 2028, PG&E shows a projected reduction in overall utility risk of approximately nine percent when only accounting for resiliency mitigations, but only a reduction of approximately one percent when accounting for operational mitigations and resiliency mitigations together. i. Provide the actual projected residual risk percentages broken out by year from 2025 to 2028 for both only resiliency mitigations as well as resiliency and operational mitigations. ii. Explain why there is nominal residual risk reduction when incorporating operational mitigations.	a. The following figures show the projected wildfire risk reduced 2023 – 2033 with and without operational mitigations, the projected PSPS risk reduced 2023 – 2033, and the projected EPSS risk reduced 2023 – 2033.	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	6	Wildfire Mitigation Strategy Development	6.2.1.1
34	OEIS	001	OEIS_001	24	No	OEIS_001_Q24	Regarding Extreme Weather Conditions a. On page 87 of the 2026-2028 Base WMP, relating to vegetation, PG&E states that "For WFC, a set of worst weather days during historical fire seasons is used to develop fire simulations of potential ignitions given current fuel conditions." i. What timeframe is used for evaluating historical fire seasons? ii. How does PG&E define "worst weather days"? iii. How many "worst weather days" are included within the set used for WFC? iv. Does PG&E use the same definition of "worst weather days" for weather and wind scenarios? If not, provide those definitions and the number of "worst weather days" within each set. b. On page 90 of the 2026-2028 Base WMP, PG&E states that it "seeks to incorporate the potential impacts of more extreme conditions in future models." i. When does PG&E anticipate completing this evaluation? ii. Which future model is PG&E planning on- first incorporating these more extreme conditions? iii. When does PG&E anticipate operationalizing this model? iv. Is Figure PG&E-5.3.2-1 (p.90) exhaustive of the various extreme risks being studied? If not, provide a list of considerations currently being studied by PG&E. v. PG&E's 2023-2025 WMP included Table 6-4: Example of Extreme Event Scenarios Under Consideration (p. 193), which was not included in PG&E's 2026-2028 WMP. Provide a similar table showing the extreme event scenarios currently under consideration. c. On page 88 of the 2026-2028 Base WMP, Table-5-2: Summary of Design Scenarios, PG&E lists the scenarios used for its various models. Provide a detailed description of how the design scenarios Wind Load 3, Wind Load 4, and Vegetation 3 align and/or differ with extreme weather scenarios, as discussed in Section 5.3.2 Extreme-Event/High Uncertainty Scenarios. d. On page 46 of the 2026-2028 Base WMP, PG&E states that "in terms of risk modeling, this strategy entails paying special attention to tail risk—the low frequency, high consequence events" when discussing Cost-Benefit Analysis. Provide a detailed description of how the evaluation of these low frequency, high consequence events align and/or differ with extreme weather scenarios, as discussed in Section 5.3.2 Extreme-Event/High Uncertainty Scenarios. e. PG&E references fragility curves, shown in Figure PG&E-5.2.2-1-1, capturing Wind Load 1, 2, 3, and 4 conditions for its WTRM Planning Model. i. Provide a detailed description of how PG&E is evaluating the use of fragility curves to perform similar risk analysis for its distribution load models.	a. i. The months of June through November, inclusive, constitute the Fire season. ii. The Worst Weather Days are determined by the PG&E Meteorology team based on historical red flag warnings, PG&E's Fire Potential Index, historical Diablo wind event days and historical catastrophic fires. The final list of days is reviewed and curated by the meteorology team. iii. PG&E includes 571 worst weather days from March 2003 to Dec 2020. iv. See response ii. b. i. The current suite of Wildfire Risk models (Wildfire Consequence, WDRM and WTRM) are used for long term planning wildfire mitigation strategies, which incorporate the full range of wildfire risk scenarios through the whole year. In parallel, PG&E is evaluating potential methodologies that can quantify the risk of urban conflagration type scenarios that are more likely to occur under extreme weather and fuel conditions. We anticipate completing the evaluation by Q2 2026. ii. If the methodologies to quantify urban conflagration type scenarios are found to be useful and approved for use, they will be incorporated in v5 of the wildfire consequence model. iii. The date of operationalization will depend on the model approval by PG&E's internal Wildfire Risk Governance Steering Committee and consultations with the Asset Strategy teams. WMP-Discovery 2026-2028_DR_OEIS_001-Q024 Page 3 iv. PG&E is currently evaluating methodologies that quantify urban conflagration type scenarios that become more likely in extreme conditions. v. PG&E is currently evaluating methodologies that quantify urban conflagration type scenarios that become more likely in extreme conditions. The factors under consideration include structure density, terrain, wind speeds, distance from wildland urban interface and PG&E electrical assets. c. Please refer to pages 86 and 87 of 2026-2028 Base WMP that describes how the various risk models incorporate the weather, wind and vegetation scenarios as	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	5	Risk Methodology & Assessment	5.3
35	OEIS	001	OEIS_001	25	No	OEIS_001_Q25	Regarding Suppression and Egress Impacts On page 56 of the 2026-2028 Base WMP, PG&E provides Figure PG&E-5.2.1-1: WFC v4 Components, which shows consequence value adjustment steps for suppression access and egress. a. Provide a detailed description of how the inclusion of suppression access impacts the overall WFC v4 base risk scores. Provide the percent change to the overall risk score when suppression access is incorporated, as well as a description of the impact to the ranking of highest risk circuits based on wildfire risk scores. b. Provide a detailed description of how the inclusion of egress impacts the overall WFC v4 base risk scores. Provide the percent change to the overall risk score when egress is incorporated, as well as a description of the impact to the ranking of highest risk circuits based on wildfire risk scores. c. PG&E shows TDI (terrain difficulty index) listed as the impacting value under suppression access. What other values, if any, are included to quantify the impact of suppression access? d. PG&E shows AFN (access/function needs) listed as the impacting value under egress. What other values, if any, are included to quantify the impact of egress? e. How has PG&E validated and verified the impact of including suppression access and egress into its WDRM? Provide any results of such validation, including a description	a. Egress and suppression were incorporated into the WF consequence model in response to the PG&E's 2023-2025 WMP commitment. The current approach only generates the total WF consequence and WF risk values used by asset WMP-Discovery 2026-2028_DR_OEIS_001-Q025 Page 2 management teams. Suppression and egress consequence/risk values are not generated distinctly from the total consequence/risk values. b. See response (a) c. Please refer to the Wildfire Consequence model v4 documentation, Sections 4.1 and 4.3 for details on suppression modeling. d. Please refer to the Wildfire Consequence model v4 documentation, Sections 4.2 and 4.3 for details on egress modeling. e. The overall WF Consequence model v4 with egress and suppression incorporated was validated against historical fire outcomes.	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	5	Risk Methodology & Assessment	5.2.1
36	OEIS	001	OEIS_001	26	No	OEIS_001_Q26	Regarding Community Vulnerability In its 2023-2025 Base WMP (R8), PG&E provides the following key milestone as part of its risk assessment improvement plan, in Table 6-7 on page 221: "By the end of 2023, evaluate an approach to incorporate community vulnerability attributes (AFN, Economic disadvantaged zones, Critical Facilities) into the WFC Model." a. What were PG&E's results of this evaluation? b. PG&E discusses inclusion of vulnerable customer populations as part of its PSPS risk components (page 57 of the 2026-2028 Base WMP) and through the critical customer weightings (Table PG&E-5.2.2.2-2, page 69 of the 2026-2028 Base WMP). Describe how these relate to the evaluation discussed in the key milestone identified in the 2023-2025 Base WMP. c. PG&E states that public egress impact considers vulnerability on page 67 of the 2026-2028 Base WMP. Describe how this relates to the evaluation discussed in the key milestone identified in the 2023-2025 Base WMP. d. Provide a description of how PG&E integrated community vulnerability considerations into its wildfire and PSPS consequence models? e. If PG&E is still undergoing this evaluation, what is PG&E's timeline for integration into future models?	a. As a result of this evaluation, PG&E incorporated census data of age as a proxy for AFN as one measure of community vulnerability in the egress component of the WF consequence model v4. b. The same evaluation from the 2023-2025 Base WMP for critical customer weighting is applied to 2026-2028 Base WMP. PG&E uses customer weightings in its PSPS valuation to acknowledge certain customers are more vulnerable and are at elevated WMP-Discovery 2026-2028_DR_OEIS_001-Q026 Page 2 risks to sustained outages. A customer type system was selected to support risk prioritization of work for those critical customers and circuits that can be impacted by PSPS events. c. Please refer to section 2.4.3 on Public Egress Impact Model in the Wildfire consequence v4 model documentation how AFN was incorporated as one measure of community vulnerability. d. Please refer to section 2.4.3 on Public Egress Impact Model in the Wildfire consequence v4 model documentation for how AFN was incorporated as one measure of community vulnerability in the wildfire consequence model. For PSPS Consequence model, please refer to response b. e. PG&E has incorporated AFN as one measure of community vulnerability in the wildfire consequence model. Research and collaboration with other IOUs is ongoing to identify other areas where community vulnerability can be quantified and incorporated into the wildfire risk models.	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	11	Emergency Preparedness, Collaboration, and Public Awareness	11.3.2/11.3.3
37	OEIS	001	OEIS_001	27	No	OEIS_001_Q27	Regarding Independent Review a. Provide a copy of the E3 Review of PG&E's Wildfire Risk Model Version 4, as referenced on page 105 of the 2026-2028 Base WMP. b. Provide PG&E's plan and timeline to address the two areas for improvement listed on page 105 from that report.	a. Please see "WMP-Discovery2026-2028_DR_OEIS_001-Q027Atch01.pdf" for the E3 review of PG&E's Wildfire Risk Model Version 4. b. PG&E is currently evaluating methods to incorporate temporal inputs into the vegetation Event Probability Models. PG&E has also initiated discussions on how to improve the probability of ignition model. PG&E plans to release the enhancements with the WDRM v5 model anticipated for release with the next WMP submission.	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	1	No	5	Risk Methodology & Assessment	5.6.1/5.6.2

38	OEIS	001	OEIS_001	28	No	OEIS_001_Q28	Regarding PG&E's Wildfire Transmission Risk Model (WTRM) a. In Table 5-1: Risk Modeling Assumptions and Limitations, page 79 of the 2026-2028 Base WMP, PG&E states that it identified 47 components divided into nine asset groups. i. Provide a list of these 47 components and associated asset groupings for each component. ii. Figure PG&E-5.2-3: Wildfire Transmission Risk Analysis Framework only shows eight probability models relating to assets. How do these eight models relate to the nine asset groups? iii. What asset types, if any, are not captured through this analysis and grouping? How is PG&E working to evaluate the risk associated with these other asset types?	a. i. The table below lists the 47 components and associated asset group. "Component" refers to the individual component whose failure could result in an ignition, and "Group" is the component grouping for the TCM. There are 9 component groupings: (1) conductors, (2) insulators, (3) non-steel structures (NSS), (4) steel structures (SS), (5) foundations, (6) switches, (7) above grade hardware (AGH), (8) below grade hardware (BGH), and (9) splices. ii. The ninth asset group that is missing from Figure 5.2-3 is the switches. A deterministic approach was chosen for the transmission switch asset group rather than predictive modeling through the WTRM. The deterministic model utilizes asset data (age, manufacturer, type, location, etc.), manufacturers' recommendations, industry best practices and inspection results to prioritize controls and mitigations. This approach is typically considered for components with small populations or limited deployment, which applies to transmission switches (approximately 2,000 installed in the system). iii. Individual components whose failure could result in an ignition are captured in this analysis and grouping. Risk associated with switches are evaluated as described in the previous answer (ii).	Nathan Poon	4/8/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_001.zip	0	No	5	Risk Methodology & Assessment	5.2/5.5
39	MGRA	002	MGRA_002	1	No	MGRA_002_Q1	Weather station metadata valid as of Q4 of 2024.	In response to this request, PG&E is providing the Weather Station Feature Class as delivered in the 4Q 2024 OEIS GIS Data Standard Submission. Please see the file "WMP-Discovery2026-2028_DR_MGRA_002-Q001Atch01.xlsx."	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
39	MGRA	002	MGRA_002	1(s)	Yes	MGRA_002_Q1(s)	Weather station metadata valid as of Q4 of 2024.	Please see "WMP-Discovery2026-2028_DR_MGRA_002-Q001Supp01Atch01.xlsx" in which PG&E has included requested lat/long information.	Joseph Mitchell	4/11/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
40	MGRA	002	MGRA_002	2	No	MGRA_002_Q2	PSPS event damage event reports obtained from post-event patrols, including cause for all quarters of 2024.	In response to this request, PG&E is providing non-confidential data for the PSPS Event Damage Feature Classes, as delivered in 2024. Please note that PG&E did not have PSPS events during each quarter nor is every table applicable for relevant damages. For example, there were no support structure or other asset damages, so there are no data to report in the PspsEventSupportStructureDamageDetail or PspsEventOtherAssetDamageDetail to report. Attached, please see the responsive files and associated explanations for when PG&E had relevant data to report each quarter for 2024: • "WMP-Discovery2026-2028_DR_MGRA_002-Q002Atch01.xlsx" o PG&E only provided data in this Feature Class for 4Q 2024. • "WMP-Discovery2026-2028_DR_MGRA_002-Q002Atch02.xlsx" o PG&E only provided data in this Feature Class for 4Q 2024.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	2	No	N/A	GIS	N/A
40	MGRA	002	MGRA_002	2(s)	Yes	MGRA_002_Q2(s)	PSPS event damage event reports obtained from post-event patrols, including cause for all quarters of 2024.	Please see the attachments listed below in which PG&E has included the requested lat/long information. Please note that a third file responsive to this question was inadvertently omitted from our initial response and is included here. • "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch01.xlsx" • "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch02.xlsx" • "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch03.xlsx"	Joseph Mitchell	4/11/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	3	No	N/A	GIS	N/A
41	MGRA	002	MGRA_002	3	No	MGRA_002_Q3	Unplanned outage data, including cause for all four quarters of 2023 and 2024. a. If possible should include whether the outage occurred on a covered conductor segment	In response to this request, PG&E is providing non-confidential data for the Unplanned Outage Feature Class for all 8 quarters requested from 2023 and 2024, as delivered in the OEIS GIS Data Standard Submissions for each quarter. Please see "WMP Discovery2026-2028_DR_MGRA_002-Q003Atch01.xlsx." a. The provided Feature Classes are not structured to include data on covered conductor segmentation, and thus PG&E is presently unable to provide this requested data. When the non-confidential GDBs are created, as requested by MGRA in MGRA-PGE-WMP26_DataRequest1, MGRA will be able to identify line classifications and make spatial inferences through the Primary Distribution Line feature class.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
41	MGRA	002	MGRA_002	3(s)	Yes	MGRA_002_Q3(s)	Unplanned outage data, including cause for all four quarters of 2023 and 2024. a. If possible should include whether the outage occurred on a covered conductor segment	Please see "WMP-Discovery2026-2028_DR_MGRA_002-Q003Supp01Atch01.xlsx", in which PG&E has included the requested lat/long information.	Joseph Mitchell	4/11/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
42	MGRA	002	MGRA_002	4	No	MGRA_002_Q4	Wire down data for all four quarters of 2023 and 2024. Include cause and any associated outage identifier. a. If possible should include whether the outage occurred on a covered conductor segment	In response to this request, PG&E is providing non-confidential data for the Wire Down Feature Class, as delivered in the 8 quarters requested in 2023 and 2024. Please see the file "WMP-Discovery2026-2028_DR_MGRA_002-Q004Atch01.xlsx." a. The provided Feature Classes are not structured to include data on covered conductor segmentation, and thus PG&E is presently unable to provide this requested data. When the non-confidential GDBs are created, as requested by MGRA in MGRA-PGE-WMP26_DataRequest1, MGRA will be able to identify line classifications and make spatial inferences through the Primary Distribution Line feature class.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
42	MGRA	002	MGRA_002	4(s)	Yes	MGRA_002_Q4(s)	Wire down data for all four quarters of 2023 and 2024. Include cause and any associated outage identifier. a. If possible should include whether the outage occurred on a covered conductor segment	Please see "WMP-Discovery2026-2028_DR_MGRA_002-Q004Supp01Atch01.xlsx", in which PG&E has included the requested lat/long information.	Joseph Mitchell	4/11/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
43	MGRA	002	MGRA_002	5	No	MGRA_002_Q5	Ignition data for all four quarters of 2023 and 2024. a. Should include cause and any associated outage identifier. b. If possible should include whether the ignition occurred on a covered conductor segment	In response to this request, PG&E is providing non-confidential data for the Ignition Feature Class, as delivered in the 8 quarters requested in 2023 and 2024. Please see "WMP-Discovery2026-2028_DR_MGRA_002-Q005Atch01.xlsx". a. The provided Feature Classes include the columns SuspectedInitiatedCause and OutageID which are responsive to this question. b. The provided Feature Classes are not structured to include data on covered conductor segmentation, and thus PG&E is presently unable to provide this requested data. When the non-confidential GDBs are created, as requested by MGRA in MGRA-PGE-WMP26_DataRequest1, MGRA will be able to identify line classifications and make spatial inferences through the Primary Distribution Line feature class.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
43	MGRA	002	MGRA_002	5(s)	Yes	MGRA_002_Q5(s)	Ignition data for all four quarters of 2023 and 2024. a. Should include cause and any associated outage identifier. b. If possible should include whether the ignition occurred on a covered conductor segment	Please see "WMP-Discovery2026-2028_DR_MGRA_002-Q005Supp01Atch01.xlsx", in which PG&E has included the requested lat/long information.	Joseph Mitchell	4/11/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_002.zip	1	No	N/A	GIS	N/A
44	MGRA	003	MGRA_003	1	No	MGRA_003_Q1	Please provide an excel spreadsheet table that provides for 2021, 2022, 2023, and 2024: a. Number of miles of fully covered conductor circuit segments in the HFTD+HFRA; b. Number of miles of fully "bare wire" conductor circuit segments in the HFTD+HFRA; c. Number of wires down for associated with a covered conductor circuit segment in the HFTD+HFRA; d. Number of wires down associated with a "bare wire" conductor circuit segments in the HFTD+HFRA; e. Number reportable ignitions for fully covered conductor circuit segments in the HFTD+HFRA; f. Number reportable ignitions for fully "bare wire" conductor circuit segments in the HFTD+HFRA; g. For ignitions on partially covered circuit segments in the HFTD+HFRA, or ignitions with uncertain origin, sum these into the "fully covered" or "bare wire" groups based on the most prevalent circuit configuration in the area of ignition. h. Number of outages attributable to infrastructure on fully "bare wire" conductor circuit segments in the HFTD+HFRA; i. Number of outages attributable to infrastructure on fully covered conductor circuit segments in the HFRA. j. For outages on partially covered circuit segments in the HFTD+HFRA, or outages with uncertain locations, sum these into the "fully covered" or "bare wire" groups based on the most prevalent circuit configuration in the area of the outage.	a. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx." Please note that the data provided reflects asset status as included in our Q4 spatial data deliveries to the Office of Energy Safety for each of 2021-2024. Please note that PG&E has applied HFTD and HFRA filters based on current, not historical, definitions of HFTD and HFRA. b. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx." Please note that the data provided reflects asset status as included in our Q4 spatial data deliveries to the Office of Energy Safety for each of 2021-2024. Please note that PG&E has applied HFTD and HFRA filters based on current, not historical, definitions of HFTD and HFRA. c. Please note that the data provided is drawn from PG&E's Integrated Logging Information System ("ILIS"). The reporting structure for ILIS does not give single outage details for specific events, and wire down metrics may be over-reported as a result. ILIS records do not capture the type of wire, so PG&E is not able to differentiate between covered or bare conductor. In addition, ILIS does not capture HFRA locations, so the volume reported is limited to HFTD only. As a result of these limitations, PG&E is providing the total volume of wire down events in HFTDs in Part D for 2021, 2022, 2023 and 2024. d. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx." Please note that the data provided is drawn from PG&E's Integrated Logging Information System ("ILIS"). The reporting structure for ILIS does not give single outage details for specific events, and wire down metrics may be over-reported as a result. ILIS records do not capture the type of wire, so PG&E is not able to differentiate between covered or bare conductor. In addition, ILIS does not capture HFRA locations, so the volume reported is limited to HFTD only. As a result of these limitations, PG&E is providing the total volume of wire down events in HFTDs in Part D for 2021, 2022, 2023 and 2024. e. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx." f. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx." g. PG&E's ignition tracking does not allow it to identify "partially covered circuit segments," and all ignitions have a designated origin. No ignitions were removed	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	1	No	8	Grid Design, Operations, and Maintenance	8.4.4/8.2.10
44	MGRA	003	MGRA_003	1(a)	Yes	MGRA_003_Q1(a)	Please provide an excel spreadsheet table that provides for 2021, 2022, 2023, and 2024: a. Number of miles of fully covered conductor circuit segments in the HFTD+HFRA; b. Number of miles of fully "bare wire" conductor circuit segments in the HFTD+HFRA; c. Number of wires down for associated with a covered conductor circuit segment in the HFTD+HFRA; d. Number of wires down associated with a "bare wire" conductor circuit segments in the HFTD+HFRA; e. Number reportable ignitions for fully covered conductor circuit segments in the HFTD+HFRA; f. Number reportable ignitions for fully "bare wire" conductor circuit segments in the HFTD+HFRA; g. For ignitions on partially covered circuit segments in the HFTD+HFRA, or ignitions with uncertain origin, sum these into the "fully covered" or "bare wire" groups based on the most prevalent circuit configuration in the area of ignition. h. Number of outages attributable to infrastructure on fully "bare wire" conductor circuit segments in the HFTD+HFRA; i. Number of outages attributable to infrastructure on fully covered conductor circuit segments in the HFRA. j. For outages on partially covered circuit segments in the HFTD+HFRA, or outages with uncertain locations, sum these into the "fully covered" or "bare wire" groups based on the most prevalent circuit configuration in the area of the outage.	a. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx" for the requested information. Please note that the data provided reflects asset status as included in our Q4 spatial data deliveries to the Office of Energy Safety for each year from 2021-2024. Please note that PG&E has applied HFTD and HFRA filters based on current, not historical, definitions of HFTD and HFRA. b. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx" for the requested information. Please note that the data provided reflects asset status as included in our Q4 spatial data deliveries to the Office of Energy Infrastructure Safety for each year from 2021-2024. Please note that PG&E has applied HFTD and HFRA filters based on current, not historical, definitions of HFTD and HFRA. c. Please note that the data provided is drawn from PG&E's Integrated Logging Information System ("ILIS"). The reporting structure for ILIS does not give single outage details for specific events, and wire down metrics may be over-reported as a result. ILIS records do not capture the type of wire, so PG&E is not able to differentiate between covered or bare conductor. In addition, ILIS does not capture HFRA locations, so the volume reported is limited to HFTD only. As a result of these limitations, PG&E is providing the total volume of wire down events in HFTDs in Part D for 2021, 2022, 2023 and 2024. d. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Atch01.xlsx" for the requested information. Please note that the data provided is drawn from PG&E's Integrated Logging Information System ("ILIS"). The reporting structure for ILIS does not give single outage details for specific events, and wire down metrics may be over-reported as a result. ILIS records do not capture the type of wire, so PG&E is not able to differentiate between covered or bare conductor. In addition, ILIS does not capture HFRA locations, so the volume reported is limited to HFTD only. As a result of these limitations, PG&E is providing the total volume of wire down events in HFTDs in Part D for 2021, 2022, 2023 and 2024. e. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Rev01Atch01.xlsx" for the requested information. f. Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q001Rev01Atch01.xlsx"	Joseph Mitchell	4/11/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	1	No	8	Grid Design, Operations, and Maintenance	8.4.4/8.2.10

45	MGRA	003	MGRA_003	2	No	MGRA_003_Q2	Some of the risk drivers in Table 3-1 (pp. 20-21) show wind as a Climatological risk factor. Please provide a technical explanation as to why wind is a factor for the following Risk Sub-Drivers. Also provide data supporting this association: a. Capacitor Bank b. Fuse c. Lightning Arrestor d. Transformer e. Balloon f. Contamination	Wind increases the failure risk of overhead electrical utility equipment through both direct mechanical loading and indirect environmental effects. High wind speeds exert dynamic lateral forces on pole-mounted components such as capacitor banks, fuses, lightning arrestors, and transformers, especially those with large surface areas. Wind driven lateral forces can induce structural oscillations, accelerate fatigue, or cause displacement at the pole top – conditions that can accelerate structural degradation over time. Wind loading on conductors can also introduce tension imbalances and galloping, which can increase mechanical stress at connection points, bushings, and supporting structures. ASCE Manual No. 74 provides guidance for evaluating wind load impacts on transmission and distribution infrastructure. Wind also indirectly increases failure risk by driving foreign objects and vegetation into energized equipment. Vegetation clearance and line routing standards address the fact that high winds can cause branches or debris to contact components like fuses or WMP-Discovery 2026-2028_DR_MGRA_003-Q002 Page 2 arrestors, initiating phase-to-ground faults or electrical arcing. Mylar (metalized) balloons, which are highly conductive, can cause short circuits or flashovers (faults) when blown into energized overhead electrical equipment. Additionally, because devices like capacitor banks and transformers may have exposed energized-terminals and bushings, they can be vulnerable to mylar balloon-induced faults. Furthermore, wind contributes to the accumulation and activation of surface contamination – a known driver of insulation failure in overhead systems. Contamination refers to the buildup of debris or pollutants such as dust, salt, or industrial particulates on equipment and insulators. Under dry conditions, these materials typically cause no electrical or mechanical issues; however, wind combined with moisture (ex. fog or mist) can convert these deposits into conductive films. This can result in surface tracking or flashovers (faults), especially across insulators and bushings connected to transformers, capacitor banks, and lightning arrestors. IEEE Std 1313.2 and IEC 60815 provide methodologies to identify contamination and creepage distances to mitigate such failures. While the technical explanation (above) describes well-established engineering mechanisms, PG&E does not currently have asset-specific failure data that directly correlates wind conditions with circuit/equipment failure rates or settings rates for	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	3	Overview of WMP	3.4
46	MGRA	003	MGRA_003	3	No	MGRA_003_Q3	On p. 24, PG&E states that "These exceptional temperatures, in turn, impact the relative humidity of the atmosphere, increasing the occurrence of vapor pressure deficit that is also linked to more severe fires. These conditions also pose a health risk to vegetation, increasing the potential for branch or tree failures impacting our assets and creating potential sources of wildfire ignition." a. What evidence does PG&E have that demonstrates how drought conditions relate to branch and tree failures? b. Has PG&E analyzed the relationship between drought variables and vegetation outage rates? If so please provide the results. c. If it has not done so, is it planning to do so and what would be the timeline? If it is not planning to do so what is the justification?	a. PG&E's statement on page 24 of its WMP references a peer-reviewed article that offers strong scientific support for the mechanism of drought impact on tree aridity and stress. Specifically, it details how rising temperatures and increased vapor pressure deficit reduce vegetation moisture content and increase plant stress and flammability. The scientific rationale for linking drought conditions to tree mortality and failures is well established in the literature. For example, the article "Lesson from California's 2012-2016 Drought"1 confirms this link stating: " Lessons from California's 2012–2016 Drought. Jay Lund, Josue Medellín-Azuara, John Durand and Kathleen Stone. J. Water Resour. Plann. Manage., 2018 WMP-Discovery 2026-2028_DR_MGRA_003-Q003 Page 2 "Perhaps the greatest impact of California's drought was the death of 1020 million forest trees, which depend on soil moisture accumulated in the wet season for growth during the spring and summer." Though not PG&E-specific evidence, these peer-reviewed articles underscore how drought conditions severely compromise tree health. b. PG&E evaluated variables related to drought as inputs to the vegetation models released with WDRM v4, which are machine learning (ML) models trained on historical failure & outage events. Specifically, the SPEI (Standard Precipitation Evapotranspiration Index) and CWD (Climatic Water Deficit) were evaluated. The inputs needed to be summarized over multiple years to fit the Maximum Entropy ML algorithm configuration requirements, which is a spatial model. The multi-year aggregation and correlation to other weather variables caused the drought-related variables to have little influence in the model. These features are described in more detail in Section 3.5.2.3 in the Distribution Event Probability Models, Version 4 documentation available at Community Wildfire Safety Program. c. PG&E is continuing to evaluate whether inputs related to vegetation health, like soil moisture, can be incorporated into the vegetation models. If successful, the enhanced vegetation models would be released with Wildfire Distribution Risk Model (WDRM) v5.	Joseph Mitchell	4/11/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	9	Vegetation Management & Inspections	9.9
47	MGRA	003	MGRA_003	4	No	MGRA_003_Q4	Provide technical description and available documentation for the Suppression Access model used in the WFC v4 Consequence model, along with data and analysis used to support the Suppression Access model.	Please refer to sections 2.4.2 and 4.1 in the Wildfire Consequence model version 4 documentation for details on the Suppression model, available at Community Wildfire Safety Program	Joseph Mitchell	4/11/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	5	Risk Methodology & Assessment	5.4
48	MGRA	003	MGRA_003	5	No	MGRA_003_Q5	Provide technical description and available documentation for the Public Egress model used in the WFC v4 Consequence model, along with data and analysis used to support the Public Egress model.	Please refer to sections 2.4.3 and 4.2 in the Wildfire Consequence model version 4 documentation for details on the Public Egress model, available at Community Wildfire Safety Program	Joseph Mitchell	4/11/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	5	Risk Methodology & Assessment	5.4
49	MGRA	003	MGRA_003	6	No	MGRA_003_Q6	Regarding the WDRM v4 ignition probability model: a. Are the covariates calculated for each geographic location in the machine learning models such as Random Forest calculated as one value per geographic location? Or are they calculated per year? b. Please provide tabular data supporting each of the "Feature Importance" figures in the Distribution Event Probability Models v4 documentation. c. If there is a single value for feature/attributes at each location, or if these are calculated on a coarse time scale (annually), then please provide GIS data for the following feature/attributes for the HFTD+HFRA areas of the PG&E service area: a) Average wildfire season daily max windspeed b) Percent difference from average wildfire season daily max windspeed c) Average wildfire season relative humidity d) Average wildfire season vapor pressure deficit e) Percent gusty summer day	c. The requested geospatial data is provided in the following formats. Each dataset was exported using EPSG:4326. • A shapefile is provided in the "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch01.zip" for the following data inputs. Each row represents a distribution support structure related to WDRM v4 and the associated multi year average values. WMP-Discovery 2026-2028_DR_MGRA_003-Q006Supp01 Page 2 i. Average wildfire season daily max windspeed ii. Average wildfire season relative humidity iii. Average wildfire season vapor pressure deficit • A shapefile is provided in the Attachment "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch02.zip" for the following data input. Each row represents a year of input data for a distribution support structure related to WDRM v4. i. Percent difference from average wildfire season daily max windspeed • A geotiff raster file in the Attachment "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch03.tif" for the following data input. The raster file contains one band of data and is clipped to PG&E's service territory. i. Percent gusty summer day	Joseph Mitchell	4/11/2025	5/5/2025	5/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	1	No	5	Risk Methodology & Assessment	5.4
49	MGRA	003	MGRA_003	6(s)	Yes	MGRA_003_Q6(s)	Regarding the WDRM v4 ignition probability model: a. Are the covariates calculated for each geographic location in the machine learning models such as Random Forest calculated as one value per geographic location? Or are they calculated per year? b. Please provide tabular data supporting each of the "Feature Importance" figures in the Distribution Event Probability Models v4 documentation. c. If there is a single value for feature/attributes at each location, or if these are calculated on a coarse time scale (annually), then please provide GIS data for the following feature/attributes for the HFTD+HFRA areas of the PG&E service area: a) Average wildfire season daily max windspeed b) Percent difference from average wildfire season daily max windspeed c) Average wildfire season relative humidity d) Average wildfire season vapor pressure deficit e) Percent gusty summer day	c. The requested geospatial data is provided in the following formats. Each dataset was exported using EPSG:4326. • A shapefile is provided in the "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch01.zip" for the following data inputs. Each row represents a distribution support structure related to WDRM v4 and the associated multi year average values. WMP-Discovery 2026-2028_DR_MGRA_003-Q006Supp01 Page 2 i. Average wildfire season daily max windspeed ii. Average wildfire season relative humidity iii. Average wildfire season vapor pressure deficit • A shapefile is provided in the Attachment "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch02.zip" for the following data input. Each row represents a year of input data for a distribution support structure related to WDRM v4. i. Percent difference from average wildfire season daily max windspeed • A geotiff raster file in the Attachment "WMP-Discovery2026-2028_DR_MGRA_003-Q006Supp01Atch03.tif" for the following data input. The raster file contains one band of data and is clipped to PG&E's service territory. i. Percent gusty summer day	Joseph Mitchell	4/11/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	3	No	5	Risk Methodology & Assessment	5.4
50	MGRA	003	MGRA_003	7	No	MGRA_003_Q7	Regarding Figure PG&E-6.1.3.2-1 (2026 Year Baseline) representing system-wide wildfire risk, do the values shown in the figure include PG&E's risk scaling function? a. If the answer is 'yes', please provide a figure showing the same values without the scaling function (a neutral risk attitude).	Yes, the values shown in Figure PG&E-6.1.3.2-1 (2026 Year Baseline) includes PG&E's risk scaling function. Please see the figure below which shows the same values without the scaling function (a neutral risk attitude).	Joseph Mitchell	4/11/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.2
51	MGRA	003	MGRA_003	8	No	MGRA_003_Q8	Figure 6-1 (p. 149) shows PG&E's fractional risk reduction on a yearly basis from 2023 to 2033. Using available data and methodology, please provide an equivalent risk reduction curve showing the fractional change of PG&E's overall service territory wildfire risk between 2017 and 2024.	PG&E did not start estimating wildfire risk reduction until 2023 with the 2023-2025 WMP cycle. The risk reduction calculations require temporal and spatial alignment across a model version, circuit segments, and work scope. Currently, historical circuit segment datasets have only been prepared with a WDRM model release (earliest full-territory dataset is with WDRM v3). The earliest year that we have a WDRM model, respective circuit segment data, and associated work plans is in 2023.	Joseph Mitchell	4/11/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.2
52	MGRA	003	MGRA_003	9	No	MGRA_003_Q9	Advanced Technologies PG&E states that "In 2023, there were observed ignitions that occurred during EPSS protection that were lower than the detectable thresholds of DCD. It was identified that a lower SGF pickup could have interrupted the events sooner, potentially preventing the ignition (DCD not present). In 2024, we revised SGF trip floor settings criteria and device reprogramming planned for increased detection of high-impedance faults to 5 amperage faults within 5 seconds." a. Assuming that these ignitions are listed in the GIS and tabular data provided to MGRA by PG&E, indicate which of these ignitions were the high impedance faults that could potentially be detected by lower trip settings. b. What is the estimated increase in outage rate that would be caused by lowering the SGF trip floor setting to 5 amperage within 5 seconds?	a. Ignitions 20230693, 20230823, 20230912, 20231073, and 20231074 were the high impedance faults that could potentially be interrupted sooner by lower SGF trip settings from 2023. b. As PG&E has just started to deploy the revised settings thresholds at the end of 2024 EPSS season, it is not possible to accurately estimate any negative reliability impact. While these changes are not expected to significantly contribute to negative reliability, there is not sufficient data to provide outage rate impacts at this time. PG&E will continue to monitor reliability system performance with SGF as settings are enabled in the 2025 EPSS season.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	0	No	ACI PG&E-25U-06	Evaluation and Reporting of Safety Impacts Relating to EPSS	ACI PG&E-25U-06
53	MGRA	003	MGRA_003	10	No	MGRA_003_Q10	On p. 458 PG&E writes that: "a paper on chaos and weather prediction from the European Centre for Medium-Range Weather states that: A requirement for skillful predictions is that numerical models can accurately simulate the dominant atmospheric phenomena. The fact that the description of some physical processes has only a certain degree of accuracy, and the fact that numerical models simulate only processes with certain spatial and temporal, is the second source of forecast errors. Computer resources contribute to limit the complexity and the resolution of numerical models and assimilation—since, to be useful, numerical predictions must be produced in a reasonable amount of time. These two sources of forecast errors cause weather forecasts to deteriorate with forecast time." a. Provide a citation for this paper.	Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q010Atch01.pdf," and citation below: Buizza, Roberto. "Chaos and weather prediction January 2000." European Centre for medium-range weather meteorological training course lecture series ECMWF (2002).	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	1	No	10	Situational Awareness and Forecasting	10.5
54	MGRA	003	MGRA_003	11	No	MGRA_003_Q11	Please provide tabular data in Excel spreadsheet format containing the data in the following tables: a. TABLE 4-3: FREQUENTLY DE-ENERGIZED CIRCUITS (CONTINUED) b. TABLE 5-5: SUMMARY OF TOP-RISK CIRCUITS, SEGMENTS, OR SPANS c. TABLE 6-1: PG&E PRIORITIZED AREAS BASED ON OVERALL UTILITY RISK d. Table 6-4 - TABLE 6-4: SUMMARY OF RISK REDUCTION FOR TOP RISK	Please see "WMP-Discovery2026-2028_DR_MGRA_003-Q011Atch01.xlsx" for all tables in PG&E's 2026-2028 WMP in Excel spreadsheet format.	Joseph Mitchell	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_003.zip	1	No	7	Public Safety Power Shutoff	7.7/6.2.1

55	OEIS	002	OEIS_002	1	No	OEIS_002_Q1	PG&E states on page 168 of its 2026-2028 Base WMP that "The number of PSPS events is driven by weather, in particular wind speed and fuel conditions, both of which are difficult to reduce. However, PG&E is continuously improving our risk model sensitivity to weather, vegetation, and fuel conditions through the adoption of changes in our FPI, Ignition Probability Weather, and Operability Assessment models." PG&E shows in Table 10.6.1-1 FPI Class Breakpoints on page 476 of the 2026-2028 Base WMP, that there are 4 tiers of FPI Breakpoints categorized as "Small, Large, Critical, and Catastrophic" based on potential fire acreage size. In the PSPS State Executive Briefings Slide Deck utilized on the December 9, 2024, PSPS briefing (slide 2), PG&E shows the Fire Potential Index as "R5". a. Provide the following information regarding the Fire Potential Index Breakpoints and how they are used in the initiation of PSPS events: i. Clarification of the Fire Potential Index naming conventions used between the WMP submission and those utilized on the State Executive Briefings. Describe how "Small, Large, Critical, and Catastrophic" designations relate to the R1, R2, R3, etc. designations. ii. A detailed description of what weather conditions are associated with each level of the FPI Breakpoints (i.e. Small, Large, Critical, Catastrophic). iii. The initiation criteria for PSPS events for each of the FPI Breakpoints (i.e. Small, Large, Critical, Catastrophic).	a. i. The FPI model is based on a multi-classification balanced random forest framework, a state-of-the-art open-source machine learning model based on decision trees. FPI is trained on the novel fire occurrence dataset developed by Sonoma Technology (McClure et. al., 2023) that combines agency fire information with satellite fire detections. Fire detections are derived from satellite infrared data and provide information on the location, intensity and time of fires. FPI was trained on this historical dataset using defined classes that separate small, moderate, critical, and catastrophic defined fires. These classes are determined by both fire spread and intensity. For example, a slow moving, low intensity fire would be defined as small, while a fast moving, intense fire would be defined as catastrophic. These small to catastrophic definitions described here only apply to the FPI. The FPI model was trained using historical weather, fuels and topography data to be able to forecast the probability of small to catastrophic fires in both space and time. The actual FPI model outputs the conditional probability from 0 – 100% fire growth or intensity will align to the small, moderate, critical or catastrophic classes described in the WMP. The probability of the critical and catastrophic classes combined is translated into a fire danger rating scale from R1 (low) to R5 (extreme) based on climatological breakpoints and calibration with historical incidents. This method mirrors industry standards; for example, how unitless, relativistic numeric outputs of Energy Release Component or Burning Index from the Federal National Fire Danger Rating System (NFDRS) are translated to fire danger ratings from low, medium, high, very high and extreme (https://www.nwcg.gov/publications/pms437/fire-danger/nfdrs-system-inputs and-outputs). The NFDRS fire danger rating scale versus FPI is shown below; moving up the scale from R1 to R5 increases the forecasted conditional probability of critical or catastrophic growth or intensity according to the FPI classifications described above. We use the R (Rating) scale and not the NFDRS scale based on a historical request from agencies. Table 1. Fire potential index scale versus NFDRS rating and color scale WMP Discovery 2026-2028 DR_OEIS_002-Q001 Page 3	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	7	Public Safety Power Shutoff	7
56	OEIS	002	OEIS_002	2	No	OEIS_002_Q2	Regarding improvements to accuracy of asset inventory data On page 536 of its 2026-2028 Base WMP, PG&E describes its objective to "evaluate and create new method(s) to improve the accuracy of asset inventory data (ES-02)" as an effort that "involves the design, development, and evaluation of methods to validate the accuracy of asset inventory data," and Table 12-1 (page 538) states that the objective completion date is December 31, 2026. Additionally, Table 13-2 (page 553) identifies that the "Filing Asset Inventory Data Gaps (AI-11)" initiative from the 2023-2025 Base WMP "will continue under ES-02." a. Describe the status of PG&E's efforts to populate missing age data in the asset registry. b. Explain the relationship between ES-02 and the Asset Registry Data Quality (ARDQ) program described in its response to PG&E-22-33 – Progress on Filing Asset Inventory Data Gaps (PG&E 2023-2025 Base WMP RB, pages 1133-1135). c. Describe the milestones PG&E will use to measure progress toward this objective.	a. PG&E understands this sub-question to be related to the 2023-2025 AI-11 objective to populate missing age data in the asset registry to a 90% weighted average across risk prioritized distribution and transmission equipment types. PG&E has other data remediation projects and programmatic efforts like its map correction program that will not be covered in this response. Below are the milestones PG&E has achieved under the AI-11 objective: • In 2023, PG&E completed proof-of-concept projects to test the feasibility of manual and automated methods for locating missing age data, including field data collection, electronic records review, paper record scanning and review, and identification of PG&E age proxy data for the targeted equipment types. WMP-Discovery 2026-2028_DR_OEIS_002-Q002 Page 2 • In 2024, PG&E piloted both automated and manual methods of identifying age data to determine the scalability of each method. From these activities, PG&E determined that the cost and time required to manually remediate installation date data warranted a shift in approach to generating Estimated Asset Age using available age proxy data. • In Q4 of 2024, PG&E presented to the OEIS the plan to shift the focus of the AI-11 commitment toward generating Estimated Asset Ages. • In Q1 of 2025, PG&E deployed its Estimated Asset Age model that generates data-derived installation years for the 11 targeted, risk-prioritized transmission and distribution types. • In Q1 of 2025, PG&E also finalized its extended piloting to identify ways to optimize the scanning and review of paper records to identify installation dates. • By end of Q4 2025, PG&E expects the quantification of the Estimated Asset Age model results to be available. b. The Asset Registry Data Quality (ARDQ) program is designed to measure asset registry data quality dimensions using data quality rules. However, assessing the data quality dimension of Accuracy requires real-world validation. As such, the ARDQ program is not currently equipped with a means to establish a baseline of data accuracy and measure improvements. The objective of the ES-02 project is to identify and evaluate various methods for validating the accuracy of targeted asset	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	ES-02/AI-11	ES-02/AI-11	ES-02/AI-11
57	OEIS	002	OEIS_002	3	No	OEIS_002_Q3	Regarding PG&E's Q4 quarterly data report for 2022, 2023, and 2024 PG&E's 2026-2028 Base WMP defines "Fire Rebuild" work as undergrounding installations in areas impacted by wildfires within High Fire Threat District (HFTD); and defines "Community Rebuild" work as undergrounding installations in areas impacted by wildfires outside of the HFTD. Additionally, PG&E states that its undergrounding work includes activities under System Hardening, Butte County Rebuild, Community Rebuild programs, and other efforts in HFTD, High Fire Risk Area (HFRA), buffer zones, and fire rebuild areas. a. For 2024: PG&E reported 348.3 circuit miles total completed under 10K Undergrounding (GH-04). Provide a breakdown of the total miles completed in 2024 by the following categories: i. Undergrounding as part of System Hardening (GH-01) activity. ii. Undergrounding as part of its Fire Rebuild program iii. Undergrounding as part of its Community Rebuild program iv. Any other undergrounding work performed in HFTD, HFRA and Buffer Zone A. For each other type of undergrounding work specified here, explain why this work was not reported under the System Hardening (GH-01) activity. b. For 2023: PG&E reported 363.9 circuit miles total completed under 10K Undergrounding (GH-04). Provide a breakdown of the total miles completed in 2023 by the following categories: i. Undergrounding completed as part of System Hardening (GH-01); ii. Undergrounding completed as part of the Fire Rebuild program; iii. Undergrounding completed as part of the Community Rebuild program; iv. Any other undergrounding completed in HFTDs, HFRAs, or buffer zones. A. For each other type of undergrounding work specified here, explain why this work was not reported under the System Hardening (GH-01) activity.	Please see the table below for the requested information in subparts a. and b. The data provided is updated as of January 14, 2025, in alignment with the Q4 2024 WMP Quarterly Data Report (QDR). Note, the data provided is slightly adjusted from the values reported in the Q4 2023 QDR due to the completion of project as-built construction packages. For clarity, in 2024, PG&E completed 257.8 miles under WMP initiative GH-04, not 348.3 miles referenced in the question, which are the miles completed in WMP initiative GH-01, instead. Based on the detail included in the question, we assume the intention was to include the total completed GH-04 mileage and associated sub-programs, which is reflected in our response. Year i. Undergrounding as part of System Hardening activity1 ii. Undergrounding as part of the Fire Rebuild program2 iii. Undergrounding as part of the Community Rebuild program3 iv. Any other undergrounding work performed in HFTD, HFRA and Buffer Zone4 Total (i+ii+iv) a. 2024 213.8 27.5 42.0 2.0 257.8 b. 2023 284.4 57.6 75.7 4.1 364.2 1 System Hardening Undergrounding miles are included in both 2023 Base WMP Initiatives: GH-01 System Hardening and GH-04 Undergrounding	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.2
58	OEIS	002	OEIS_002	4	No	OEIS_002_Q4	Regarding Distribution Infrared Inspections On page 247 of its 2026-2028 WMP, PG&E states that it shifted its distribution IR inspection program from inspecting all the HFTD/HFRA in 2020-2022, to focusing on specific areas with known issues expected to be detectable by IR in 2023-2025 (mostly outside of the HFTD/HFRA). In 2026-2028, PG&E plans to "target IR to areas of emerging concern as needed." a. Provide the following distribution IR inspection data: i. The number of inspections performed in 2021, 2022, 2023, and 2024. ii. The number of inspections performed in the HFRA/HFTD in 2021, 2022, 2023, and 2024. iii. The number of level 1 conditions identified by distribution IR inspections in 2021, 2022, 2023, and 2024. iv. The number of level 1 conditions identified by distribution IR inspections in the HFRA/HFTD in 2021, 2022, 2023, and 2024. v. The number of level 2 conditions identified by distribution IR inspections in 2021, 2022, 2023, and 2024. vi. The number of level 2 conditions identified by distribution IR inspections in the HFRA/HFTD in 2021, 2022, 2023, and 2024 b. Provide the estimated number of level 1 and 2 conditions that would have been identified by distribution detailed inspections, aerial scan inspections, or sensor readings, had an inspection or sensor reading been used in place of the IR inspection. i. For each IR condition that PG&E anticipates would have been identified by a sensor reading, provide the sensor manufacturer and model/series number that could have identified the issue, and the percentage of PG&E's assets in the HFTD/HFRA that are currently actively monitored by the sensor. ii. For each IR condition that PG&E anticipates would have been identified by a detailed or scan inspection, provide a description of the visible indicators expected to be present and the corresponding inspection guidance on job aid TD-2305M-JA02 rev 14. c. Provide the criteria PG&E will use to determine areas of emerging concern that warrant IR inspections.	a. Table 1: Q4(a)(i)-(vi) Infrared Inspections and Findings Metric Number Metric Name 2021 2022 2023 2024 Q4(a)(i) Total Inspections Performed1 12948 10080 3686 2224 Q4(a)(ii) HFTD-HFRA Inspections Performed1 10094 9560 3618 2152 Q4(a)(iii) Total Level 1 Conditions Identified 0 0 0 0 Q4(a)(iv) HFTD-HFRA Level 1 Conditions Identified 0 0 0 0 Q4(a)(v) Total Level 2 Conditions Identified 108 72 35 21 Q4(a)(vi) HFTD-HFRA Level 2 Conditions Identified 61 62 26 12 1. Infrared (IR) inspections are conducted by circuit-mile. Inspection counts represent miles of conductor inspected by IR. b. i. Sensors can detect some of the excessive heat conditions that would be detected by IR, but this ability would be highly dependent on the specific type and placement of the sensor. The proportion of IR conditions that may have	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.10
59	OEIS	002	OEIS_002	5	No	OEIS_002_Q5	Regarding distribution detailed aerial and ground inspections On page 226 of it WMP, PG&E sets a target of 218,000 distribution detailed inspections per year for 2026-2028. The target states the inspections can be either ground or aerial; separate targets are not provided for detailed aerial or detailed ground inspections. a. Provide the following information related to scheduling detailed aerial and ground inspections: i. Does PG&E have controls in place to avoid an asset being only subject to one variety of detailed inspection for extended periods of time? (i.e. an asset in an area of extreme consequence and extreme wildfire risk only receiving detailed aerial inspections for 10 years). Provide PG&E's reasoning for its chosen approach. b. Some hazardous conditions may be less likely identified via ground inspections while others may be less likely identified via aerial inspections. ii. Provide a list of conditions that PG&E has recognized as being more likely identified via aerial inspections and less likely identified via ground inspections. Provide a brief explanation for each condition. A. If PG&E has not recognized any such conditions, briefly discuss its reasoning. iii. Provide a list of conditions that PG&E has recognized as being more likely identified via ground inspections and less likely identified via aerial inspections. Provide a brief explanation for each condition. A. If PG&E has not recognized any such conditions, briefly discuss its reasoning.	a. PG&E anticipates that the vast majority of detailed inspections completed in HFTD/HFRA in the 2026-2028 time frame will be completed via aerial means. PG&E is working towards having the aerial inspection meet PG&E's GO 165 detailed inspection requirements beginning in 2026. Ground inspections may continue to be used where aerial inspections cannot access the structure due to various issues such as customer or vegetation. Changes in HFTD/HFRA inspection frequency are reviewed and approved through PG&E's Wildfire Risk Governance Committee to ensure changes mitigate wildfire risk. As described in response to part b below, PG&E expects that the detailed aerial inspection will detect all conditions that the ground inspection detects. b. PG&E has been improving and maturing its aerial inspections as aerial has evolved from pilot stages to an inspection deployed at scale. In 2023, the pilot aerial inspection focused on only pole top conditions. In 2024, as PG&E deployed the inspection at scale for the first time, we expanded the aerial inspection to include the full structure. The aerial inspection performed by PG&E in 2024 and 2025 is a risk-based inspection, focusing on identifying Level 1 and 2 conditions. It was not a detailed GO 165 inspection for all abnormal compelling conditions. This risk-based aerial inspection demonstrated improved ability to detect most Level 1 and 2 conditions on the assets that are most likely to fail: pole, crossarm/insulator, equipment, and conductor conditions. However, since aerial inspection was limited to Level 1 and 2 conditions, it would not report Level 3 conditions such as high voltage sign, visibility strip, and guy issues that the ground inspection detects. For 2025, PG&E already updated the aerial shot sheet to enable better capture of exposed grounds and issues that require particular angles to detect such as leaning poles and slack guys. There was also a need to create a handheld shot sheet in order to capture photos where drone flights were not able to be completed due to safety concerns or tree obstructions. This shot profile will allow the desktop inspector to do a full inspection using a combination of drone imagery and images captured from the handheld device. Currently, PG&E is identifying additional requirements to make the aerial inspection a GO-165 detailed inspection beginning in 2026. These include adding the equipment for aerial to report Level 3 conditions as well as the handful of	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.8

60	OEIS	002	OEIS_002	6	No	OEIS_002_Q6	Regarding transmission detailed aerial and ground inspections On page 226 of it WMP, PG&E sets a target of 22,000 transmission detailed inspections per year. The target states the inspections can be either ground or aerial; separate targets are not provided for detailed aerial or detailed ground inspections. a. Provide supporting documentation for transmission detailed inspections, including any job aids, procedural documentation, or inspector checklists. Specify any documents that are unique to aerial or ground inspections. b. Provide the following information related to scheduling detailed aerial and ground inspections: i. Does PG&E have controls in place to avoid an asset being only subject to one variety of detailed inspection for extended periods of time? (i.e. an asset only receiving detailed aerial inspections for 10 years). Provide PG&E's reasoning for its chosen approach. c. Some hazardous conditions may be less likely identified via ground inspections while others may be less likely identified via aerial inspections. i. Provide a list of conditions that PG&E has recognized as being more likely identified via aerial inspections and less likely identified via ground inspections. Provide a brief explanation for each condition. A. If PG&E has not recognized any such conditions, briefly discuss its reasoning. ii. Provide a list of conditions that PG&E has recognized as being more likely identified via ground inspections and less likely identified via aerial inspections. Provide a brief explanation for each condition. A. If PG&E has not recognized any such conditions, briefly discuss its reasoning.	a. See attachment "WMP-Discovery2026-2028_DR_OEIS_002-Q006Atch01CONF.zip" for 2025 job aids, inspection form, and inspection procedures. b. i. Currently both Ground and Aerial inspections are required for HFTD/HFRA structures but the frequency or population scope of either inspection method may evolve in the future to best address wildfire risk based on inspection finding trends and emerging technology. Changes in HFTD/HFRA inspection frequency are reviewed and approved through PG&E's Wildfire Risk Governance Committee to ensure changes mitigate wildfire risk. c. i. PG&E has identified conditions located at the top of structures are more likely to be identified by Aerial in comparison to Ground inspections due to the higher vantage point of the aerial method. This includes conditions related to: • Conductor • Jumper • Insulator • Switch • Pole top • Tower peak ii. PG&E has identified conditions located at the bottom of structures are more likely to be identified by Ground in comparison to Aerial inspections due to the ground level vantage point of the inspectors. This includes conditions related to: • Foundations • Guys • Anchors	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	1	No	8	Grid Design, Operations, and Maintenance	8.3.1
61	OEIS	002	OEIS_002	7	No	OEIS_002_Q7	Regarding transmission switch function testing PG&E does not provide a target for its transmission switch function testing inspection program in its 2026-2028 Base WMP. However, of the ten inspection initiatives with first rates provided, transmission switch function testing demonstrates the highest first rate of level 1 conditions and the fourth highest first rate of level 2 conditions. a. Briefly discuss PG&E's reasoning for not including a compliance target for transmission switch testing. b. Provide the following data for transmission switch function testing: i. The total number of transmission switches in the HFTD/HFRA in 2022, 2023, and 2024. ii. The number of transmission switch function tests performed in the HFRA/HFTD in 2022, 2023, and 2024. iii. The number of level 1 conditions identified in 2022, 2023 and 2024. iv. The number of level 1 conditions with associated wildfire risk identified in 2022, 2023, and 2024. v. The number of level 2 conditions identified in 2022, 2023 and 2024. vi. The number of level 2 conditions with associated wildfire risk identified in 2022, 2023, and 2024.	a. The Switch Function Test program is in the process of maturation and is reliant on opportunistic clearance timing. The process of scheduling and executing these inspections has been steadily improving as shown by the growth in completed inspections year over year. PG&E tentatively expects to revisit the decision on whether to include this program as a WMP target in 2029. WMP-Discovery 2026-2028_DR_OEIS_002-Q007 Page 2 b. NOTE: Due to the small sample size of the Switch Function Test program the first rate reported in PG&E's submitted WMP includes both HFTD and Non-HFTD.	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.5
62	OEIS	002	OEIS_002	8	No	OEIS_002_Q8	Regarding vegetation inspections and pole clearing targets On WMP page 356, PG&E provides quantitative targets for its vegetation inspection and vegetation management programs. For the column "% HFTD Covered in 2026" it appears PG&E provided the percentage of the 2026 target that is performed within the HFTD. The WMP Guidelines (page 104) defines this column as "the percentage of total overhead circuit miles in the HFTD covered by the [Year 1] target (e.g., 100 circuit miles of patrol inspections in [Year 1] divided by 300 overhead circuit miles in the HFTD equals 33 percent coverage)" a. Provide the equation PG&E used to calculate the "% HFTD Covered in 2026" column. b. If PG&E used a different equation other than the one defined in the Guidelines, provide "% HFTD in 2026" figures for each of PG&E's targets in Table 9-2 using the calculation defined in the WMP Guidelines. For targets that do not use overhead circuit miles as a unit, the denominator should be the total number of the unit present the HFTD.	a. The equation used to calculate the "% HFTD Covered in 2026" is as follows: For VM-02: The quantity of VM-02 inspected poles in HFTD divided by the total inventory of VM-02 inspected poles for 2026. For VM-05, VM-06, VM-07: The quantity of sub stations/power generation facilities in HFTD divided by the total inventory of inspected substations for 2026. For VM-13, VM-14, VM-16, and VM-17: The total 2026 program miles in HFTD is divided by the total 2026 program miles target. WMP-Discovery 2026-2028_DR_OEIS_002-Q008 Page 2 b. The %HFTD as defined in the WMP guidelines are as follows: VM-02: 8% of Distribution Poles in HFTD for 2026 VM-05: 100% of Distribution substations in HFTD for 2026 VM-06: 100% of Transmission substations in HFTD for 2026 VM-07: 100% of power generation substations in HFTD for 2026 VM-13: 100% of Routine Transmission-Ground miles in HFTD for 2026 VM-14: 100% of Transmission Hazard Patrol in HFTD for 2026 VM-16: 100% of HFTD distribution circuit miles in 2026 VM-17: 59% of HFTD distribution circuit miles in 2026	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	9	Vegetation Management & Inspections	9.4
63	OEIS	002	OEIS_002	9	No	OEIS_002_Q9	Regarding Distribution Routine Patrol quantitative targets (VM-16) On WMP page 356, PG&E sets cumulative quarterly targets for Q4 in 2026, 2027, and 2028 of 78,200, 77,800, and 77,500 circuit miles respectively. These are annual decreases of 400 miles from 2026 to 2027, and 300 miles from 2027 to 2028. a. Do the incrementally decreasing targets reflect miles of distribution lines projected to be undergrounded? i. If so, explain how PG&E calculated each annual decrease in Distribution Routine Patrol target circuit miles. ii. If not provide the justification for each annual decrease in Distribution Routine Patrol target circuit miles.	a. Yes, the incremental decrease is based on mileage reduction due to undergrounding for the respective year. i. PG&E utilized the total mileage from prior year's total distribution mileage less the total underground mileage workplan for the current year to end of year. For example, the tentative 2026 underground mileage plan is 400 miles, therefore the inspection targets were reduced by 400 miles for 2027. ii. N/A	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	9	Vegetation Management & Inspections	9.1.2
64	OEIS	002	OEIS_002	10	No	OEIS_002_Q10	Regarding PG&E's Pole Clearing Program target (VM-02) On page 356 of its 2026-2028 Base WMP, PG&E sets cumulative quarterly targets for Q4 in 2026, 2027, and 2028 of 70,000 distribution poles. a. Clarify whether PG&E's target is to clear vegetation around 70,000 distribution poles or inspect 70,000 distribution poles and clear vegetation at those poles only as needed. b. Of the 70,000 poles targeted for pole clearing specify how many of those poles: i. Are required to be cleared under Public Resources Code (PRC) 4292. ii. Are not required to be cleared under PRC 4292.	a. PG&E's target is to inspect 871,000 distribution/transmission poles and a target to clear vegetation at 70,000 of those poles if necessary. Please note, the VM-02 Pole Clearing target will be adjusted as determined by inspections in the previous year and may additionally be impacted by changes to facilities or based on other utility risk mitigation reasons. b. Based on the 2025 analysis: i. Approximately 66% of the Poles are required to be cleared under PRC 4292. ii. Approximately 34% of these Poles are not required to be cleared under PRC 4292. See WMP Section 9.4.1 for further information regarding PG&E's risk reduction pole clearing work.	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	9	Vegetation Management & Inspections	9.4
65	OEIS	002	OEIS_002	11	No	OEIS_002_Q11	Regarding PG&E-238-23 Identification of High-Risk Species for Focused Tree Inspections On page 591 of its 2026-2028 WMP, PG&E defines "criteria for determining which [tree] species warrant increased scrutiny during Focused Tree Inspections and other inspections." PG&E states that it provides Vegetation Management Inspectors (VMIs) historical outage data and developed a "dashboard [that] allows the user to drill down to the circuit or CPZ level to see historical outage and ignition causes by species, diameter, and failure." a. Is PG&E able to calculate outage and ignition probabilities by tree species at the CPZ level?	a. PG&E has calculated outage probability by tree species at the eco-region level. There is not enough data at the CPZ level to confidently estimate the outage or ignition probability of tree species at such a granular level. PG&E plans to evaluate ignition probability of tree species at the eco-region level in 2025. i. At present, we do not plan to use this information to inform our vegetation management program. ii. N/A	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	ACI PG&E-23B-15	ACI PG&E-23B-15	ACI PG&E-23B-15
67	OEIS	002	OEIS_002	12	No	OEIS_002_Q12	Regarding Integrated Vegetation Management (VM-15) On page 384 of its 2026-2028 WMP, PG&E states that "[IVM [transmission integrated vegetation management] LiDAR data…assists in vegetation conditions by electric transmission lines (ETL)." On page 358, PG&E targets 17,500 miles annually for its Routine Transmission Patrol (VM-13), and 5,625 circuit miles annually for its Transmission Hazard Patrol (VM-14). a. Do the Routine Transmission Patrol (VM-13) and the Transmission Hazard Patrol (VM-14) also capture the LiDAR data used for TVM? b. List the number of circuit miles PG&E inspects annually using LiDAR to assess transmission rights-of-way for IVM.	a. Yes; TIVM utilizes the same LiDAR collection as Routine Transmission Patrol (VM -13) and Transmission Hazard Patrol (VM-14). b. The circuit mileage used to assess transmission rights-of-way for IVM (VM-15) are the same as the circuit mileage assessed for Routine Transmission Patrol (VM-13), which is approximately 17,500 circuit miles systemwide. c. Fixed wing aircraft are utilized to capture imagery for the Transmission Hazard Patrol program. d. PG&E does not collect any other remote sensing data besides ortho-imagery during Transmission Hazard Patrol (VM-14).	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	9	Vegetation Management & Inspections	9.7
68	OEIS	002	OEIS_002	13	No	OEIS_002_Q13	Regarding risk model documentation a. Page 6 of PG&E's Distribution Event Probability Models Version 4 (DEPM v4) Documentation includes "RuDA Algorithms and Methodologies" under its list of documents as part of the documentation suite for the Wildfire Distribution Risk Model (WDRM) v4. Provide a copy of this document. b. Figure 24: RuDA Product Plan – WDRM on page 25 of PG&E's Wildfire Distribution Risk Model Version 4 (WDRM v4) Documentation shows that the following components are not included in the WDRM plan: Insulator Contamination Update, Public Safety Risk Model v2, Reliability Risk Model v1, Public Safety Consequence v2, and Reliability Consequence V1. i. Why are these components not included in WDRM plans? ii. Provide documentation that captures and discusses these components, similar to the documentations provided for the DEPM v4, WDRM v4, and WFC v4.	a. "See "WMP-Discovery2026-2028_DR_OEIS_002-Q013Atch01.pdf". b. i. The Insulator Contamination model is under development for the WTRM but is not yet completed. It will be documented with the other transmission models, which are separate from the WDRM. Models for Reliability and Public Safety risk are separate from the WDRM planning models. They are developed to help inform internal investment planning primarily outside of HFTD. ii. Reliability and Public Safety risk models are not considered components of the WDRM and are not currently used for wildfire mitigation planning.	Nathan Poon	4/11/2025	4/21/2025	4/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	1	No	Appendix B	Supporting Documentation for Risk Methodology	Appendix B
69	OEIS	002	OEIS_002	14	No	OEIS_002_Q14	Regarding suppression and egress impacts On page 32 of PG&E's Wildfire Consequence Model Version 4 (WFC v4) Documentation, PG&E states that "This was not the original expectation for adding the wildfire Suppression and public Egress impacts, resulting in additional efforts to validate the results and confirm the model development" when discussing the adjusted consequence curve and associated work to mitigate 60% of the wildfire risk. a. How did PG&E calculate the mileages associated with mitigating 60% of the wildfire risk? b. What "additional efforts" were completed for model development as a result of this finding? c. How did any efforts resulting in response to this validation impact the consequence curve? Provide copies of the curve before and after. d. Provide a step-by-step process showing how PG&E calculated the associated mileage of work needed to mitigate 60% of the wildfire risk before and after.	a. The plots were generated by creating risk rankings for all circuit segments with overhead conductor assets within the PG&E territory using approximated risk values. Approximated risk values were calculated using release candidate asset probability data that was converted into spatial values for simplified compositing and aggregation multiplied times the base and adjusted consequence values. Processing the circuit segments in order of their risk rank, each circuit segment's summed risk value, as a percentage of summed risk in the service territory, was sequentially subtracted from 100% to form the data series for the y-axis values for the baydown curves. The x-axis data series was formed by creating a running total of miles for each ordered circuit segment. WMP-Discovery 2026-2028_DR_OEIS_002-Q014 Page 2 b. The sentence highlighted from the Wildfire Consequence Model v4 documentation indicates that incorporating the egress and suppression impacts into wildfire consequence resulted in risk baydown curve that showed that the number of miles that needed to be undergrounded to mitigate 60% of the wildfire risk was higher than anticipated. As a result of this finding, the team dedicated extra validation to confirm the results by evaluating against historical fire outcomes. The additional validation resulted in the removal of several lightning fires from the consequence training data set as described in Section 3.2.4 on page 12 of the consequence documentation. In the end, the team concluded that the general flattening of the risk baydown curve when adjusting consequence for egress and suppression was a correct outcome. c. As stated above in (b.), lightning fires were taken out of the historical fire data set used to calibrate the wildfire consequence model as they skewed results for fires initiated on non-predicted destructive weather days, which resulted in slightly steeper baydown curves for both base and adjusted consequence. No changes were made that altered the Egress or Suppression impacts for the adjusted consequence. The relative differences between the base and adjusted consequence curves remained as depicted in Figure 20. d. The requested process was described in the response for (a.).	Nathan Poon	4/11/2025	4/21/2025	4/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	5	Risk Methodology & Assessment	5.4
70	OEIS	002	OEIS_002	15	No	OEIS_002_Q15	Q15. Regarding PG&E's Ignition Investigation Process Figure PG&E-8.1.3.1-2: Summary of Ignition Investigation Process, on page 123 of PG&E's 2026-2028 Base WMP includes a step for "Corrective Actions Generated and Assigned." a. Provide a list of corrective actions generated by the ignition investigation team that have led to changes in PG&E's wildfire mitigation efforts since PG&E's 2023-2025 Base WMP. b. Provide a list of ignitions, including causes and locations, associated with the changes discussed in part (a).	Many of the corrective actions generated by single incidents are focused on the single incidents and do not directly lead to changes in PG&E's wildfire mitigation efforts. However, PG&E conducts trend analyses to identify possible corrective actions, including corrective actions associated with some of PG&E's wildfire mitigation programs. The corrective actions listed below, which did lead to changes in our wildfire mitigation efforts, are based on trend analyses across many incidents along with input from subject matter experts who contribute to the investigation. The table below includes the mitigation efforts that have resulted from analyzing trends generated from the ignition investigation team along with various example ignitions associated with those corrective actions and causes thereof. Corrective Action Example Associated Indexes Cause Location Improvements to High Impedance Fault Protection (including implementing lower sensitive ground fault thresholds and high 20230530, 20230692, 20230693, 20230782N, 20230792, 20230823, 20230912, 20230981, Various Various WMP-Discovery 2026-2028_DR_OEIS_002-Q015 Page 2 Corrective Action Example Associated Indexes Cause Location impedance fault detection on four-wire circuits) 20231073, 20231074, 20231083 Expanded Ground Vegetation Clearing around Poles 20230966, 20231053, 20240583, 20240887, 2024110SN Various Various Mitigations for SMLL20 Fuses	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	ACI PG&E-25U-01	Outage-to-Ignition Risk Analyses	ACI PG&E-25U-01

71	OEIS	002	OEIS_002	16	No	OEIS_002_Q16	Regarding Table 5-5: Summary of Top Risk Circuit Segments a. Provide a copy of Table 5-5: Summary of Top Risk Circuit Segments from the 2026-2028 Base WMP via Excel that includes additional columns for: i. WFC v4 Consequence Values ii. PSPS Risk Score iii. PEDS Risk score iv. HFTD Designation, including percentage by circuit mileage that falls in each designation (HFTD Tier II, HFTD Tier III, non-HFTD/HFRA, and non-HFTD/non-HFRA)	a. Expanded Table 5-5 with requested data is provided in "WMP-Discovery2026-2028_DR_OEIS_002-Q016Atch01.xlsx".	Nathan Poon	4/11/2025	4/21/2025	4/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	1	No	5	Risk Methodology & Assessment	5.5.2
72	OEIS	002	OEIS_002	17	No	OEIS_002_Q17	Regarding Table 6-4: Summary of Risk Reduction for Top Risk Circuits Provide a copy of Table 6-4: Summary of Risk Reduction for Top Risk Circuits from the 2026-2028 Base WMP via Excel with the following additions: a. The associated circuit mileage for each of the hardening activities (covered conductor installation, undergrounding, and line removal) planned for each circuit segment for each year of the Base WMP (2026-2028). b. The percentage (by circuit mileage) in which each circuit segment has already been planned for hardening as part of a previous Wildfire Mitigation Plan up to 2025, broken out by type of hardening.	Please see "WMP-Discovery2026-2028_DR_OEIS_002-Q017Atch01.xlsx" for the requested information. a. In response to subpart a: Please reference columns I-K, N-P, and S-U for miles planned in 2026, 2027, and 2028, respectively. Miles provided by circuit segment are estimates and subject to change as the 2026-2028 workplan continues to move through planning and execution phases. Circuit segment names can vary across different Wildfire Distribution Risk Model (WDRM) versions. Circuit segments in the 2026-2028 WMP are from WDRM v4. As a result, forecast work might not be reflected in the reported mileages if the circuit segment name has changed. b. In response to subpart b: Please reference columns D-F. WMP-Discovery 2026-2028_DR_OEIS_002-Q017 Page 2 For reference, as adopted by 2023 GRC Decision (Conclusion of Law 80, pg. 862), the undergrounding to overhead conversion factor is 1 mile of overhead to 1.25 miles of undergrounding. We have adjusted the % of Circuit Segment that is Undergrounded through 2025 (Column D) to reflect this ratio. Total circuit segment mileage used in this analysis represents miles associated with WDRM v4. Circuit segment mileage varies in each WDRM update. Mileage completed/planned on a circuit segment may exceed the total circuit segment mileage due to changes across risk model updates. As noted in subpart a, circuit segment names also change across different WDRM versions, and there may be completed or forecast work not reflected in these mileages if the circuit segment name changed. For subprojects spanning multiple circuit segments, the total mileage is attributed to the primary circuit segment. This results in the primary circuit segment having more	Nathan Poon	4/11/2025	4/16/2025	4/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	1	No	5	Risk Methodology & Assessment	5.5.2
72	OEIS	002	OEIS_002	17(a)	Yes	OEIS_002_Q17(a)	Regarding Table 6-4: Summary of Risk Reduction for Top Risk Circuits Provide a copy of Table 6-4: Summary of Risk Reduction for Top Risk Circuits from the 2026-2028 Base WMP via Excel with the following additions: a. The associated circuit mileage for each of the hardening activities (covered conductor installation, undergrounding, and line removal) planned for each circuit segment for each year of the Base WMP (2026-2028). b. The percentage (by circuit mileage) in which each circuit segment has already been planned for hardening as part of a previous Wildfire Mitigation Plan up to 2025, broken out by type of hardening.	Please see attachment "WMP-Discovery2026-2028_DR_OEIS_002-Q017Rev01Atch01.xlsx" for the requested information. a. Please reference columns I-K, N-P, and S-U for miles planned in 2026, 2027, and 2028, respectively. Miles provided by circuit segment are estimates and subject to change as the 2026-2028 workplan continues to move through planning and execution phases. Circuit segment names can vary across different Wildfire Distribution Risk Model (WDRM) versions. Circuit segments in the 2026-2028 WMP are from WDRM v4. As a result, forecast work might not be reflected in the reported mileages if the circuit segment name has changed. b. Please reference columns D-F. For reference, as adopted by 2023 GRC Decision (Conclusion of Law 80, pg. 862), the undergrounding to overhead conversion factor is 1 mile of overhead to 1.25 WMP-Discovery 2026-2028_DR_OEIS_002-Q017Rev01 Page 2 miles of undergrounding. We have adjusted the % of Circuit Segment that is Undergrounded through 2025 (Column D) to reflect this ratio. Total circuit segment mileage used in this analysis represents miles associated with WDRM v4. Circuit segment mileage varies in each WDRM update. Mileage completed/planned on a circuit segment may exceed the total circuit segment mileage due to changes across risk model updates. As noted in subpart a, circuit segment names also change across different WDRM versions, and there may be completed or forecast work not reflected in these mileages if the circuit segment name changed. For subprojects spanning multiple circuit segments, the total mileage is attributed to the primary circuit segment. This results in the primary circuit segment having more	Nathan Poon	4/11/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	1	No	5	Risk Methodology & Assessment	5.5.2
73	OEIS	002	OEIS_002	18	No	OEIS_002_Q18	Regarding Independent Review of PG&E's Wildfire Risk Model For each of the following recommendations made in the E3 Review of PG&E's Wildfire Risk Model Version 4, provide a description of 1) the progress/improvements made, 2) the current status, 3) the timeline/completion date for addressing the recommendation, and 4) the model(s) and associated version impacted by implementing the recommendation. a. Right-size development efforts based on importance and impact (pp. 11, 36, 50, 59) b. Justify and seek improvements for model approaches that dilute valuable upstream detail: consequence binning and conservative age logic (pp. 11, 49, 55, 59) c. Report risk + uncertainty in outputs and develop a process to understand how individual modeling updates impact results (pp. 12, 33, 60) d. Incorporate air quality and health impacts (pp. 13, 57, 60) e. Increase collaboration between modeling efforts (p. 37) f. Develop robust validation procedures (p. 49) g. Improve transparency and assessment of proprietary wildfire spread modeling and the wildfire consequence model at large (p. 56) h. Consider the differences in mitigation lifetimes (p. 58)	a. Right-size development efforts PG&E continuously manages and adjusts the resources dedicated to the development of the WDRM and WTRM models based on regulatory requirements and PG&E user needs. As managing resources is an ongoing effort to respond to changing internal and external needs, there are no committed resource targets and timelines to be tracked. b. Consequence binning and conservative age logic i. Conservative age logic: Initial improvements to the conservative age logic have already been released with the latest WTRM model release. The improvements are ongoing and will continue to improve with each new model release. ii. Consequence binning: PG&E is investigating methods to create a Wildfire Consequence output with a continuous distribution, aiming to replace the eight Consequence regimes from version 4. If any of these methods demonstrate predictive accuracy during validation and review, they will be incorporated into version 5 of the Wildfire Consequence model. c. Report risk + uncertainty in outputs and develop a process to understand how individual modeling updates impact results This E3 recommendation proposes that a different methodology be adopted for mitigation project selection, which would in turn require specific risk model functionality development. PG&E does not plan to commit any resources for this recommendation until the proposed methodology has been thoroughly discussed and a decision has been made to change from the current risk ranking process. d. Incorporate air quality and health impacts This E3 recommendation is targeted at all IOUs and the State of CA. While this is an area of interest for PG&E research, there are currently no committed development objectives for these impacts. e. Increase collaboration between modeling efforts PG&E has already implemented E3's recommendation to improve the collaboration of modeling efforts. The PG&E Risk and Data Analytics (RaDA) team that produces the WDRM and WTRM models was reorganized in late 2023. The data scientists that produce the event probability models for distribution and transmission assets now belong to a common data science team. For several event types, the same data	Nathan Poon	4/11/2025	4/21/2025	4/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_002.zip	0	No	5	Risk Methodology & Assessment	5.4
74	SPD	001	SPD_001	1	No	SPD_001_Q1	Provide the confidential versions of PG&E's 2026-2028 Wildfire Mitigation Plan (WMP) and any confidential associated documents or attachments submitted to the Office of Energy Infrastructure and Safety not currently on PG&E's Community Wildfire Safety Program Website (Community Wildfire Safety Program).	PG&E did not submit a confidential version of its 2026-2028 Wildfire Mitigation Plan or any confidential associated documents or attachments.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	N/A	N/A	N/A
75	SPD	001	SPD_001	2	No	SPD_001_Q2	The PG&E's 2023-2025 WMP contained attachments PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_Redacted.xlsx and PGE_2023_WMP_R0_Section_642_Atch01.xlsx. Submit equivalent documents for the 2026-2028 WMP. Schedule a meeting with SPD if equivalent documents do not exist.	With regard to the 2023-2025 WMP attachment titled "PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_Redacted.xlsx," PG&E does not have this information readily available in the format requested. We are compiling it and will supplement the response by Friday, April 25. With regard to the 2023-2025 WMP attachment titled PGE_2023_WMP_R0_Section_642_Atch01.xlsx, please refer to Table 6-4 included in Appendix F of PG&E's 2026-2028 WMP.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	6	Wildfire Mitigation Strategy Development	6
75	SPD	001	SPD_001	2(s)	Yes	SPD_001_Q2(s)	The PG&E's 2023-2025 WMP contained attachments PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_Redacted.xlsx and PGE_2023_WMP_R0_Section_642_Atch01.xlsx. Submit equivalent documents for the 2026-2028 WMP. Schedule a meeting with SPD if equivalent documents do not exist.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_001-Q002Supp01Atch01CONF.xlsx" and for documentation equivalent to "PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_Redacted.xlsx."	Eddie Schmitt	4/15/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	6	Wildfire Mitigation Strategy Development	6
76	SPD	001	SPD_001	3	No	SPD_001_Q3	For FIGURE PG&E-8.3.8.3-1, FIGURE PG&E-8.3.8.3-2, and FIGURE PG&E-8.3.8.3-3, provide the work orders for each condition. a. Describe why each condition met the designated priority of the work order.	With regard to Figure 8.3.8.3-1, a damaged crossarm with visible main arm broken strands requires a priority A or priority X tag, depending on exposure. Please see "WMP-Discovery2026-2028_DR_SPD_001-Q003Atch01CONF.pdf." With regard to Figure 8.3.8.3-2, a secondary floater making contact with a cross arm requires a priority X notification. Please see "WMP-Discovery2026-2028_DR_SPD_001-Q003Atch02CONF.pdf." With regard to Figure 8.3.8.3-3, a heavily decayed pole top with hardware sinking into the pole requires a minimum priority E notification. However, this was created as a	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	3	No	8	Grid Design, Operations, and Maintenance	8.3.8
77	SPD	001	SPD_001	4	No	SPD_001_Q4	Provide all research or engineering reports which contributed to distribution inspection job aid changes in 2024 and 2025.	Please see the attachments listed below for the research and engineering reports that contributed to distribution inspection job aid changes in 2024 and 2025. • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch01CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch02CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch03CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch04CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch05CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch06CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch07CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q004Atch08CONF.pdf	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	9	No	8	Grid Design, Operations, and Maintenance	8.3.8
78	SPD	001	SPD_001	5	No	SPD_001_Q5	Provide the full year inspection 2024 inspection find rates in a format matching "WMP-Discovery2023-2025_DR_SPD_014-Q005Rev02Supp01".	Table Q-005 Inspection Find Rates 20241 1. Find rate is calculated as number of new notifications created divided by number of inspections. Counts for Priority E notifications include Priority H notifications as well. 2. Includes Priority A and X conditions from Aerial Inspection which were processed manually and not flagged as created by aerial in our system of record. 3. PTT find rates reflect the routine PTT program described in the WMP.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.8
79	SPD	001	SPD_001	6	No	SPD_001_Q6	Update the ignition data from 2014-2024 in the same format as the response to WMP-Discovery2023_DR_SPD_004-Q001, which must include values to be filled in for "FPI," "HFTD" information, and "Acreage", along with some additional columns described below. Additionally, verify and update the ignition dataset with any new information (for instance if PG&E has determined an ignition occurred which it was not aware of at the time of the original template). The columns required in this data set should be as follows:. a. "FPI" – State the Fire Potential Index (FPI) for each ignition using FPI 5.0 on a scale of R1 to R5. The FPI should be specified at the most granular level (circuit segment). b. "FPI Natural Units" – State the FPI for each ignition using FPI 5.0's numerical output. c. "HFTD": Classify each ignition based on its location as "Zone 1," "Tier 2," or "Tier 3," "HFRA" or "Non-HFTD".	Please see "WMP-Discovery2026-2028_DR_SPD_001-Q006Atch01CONF.xlsx" for the requested information for subparts (a) through (g). Additionally, please see the explanatory notes below. • With regard to subparts (a) and (b), please note that circuit identifiers can change over time which can lead to an incomplete or incorrect match of historical ignition circuit identifiers with current asset circuit identifiers. Further, circuit geometries can also change over time, for example when circuits are moved, re-configured, or removed as has been the case in some catastrophic fires. FPI 5.0 circuit outlines cannot be generated if the circuit geometries no longer exist in EDGIS.	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01

79	SPD	001	SPD_001	6(s)	Yes	SPD_001_Q6(s)	Update the ignition data from 2014-2024 in the same format as the response to WMP-Discovery2023_DR_SPD_004-Q001, which must include values to be filled in for "FPI," "HFTD" information, and "Acreage", along with some additional columns described below. Additionally, verify and update the ignition dataset with any new information (for instance if PG&E has determined an ignition occurred which it was not aware of at the time of the original template). The columns required in this data set should be as follows:. a. "FPI" – State the Fire Potential Index (FPI) for each ignition using FPI 5.0 on a scale of R1 to R5. The FPI should be specified at the most granular level (circuit segment). b. "FPI Natural Units" - State the FPI for each ignition using FPI 5.0's numerical output. c. "HFTD": Classify each ignition based on its location as "Zone 1," "Tier 2," or "Tier 3," "HFRA" or "Non-HFTD" d. "Acreage" – Provide the acres burned of each ignition where known. e. "Failure_driver" – Update each ignition from 2014 through 2024 with the same method for categorization as column G in worksheet "ign_enriched_edited_v12-22-2023" of the 2024 Risk Assessment and Mitigation Phase (RAMP) workpaper "EO-WLDFR-6_PG&E Ignitions 2015-2022.xlsx". f. "Failure_sub_driver" – Update each ignition from 2014 through 2024 with the same method for categorization as column H in worksheet "ign_enriched_edited_v12-22-2023" of the 2024 RAMP workpaper "EO-WLDFR-6_PG&E Ignitions 2015-2022.xlsx" g. "wsd_driver" – Update each ignition from 2014 through 2024 with the same method for categorization as column I in worksheet "ign_enriched_edited_v12-22-2023" of the 2024 RAMP workpaper "EO-WLDFR-6_PG&E Ignitions 2015-2022.xlsx" h. "event model wildfire risk classification" – Update each ignition from 2014 through 2024 indicating which submodel would use each ignition as defined in columns S-AO from "WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx." If an ignition is used in multiple submodels, provide them as a list in one column separated by a comma. i. "wdrm v4 subdriver" - Update each ignition from 2014 through 2024 with the same method for categorization as the WDRM v4 subdriver definition in Column A of worksheet "Effectiveness Analysis Detail" in the file "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xslx"	h. WDRM v4 model classification for historical ignitions is included as column AH (WDRM v4 event model wildfire risk classification) of the attachment. Please note that the WDRM v4 submodels were modeled using the following filters. Ignitions outside of the filter criteria were not included in the modeling dataset and are not linked to an ignition in the attached spreadsheet. • Years: 2015 – 2022. • Months: June – November • Valid location: Latitude and longitude within service territory bounds. • Equipment: Distribution-only. i. The assignment of outage failure combinations to WDRM subdrivers in EO WLDFR-6_PG&E Ignitions 2015-2022.xlsx is based on four key components of each outage: basic cause, supplemental cause, equipment, and equipment condition. These same fields are not available, nor applicable in every case, in PG&E's ignitions dataset, therefore, the requested analysis cannot be completed.	Eddie Schmitt	4/15/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
80	SPD	001	SPD_001	7	No	SPD_001_Q7	Q11 asks for data related to various classifications PG&E used in risk modeling of ignitions in parts e through i. Explain where each classification is used, and how the classifications relate. a. Describe why the WDRM v4 subdrivers in in Column A of worksheet "Effectiveness Analysis Detail" in the file "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xslx" do not seem to match one to one with the WDRMv4 submodels in columns S-AO from "WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx."	On April 17, 2025, SPD clarified that this question is seeking Q06 data. a. The mapping between WDRM v4 subdrivers in worksheet Effectiveness Analysis Detail map to the WDRM v4 submodels in columns S-AO as shown in the table below. These items do not map one-to-one because the "Support Structure: Electrical" and "Transformer: Leaking" submodels are not included in the System Hardening composite used by the Undergrounding program (Column AQ in "WMP Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx"). Notes: 1. The WDRM does not model planned outages. 2. The "Support Structure: Electrical" and "Transformer: Leaking" submodels are not included in the System Hardening composite.	Eddie Schmitt	4/15/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
81	SPD	001	SPD_001	8	No	SPD_001_Q8	Provide the outage data set used in WDRM v4. Include a unique outage ID that matches the data in the Spatial Quarterly Data Reports (QDR) data set in excel format. Each row should correspond to an outage, and each column should correspond to a feature related to the outage used in the model. a. Describe how the outage location was used in WDRM v4 to determine risk at an asset location. i. If the GPS-based outage location was not used, explain why? ii. Was the classification of HFTD/non-HFTD (or other similar HFRA/non-HFRA) used as a factor in the model? If so, explain how.	The modeling dataset used for the Distribution Event Probability Models in WDRM v4 with the primary key for the outage is included in Attachment "WMP-Discovery2026-2028_DR_SPD_001-Q008Atch01.xlsx". Please note that not all failure events result in an outage so the outage id is blank for some events. a. i. Assignment of outage/failure to assets or pixels varied by model type. • For asset models: For WDRM v4, outages/failure events were assigned using the unique equipment id. If a unique equipment ID for the asset or pole could not be extracted from historical records, then the latitude and longitude were used to identify the nearest asset if the values were GPS based. If no equipment ID or GPS-based location data were identified, then the event was excluded from the model training dataset. WMP-Discovery 2026-2028_DR_SPD_001-Q008 Page 2 • For pixel models: Reliable locations for failure/outage data were prioritized first (such as GPS-based outage locations). Non-GPS locations were used as a last resort. Locations that were outside of a "grid" pixel (i.e. events more than ~100m from the distribution system) were excluded from the model training dataset. ii. HFTD classification was used as an input to some of the Distribution Event Probability Models (DEPM). The feature importance of model inputs is documented in the DEPM, version 4 model documentation. HFTD was not [illegible] of the DEPM models.	Eddie Schmitt	4/15/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	5	Risk Methodology & Assessment	5.4
82	SPD	001	SPD_001	9	No	SPD_001_Q9	Provide the ignition data set used in WDRM v4 in excel format. Each row should correspond to an ignition, and each column should correspond to a feature related to the ignition used in the model.	ignitions used for the p(ignition | outage) model are included in attachment "WMP Discovery2026-2028_DR_SPD_001-Q009Atch01.xlsx". Please note that the input data for the p(ignition | outage) model are based on failure/outage events and whether the event resulted in an ignition. Thus, the majority of rows in the model training dataset are not associated with an ignition. The ignitions can be identified by filtering the spreadsheet to where the ignition_primary_key column is not Null.	Eddie Schmitt	4/15/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
83	SPD	001	SPD_001	10	No	SPD_001_Q10	The current data set in "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx" appears to be missing columns and spreadsheets necessary to generate important data and analysis. Many of the columns in the "Effective Analysis Detail" seem to indicate the same subdriver/drivers. a. Provide an updated version which clarifies the difference between each row. b. "WMP-Discovery2023-2025_DR_SPD_016-Q007Atch01.xlsx." include more data and spreadsheets than "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx", such as columns for basic_cause, supplemental_cause, equipmentxed, equipcondition and the counts of incidents in each year as well as worksheets like Grid Hardening SME Input, Outages_HFTD and Mapping. Provide these columns and worksheets in an update to "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx". SPD expects that this new outage data set should be a more complete dataset than was used to generate PG&E's Effectiveness Analysis in WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx. The data should match the columns within Outages_HFTD found in WMP-Discovery2023-2025_DR_SPD_016-Q007Atch01.xlsx but also should include the unique outage IDs and GPS location. The unique outage IDs should be the same as the unique outage IDs found in the Spatial QDR data set. i. SPD expects to be able to aggregate this data into "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx"	a. On The Effectiveness Analysis Detail worksheet, columns D, E, F and G have been added to "WMP-Discovery2026-2028_DR_SPD_001-Q010Atch01.xlsx" with Basic Cause, Supplemental Cause, Equipment Involved, and Equipment Condition fields for additional clarity. WMP-Discovery 2026-2028_DR_SPD_001-Q010 Page 2 b. The following updates have been made to the "WMP-Discovery2026-2028_DR_SPD_001-Q010Atch02.xlsx": i. Basic Cause, Supplemental Cause, Equipment Involved, and Equipment Condition fields have been added to the Effectiveness Analysis Detail tab for counts of incidents by year. Additional worksheets have been added: (1) Grid Hardening SME Input, (2) Outages_HFTD and (2) Mapping. QDR is not the original source for the outages used in the mitigation effectiveness analysis; however, columns P ("Latitude"), Q ("Longitude"), and R ("OutageID") have been added to the Outages_HFTD worksheet on attachment "WMP Discovery2026-2028_DR_SPD_001-Q010Atch02.xlsx", to align outages as possible to the unique outage ID's found in the Spatial QDR data set. Note that the Lat./Log. of outages may be based on the operating device and not necessarily at the damage location. For outages that did not align with the QDR data set, locations were sourced from a repository of IUS outages.	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	2	No	6	Wildfire Mitigation Strategy Development	6.1.3-1
84	SPD	001	SPD_001	11	No	SPD_001_Q11	Describe how the data set associated with Question 10 was created. a. Was the dataset associated with Question 10 created from a PG&E dataset of all outages? b. Was the dataset associated with Question 10 created from a subset of a PG&E dataset of all outages? If so, describe that subset.	a. No, the dataset is comprised of snapshots of only outages in the HFTD from PG&E's ILIS database, which were taken at different points in time. The initial iteration of the analysis included a snapshot of HFTD outages between 2015-2022, then snapshots of 2023 and 2024 HFTD outages were added in early 2024 and early 2025, respectively. b. Yes, the dataset was created from a subset of outages recorded in ILIS, specifically eHTD outages between 2015-2024.	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3-1
85	SPD	001	SPD_001	12	No	SPD_001_Q12	Provide the number of overhead circuit mile-days for each FPI rating per year starting in 2014 through 2024. The response should mirror the format of PG&E's response "WMP-Discovery2023_DR_SPD_004-Q003.pdf". However, the circuit mile-day data is to be calculated based on FPI 5.0 at the circuit segment level. a. Provide the FPI circuit mile day breakdown for the HFTD miles. b. Provide the FPI circuit mile day breakdown for HFRA miles.	The FPI 5.0 climatology from 2014 to 2024 was utilized for this analysis. Each grid cell along each distribution and transmission circuit using a 4/17/2025 GIS snapshot was intersected with daily aggregated FPI ratings and then intersected with the HFTD and HFRA to produce the results below. Units are in circuit-mile. a. Year R1 R2 R3 R4 R5 2014 6,204,052 875,330 1,996,733 1,078,359 937,058 2015 6,416,277 776,182 1,986,206 1,065,202 947,665 2016 7,052,437 527,748 1,601,247 1,063,928 876,560 2017 6,568,671 586,534 1,868,555 1,162,468 905,304 2018 6,307,438 559,128 1,992,872 1,222,168 1,009,924 2019 6,327,327 659,921 2,363,061 1,154,387 586,836 2020 6,089,637 690,180 1,932,752 1,312,260 1,097,092 2021 6,310,138 595,646 1,817,545 1,145,826 1,222,376 2022 6,590,710 683,760 2,030,006 987,614 799,438 WMP-Discovery 2026-2028_DR_SPD_001-Q012 Page 2 Year R1 R2 R3 R4 R5 2023 7,238,427 789,799 1,816,725 734,199 512,382 2024 6,282,480 615,916 2,219,990 1,293,915 709,618 b. Year R1 R2 R3 R4 R5 2014 6,302,847 900,503 2,094,010 1,109,103 942,836 2015 6,525,589 798,562 2,082,916 1,091,025 851,230 2016 7,182,680 543,334 1,683,989 1,090,317 880,075 2017 6,687,063 605,022 1,958,763 1,189,024 909,428 2018 6,416,804 576,971 2,091,430 1,247,382 1,014,713 2019 6,445,704 679,117 2,463,307 1,173,062 588,111 2020 6,196,071 709,146 2,029,859 1,341,945 1,103,373 2021 6,422,137 608,323 1,910,688 1,178,194 1,228,960 2022 6,709,675 701,874 2,120,979 1,014,161 802,611 2023 7,367,041 811,508 1,905,571 750,791 514,389 2024 6,397,133 634,295 2,304,982 1,310,178 717,445	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.5.2
86	SPD	001	SPD_001	13	No	SPD_001_Q13	Identify any ignitions in 2024 associated with assets where PG&E had an existing corrective notification at the time of the ignition. Provide a spreadsheet listing each such ignition (as rows) in the same format as that provided to the CPUC in the annual CPUC Fire Ignition Data (see this website for the publicly available version: Wildfire and Wildfire Safety). a. Include one additional column that includes the corrective notification (i.e., work order or tag).	a. PG&E observed 166 CPUC-reportable ignition events in 2024 associated with equipment failure. We were able to identify 20 CPUC-reportable ignitions where the suspected cause was equipment failure, and the support structure associated with the location of the fire had an open EC or LC notification at the time of the ignition event. Please see "WMP-Discovery2026-2028_DR_SPD_001-Q013Atch01.xlsx" for the information associated with those 20 fires.	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
87	SPD	001	SPD_001	14	No	SPD_001_Q14	Identify any ignitions in 2024 associated with assets where PG&E had an existing corrective notification at the time of the ignition which PG&E attributes as causally connected to the ignition. Provide a spreadsheet listing each such ignition (as rows) in the same format as that provided to the CPUC in the annual CPUC Fire Ignition Data (see this website for the publicly available version: Wildfire and Wildfire Safety). a. Include one additional column that includes the existing corrective notification number (i.e., work order or tag number). b. Provide the existing corrective notification for each identified ignition (i.e., the work order).	a. PG&E observed 166 CPUC-reportable ignition events in 2024 associated with equipment failure. We were able to identify 7 CPUC-reportable ignitions that have completed our ignition analysis process where the suspected cause is equipment failure and the failure mode associated with the fire was specifically captured in the scope of a EC or LC corrective notification created prior to, and still open at, the ignition event. Please see "WMP-Discovery2026-2028_DR_SPD_001-Q014Atch01.xlsx" for information associated with those 7 fires. Please note that PG&E has determined that the conditions identified by the provided corrective notifications are likely related to the failure mode of an ignition event but cannot definitively determine causality. b. Please see the attachments listed below for the requested information: • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch02CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch03CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch04CONF.pdf WMP-Discovery 2026-2028_DR_SPD_001-Q014 Page 2 • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch05CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch06CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch07CONF.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q014Atch08CONF.pdf	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	8	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01

88	SPD	001	SPD_001	15	No	SPD_001_Q15	Identify any outages in 2024 associated with assets where PG&E had an existing corrective notification at the time of the outage which PG&E attributes as causally connected to the outage. Provide a list with unique IDs of each outage which can be cross-referenced with the data provided as part of the 2024 QDR spatial data and the corrective notification number.	Distribution: Please see "WMP-Discovery2026-2028_DR_SPD_001-Q015Atch01.xlsx" for distribution outages associated with overhead assets where PG&E had an existing corrective notification at the time of the outage. Due to the volume of data, the method used to derive this data defines "causally connected" as having a Level 1 (emergency) tag, linked to an unplanned outage, attributed to an equipment failure associated with the primary indicator on the same electric facility as the open maintenance tag. As this is a data pull and each event has not been desktop reviewed, there may be cases where the associated notification was not causal—for example, an instance in which a pole with two crossarms and an open tag on crossarm 1 experiences an outage caused by a failure of crossarm 2. Similarly, there may be cases where causally connected notifications are excluded—for example, an instance in which a pole fails due to a broken/damaged guy which had an existing notification. Details on the filtering procedure are included in "WMP-Discovery2026-2028_DR_SPD_001-Q015Atch01.xlsx." Transmission: Please see "WMP-Discovery2026-2028_DR_SPD_001-Q015Atch02.xlsx" for transmission outages associated with assets where PG&E had an existing corrective notification at the time of the outage. Most outages are linked to an asset through manual review, which allows lookup of notifications on that asset; however, the outage dataset still contains some entries where the location is WMP-Discovery 2026-2028_DR_SPD_001-Q015 Page 2 approximate, and these locations were not considered in the analysis. Determining which open notifications have a causal connection was performed by a combination of methods: this data already is collected for a subset of outages through previous manual review, some outages are associated with Level 1 findings that were reviewed as part of Question 015, and the remaining outages were analyzed by attempting to match the Facility/Damage/Action (FDA) of all open notifications on the asset to the outage cause and asset type information. The last of these approaches is not expected to be completely accurate due to the level of granularity and imperfect alignment between notification FDAs and outage cause and asset type information. An outage may have more than one open notification with a causal connection; a separate list pivoted by the	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	2	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
89	SPD	001	SPD_001	16	No	SPD_001_Q16	Identify any level 1 corrective actions in 2024 associated with assets where PG&E had an existing corrective notification at the time of the level 1 corrective action which PG&E attributes as causally connected to the level 1 corrective action (one example would be if a level one corrective action was created on a pole with a priority E tag failure). For each instance, provide a list of the electric corrective notification numbers for both the existing corrective notification and the new level one corrective action, the priority level of the existing notification, as well as the date of the occurrence, and the unique ID of each outage (if available) which can be cross-referenced with the data provided as part of the 2024 QDR spatial data.	Distribution: Please see "WMP-Discovery2026-2028_DR_SPD_001-Q016Atch01.xlsx" for Level 1 corrective notifications associated with overhead distribution assets where PG&E had an existing corrective notification at the time of failure. Due to the volume of data, the method used to derive this data defines "causally connected" as having a Level 1 (emergency) tag, attributed to an equipment failure associated with the primary indicator on the same electric facility as the open maintenance tag. As this is a data pull and each event has not been desktop reviewed, there may be cases where the associated notification was not causal—for example, an instance in which a pole with two crossarms and an open tag on crossarm 1 experiences a failure of crossarm 2. Similarly, there may be cases where causally connected notifications are excluded—for example, an instance in which a pole fails due to a broken/damaged guy which had an existing notification. Details on the filtering procedure are included in "WMP-Discovery2026-2028_DR_SPD_001-Q016Atch01.xlsx"	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	2	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
90	SPD	001	SPD_001	17	No	SPD_001_Q17	Provide all Preliminary Ignition Investigation Reports (PIIRs) associated with Underground Ignitions.	Please see the records below for PG&E's PIIRs associated with underground ignitions. • WMP-Discovery2026-2028_DR_SPD_001-Q017Atch01_Redacted.pdf • WMP-Discovery2026-2028_DR_SPD_001-Q017Atch02_Redacted.pdf Please note, we have provided redacted copies of the requested PIIRs in an effort to provide them expeditiously.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	2	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
91	SPD	001	SPD_001	18	No	SPD_001_Q18	Provide all PIIRs for ignitions in the HFTD in 2024.	Please see PG&E's PIIRs for ignitions in the HFTD in 2024 at "WMP-Discovery2026-2028_DR_SPD_001-Q018Atch01.zip."	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-01
92	SPD	001	SPD_001	19	No	SPD_001_Q19	Provide all Priority A work orders PG&E created between 2020 and 2024 in the same format as "WMP-Discovery2023-2025_DR_SPD_019-Q002Atch01CONF." with the exception that column T and U need not be filled out. Include Priority As for both distribution and transmission. a. For the purposes of this response to the data request, use column J ("Completion Data (if applicable)" for the date the work order was closed and column R ("Last Maintenance Date") as the date the field work was finished. b. Correct Column P so the values are either Y (for yes, a wire down occurred) or N (for no, a wire down did not occur), unless there is a unique identifier for the wires down that does not match the Outage ID. Add a new column with the Outage Event ID that matches the unique outage ID identifier for the QDR data set. For instance, in the current data set, the column Q outage ID 1910360 appears to refer to an event in 2023, but in the QDR spatial data set, outage ID 1910360 appears to refer to an event in 2024. Continue to use the same methodology for creating outage event IDs for column Q. i. Explain why the QDR spatial data appears to have a different outage event IDs than those specified in column Q.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_001-Q019Atch01.xlsx" for Priority A distribution work orders, and attachment "WMP-Discovery2026-2028_DR_SPD_001-Q019Atch02.xlsx" for Priority A transmission work orders. With regard to "WMP-Discovery2026-2028_DR_SPD_001-Q019Atch01.xlsx," please note that PG&E has refreshed the data provided using its Quarterly Data Reports (QDR). PG&E amended its Priority A tag reporting in its past QDRs to more accurately reflect Priority A tag metrics, and this submission reflects that amendment. WMP-Discovery 2026-2028_DR_SPD_001-Q019 Page 2 a. Distribution: Column J has been changed to reflect the SAP closure date. Column T "Last maintenance date (if applicable)" and Column I "Completed On Date" contain the date the notification was completed in the field. Transmission: Column J has been changed to reflect the SAP closure date. Note that if a notification is re-opened for administrative reasons, when it is re-closed the SAP closure date will change. Column R now contains the date the notification was completed in the field. The remaining logic is identical to that used to generate the previously provided data in "WMP-Discovery2023-2025_DR_SPD_019-Q002Atch01CONF.xlsx," in which outages are matched to A-priority notifications on the same day and circuit. b. Distribution: Column R "OutageID QDR" has been added. Please note that there are multiple unique outage identifiers in PG&E's systems of record, Integrated Logging and Information System (ILIS). The OutageID in the QDR represents the outage_log_id, which is the primary identifier of an outage in ILIS where this data was pulled from. The outage event IDs specified in column Q are the Outage Information System (OIS) number, which is the primary identifier of the same outage in the Distribution Management System (DMS). Please note that PG&E has populated "Outage event ID" using the OIS number associated with each respective Priority A tag. There may be instances in which an OIS identifier is not associated with an outage (e.g. a troubleshooter dispatched to an emergency that does not result in an outage), and therefore where the "Outage event ID" column is populated but the "OutageID QDR" column is not. Please note PG&E has endeavored to match the provided Priority A tags to outages associated with the conditions to the best of its ability. However, certain circumstances, such as data	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	2	No	8	Grid Design, Operations, and Maintenance	8.6
93	SPD	001	SPD_001	20	No	SPD_001_Q20	Provide an update version of "WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx" if the risk model has been updated since this spreadsheet was generated. a. Additionally, update the narrative and table provided in the response "WMP-Discovery2023-2025_DR_CalAdvocates_041-Q001.pdf"	The risk model, WDRMv4, has not been updated since the generation of this spreadsheet.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
94	SPD	001	SPD_001	21	No	SPD_001_Q21	SPD is attempting to compute the cost per unit for many of the WMP initiatives tracked in the WMP Implementation Dashboard (WMP Implementation Dashboard). Review and confirm the cost per unit is correct for the initiatives. See the attached workbook titled PGE WMP Implementation Dashboard.xlsx. a. Follow all of the instructions within the cells and notes included in PGE WMP Implementation Dashboard.xlsx. b. SPD is attempting to do a similar exercise for the 2026-2028 WMP but the QDR tabular data was not submitted. SPD saw some of the data in the WMP, but was unable to determine if this data was inclusive of all initiatives. Where should SPD look for equivalent data?	a. Please see attachment "WMP-Discovery2026-2028_DR_SPD_001-Q021Atch01.xlsx" for the requested information. The values provided in the Excel file section titled "PGE Response" represent PG&E's response to this data request using the formulas and data sources provided by SPD, except to the extent amended as described below, and do not reflect PG&E's official or final calculation of the unit costs associated with the listed WMP initiatives. Please note, the values in the "PG&E RESPONSE" worksheet are based on SPD's instructions, data, and formulas but with the following amendments, adjustments, and corrections: • PG&E has updated values in the "Total Cost" column for the year 2024 to reflect final, actual (as opposed to forecasted) costs as reported in our 2024 Annual Report on Compliance (ARC). • PG&E has updated "Units Planned/Completed" for the year 2024 to reflect final units as reported in our 2023 and 2024 ARCs. • Initiatives GH-01 (System Hardening) and GH-04 (Undergrounding) do not calculate unit costs using the method proposed by SPD. The following are clarifications about how unit costs are calculated for these projects. These corrections have been incorporated into worksheet "GH-01 & GH-04 Unit Cost" in attachment WMP-Discovery2026-2028_DR_SPD_001-Q021Atch01.xlsx. The 2023 and 2024 unit costs are from historically completed projects. The 2025 unit costs are predominately based on forecasts with a current workplan that contains more miles than targets. (1) WMP Reporting Clarifications: As approved in the 2023 WMP, the GH 01 initiative includes the System Hardening Undergrounding miles, as well as the overhead hardening and line removal work. In Table 11 of the WMP QDR, the undergrounding costs, however, are not reported for GH-01 in order to not double-count those costs reported in GH-04. The System Hardening Undergrounding miles, however, are reported in Table 1 of the QDR and ARC. Therefore, the approach to divide cost spent per year by the miles is not appropriate.1 Additionally, for WMP reporting, PG&E includes hardening miles from non-System Hardening programs like	Eddie Schmitt	4/15/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1	No	3	Overview of WMP	3.6
94	SPD	001	SPD_001	21(a)	Yes	SPD_001_Q21(a)	SPD is attempting to compute the cost per unit for many of the WMP initiatives tracked in the WMP Implementation Dashboard (WMP Implementation Dashboard). Review and confirm the cost per unit is correct for the initiatives. See the attached workbook titled PGE WMP Implementation Dashboard.xlsx. a. Follow all of the instructions within the cells and notes included in PGE WMP Implementation Dashboard.xlsx. b. SPD is attempting to do a similar exercise for the 2026-2028 WMP but the QDR tabular data was not submitted. SPD saw some of the data in the WMP, but was unable to determine if this data was inclusive of all initiatives. Where should SPD look for equivalent data?	a. Please see attachment "WMP-Discovery2026-2028_DR_SPD_001-Q021Rev01Atch01.xlsx" for the requested information. The values provided in the Excel file section titled "PGE Response" represent PG&E's response to this data request using the formulas and data sources provided by SPD, except to the extent amended as described below, and do not reflect PG&E's official or final calculation of the unit costs associated with the listed WMP initiatives. Please note, the values in the "PG&E RESPONSE" worksheet are based on SPD's instructions, data, and formulas but with the following amendments, adjustments, and corrections: WMP-Discovery 2026-2028_DR_SPD_001-Q021Rev01 Page 2 • PG&E has updated values in the "Total Cost" column for the year 2024 to reflect final, actual (as opposed to forecasted) costs as reported in our 2024 Annual Report on Compliance (ARC). • PG&E has updated "Units Planned/Completed" for the year 2024 to reflect final units as reported in our 2023 and 2024 ARCs. • Initiatives GH-01 (System Hardening) and GH-04 (Undergrounding) do not calculate unit costs using the method proposed by SPD. The following are clarifications about how unit costs are calculated for these projects. These corrections have been incorporated into worksheet "GH-01 & GH-04 Unit Cost" in attachment "WMP-Discovery2026-2028_DR_SPD_001-Q021Rev01Atch01.xlsx". The 2023 and 2024 unit costs are from historically completed projects. The 2025 unit costs are predominately based on forecasts with a current workplan that contains more miles than targets. (1) WMP Reporting Clarifications: As approved in the 2023 WMP, the GH-01 initiative includes the System Hardening Undergrounding miles, as well as the overhead hardening and line removal work. In Table 11 of the WMP QDR, the undergrounding costs, however, are not reported for GH-01 in order to not double-count those costs reported in GH-04. The System Hardening Undergrounding miles, however, are reported in Table 1 of the QDR and ARC. Therefore, the approach to divide cost spent per year by the miles is not appropriate.1	Eddie Schmitt	4/15/2025	5/22/2025	5/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	1		3	Overview of WMP	3.6
95	SPD	001	SPD_001	22	No	SPD_001_Q22	The 2026-2028 WMP states on page 182 that the System Hardening Project Scoping Decision Tree and Process is shown in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 will begin to inform the selection of projects in 2027. What methodology is being used for 2026?	The system hardening decision tree presented in PG&E's 2023-2025 Base WMP (Figures SRN-PG&E-23-05-06A, SRN-PG&E-23-05-06B, SRN-PG&E-23-05-06C) is the decision tree used as the starting point for selecting system hardening mitigations for 2026.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1

96	SPD	001	SPD_001	23	No	SPD_001_Q23	Provide a narrative explanation regarding how the decision tree on pg. 125 of PG&E's 2026-2028 WMP (Figure PG&E-6.1.3.1-4) and the decision tree on pg. 183-185 (Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3) are related. a. Provide examples of how the four decision trees were used to determine some form of system hardening as the selected mitigation at a given circuit segment. The examples should exhaust all of the system hardening results made possible by these four decision trees.	The Mitigation Selection, Planning and Execution process referenced in Figure PG&E 6.1.3.1-4 describes the general process by which PG&E's Investment Planning Organization considers budgets for mitigation programs. Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 is the decision tree used by the System Hardening Program for choosing system hardening mitigation alternatives for projects starting in 2027. We use the budgets developed by Investment Planning shown in Figure PG&E-6.1.3.1-4 to fund the system hardening mitigations. a. Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 is one single decision tree that we use to choose system hardening mitigation alternatives for projects starting in 2027. It is shown in the WMP as three individual figures so that it is more legible. To be clear, there are not four decision trees used to determine some form of system hardening as the selected mitigation at a given circuit segment—there is only one decision tree (Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3). The system hardening results made possible by the decision tree are: (1) do not implement system hardening; (2) implement a 100% overhead hardening solution; (3) implement a 100% undergrounding solution; (4) implement a hybrid hardening WMP-Discovery 2026-2028_DR_SPD_001-Q023 Page 2 solution where portions of a line are undergrounded and other portions are overhead hardened; and (5) implement a line removal with remote grid solution. Figure PG&E-6.1.3.1-4 is a high-level illustration showing a life-cycle view of how we consider risk drivers to develop mitigation initiatives, develop an investment plan to fund the mitigations and then execute them. This decision tree is not used to select between hardening mitigation alternatives.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3
97	SPD	001	SPD_001	24	No	SPD_001_Q24	In response to WMP-Discovery2026-2028_DR_TURN_002-Q006, PG&E references the Wildfire Benefit Cost Analysis (WBCA) Tool. Provide a description of the WBCA Tool as referenced in PG&E's 5th Revision to its 2023-2025 WMP on pg. 425 and on page 187 of the 2026-2028 WMP that includes the following: a. An explanation of how Cost-Benefit Ratios are utilized within the Tool. b. An explanation of how the Tool complies with the requirements of D.22-12-027. c. An explanation of how the Tool complies with the requirements of D.24-05-064. d. A definition for each of the following terms presented in TABLE RN-PG&E-23-05-3 of PG&E's 5th Revision to its 2023-2025 WMP on pg. 427: i. PVRR Cap. Invest. ii. Lifetime O&M Costs iii. Wildfire iv. Public Safety v. Normal Reliability vi. PSPS vii. EPSS viii. Total Risk ix. Risk Avoidance over Lifetime Benefit x. Residual Risk over Lifetime xi. Lifetime – Benefit-Cost e. Provide a step by step explanation of how each of the terms in Question 24d. are calculated.	a. PG&E uses its Wildfire Benefit Cost Analysis (WBCA) tool to estimate project costs, wildfire risk reduction, and reliability improvements that are applicable to system hardening mitigations (undergrounding, overhead hardening + Enhanced Powerline Safety Setting + Downed Conductor Detection, and hybrid mitigations). The WBCA considers: the approximate capital costs to construct a system hardening project; the expected capital and expense operation and maintenance (O&M) costs for the life of the asset; financing costs; ignition risk reduction and outage program reliability; the benefits periodicrassi fic; rebuild costs for overhead assets; and the effectiveness of different mitigations. The WBCA output for each circuit segment is an estimated cost to build and maintain system hardening alternatives, a Cost Benefit Ratio (CBR), and net benefit analysis. PG&E uses the CBR and net benefit results to inform mitigation selection at the circuit-segment level. b. D.22-12-027 replaced the Multi-Attribute Value Framework (MAVF) with a Cost Benefit Approach that includes standardized dollar valuations of Safety, Electric Reliability and Gas Reliability Consequences from risk events. Investor-Owned Utilities (IOUs) are required to use the Cost-Benefit Approach to assess and rank risks and mitigations. PG&E's WBCA complies with the requirements in D.22-12-027 by using standardized dollar valuations for safety and electric reliability consequence to calculate a CBR. CBRs are calculated within the WBCA for various mitigation alternatives on each circuit segment. PG&E evaluates the CBR results as part of our mitigation selection process. We will use the outputs from the WBCA as one factor for informing our mitigation alternative selection. D.22-12-027 allows a utility to consider other factors when selecting a mitigation alternative if we explain how other factors influenced our mitigation selection.1 c. D.24-05-064 modified the Risk-Based Decision-Making Framework (RDF) included in Appendix A to D.22-12-027 and includes four salient requirements: (1) require the IOUs to present cost-benefit ratios (CBR) for each general rate case post-test year rather than an aggregate CBR for the entire post-test year period;2 (2) should require the IOUs to determine reporting tranches in the RDF by using combinations of quantiles of LoRE and CoRE where portions of a risk with the highest 20 percent of LoRE would be grouped within a tranche and the highest 20 percent of CoRE would be grouped in another tranche or, where data is available, require IOUs to	Eddie Schmitt	4/15/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
98	SPD	001	SPD_001	25	No	SPD_001_Q25	State the filings where PG&E has used the Wildfire Benefit Cost Analysis Tool (i.e. RAMP, GRC, WMP, other proceedings or filings) a. Does PG&E intend to apply the Wildfire Benefit Cost Analysis Tool in its 2027 Test Year GRC Application? i. If no, explain why not. ii. If yes, explain how this tool will be applied in the 2027 Test Year GRC Application. a) Which mitigations presented in the 2024 RAMP Application will be impacted by PG&E's use of the Wildfire Benefit Cost Analysis Tool when PG&E files its 2027 Test Year GRC Application?	a. Yes, PG&E intends to use the WBCA, in addition to other analysis, to select mitigations for our 2027 GRC system hardening program. i. N/A ii. We will use the WBCA to: (1) aggregate risk analysis for circuit segments and (2) generate CBRs and Net Benefits for mitigation alternatives (undergrounding, overhead hardening + Enhanced Powerline Safety Setting + Downed Conductor Detection, and hybrid mitigations) for each circuit segment. PG&E will further evaluate the circuit segment risk ranking, CBRs and Net Benefits from the WBCA, along with other considerations such as tree-strike risk and ingressiegress, to ultimately select the mitigation for each circuit segment. WMP-Discovery 2026-2028_DR_SPD_001-Q025 Page 2 a) In the 2024 RAMP PG&E planned three system hardening mitigations for 2027-2030: 1. System hardening undergrounding (WLDFR-M022), 2. System hardening overhead hardening (WLDFR-M002) and 3. Line removal with remote grid (WLDFR-M011). The three system hardening mitigations planned in the 2024 RAMP will be completed in the WBCA for PG&E's test year 2027 GRC.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
99	SPD	001	SPD_001	26	No	SPD_001_Q26	The 2026-2028 WMP references the WBCA Tool, but SPD has reviewed other filings like PG&E's 2024 RAMP Application (R.24-05-008) where this tool is not referenced. a. The WBCA was not referenced in PG&E's 2024 RAMP Application. During the preparation of PG&E's 2024 RAMP, were any aspects of the WBCA used to determine mitigation effectiveness values and/or mitigation selection and, if so, explain in detail how. If not, explain why not. i. When did PG&E begin developing the WBCA Tool? b. List the differences between the way mitigation effectiveness values were calculated when preparing PG&E's 2024 RAMP Application and when preparing the 2026-2028 WMP submission. i. Provide an explanation for each difference listed. c. List the differences between the way mitigations were selected for a given asset when preparing PG&E's 2024 RAMP Application and when preparing the 2026-2028 WMP submission. i. Provide an explanation for each difference listed. d. In WMP-Discovery2026-2028_DR_TURN_002-Q006, PG&E stated the WBCA tool is still in development in its response to TURN's questions, but pages 187 through 192 of the 2026-2028 WMP appear to present the tool as complete. What portions of the WBCA Tool are still under development? e. SPD understands that PG&E has two risk models for its wildfire risk, (1) the EORM and (2) the WDRM/WTRM. How does the WBCA Tool incorporate information from both of these risk models?	a. The WBCA was not used for any analysis in the 2024 RAMP Application as the WBCA tool was not developed at the time of the 2024 RAMP Application. i. PG&E conceptualized the WBCA in 2023 and began developing the WBCA tool in earnest in 2024 based upon OEIS' Revised EUP Guidelines and described it in the 2023 WMP Revision Notice 23-05. Starting this year, the inputs of PG&E's WBCA are being used to inform the cost-benefit analysis for scoping using the System Hardening Project Scoping Decision Tree and Process (shown in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3) for work that will be completed in 2027, and included in our Test Year 2027 GRC and our EUP. b. The mitigation effectiveness values in the 2026-2028 Base WMP submission are calculated at the circuit segment-level (see Section 8.2.1, p. 187). When analyzing a potential project, the WBCA uses specific effectiveness values for those circuit segments based on the unique risk sub-drivers (outage combinations) for that location, as identified by the WDRM. The 2024 RAMP Application mitigation effectiveness values were calculated using the system averages for undergrounding work, and sub-driver mitigation effectiveness values for covered conductor. The mitigation effectiveness values in the 2024 RAMP Application are aggregated at the tranche level rather than the circuit segment-level. This was based on analysis available at the time of filing. i. The 2026-2028 Base WMP submission uses the most recent mitigation effectiveness analysis that uses a preliminary version of the WBCA tool that was not available at the time of the 2024 RAMP application. In addition, the 2024 RAMP analysis focuses on tranche-level analysis rather than circuit segment analysis. c. For the 2024 RAMP Filing, the mitigation selected was based on a filtering of the circuit segments from 1-N based on wildfire risk rank. There was no cost-benefit analysis conducted for the RAMP filing. It was assumed that projects selected for undergrounding had a hybrid split between overhead hardening and undergrounding (60% of a circuit segment was assumed to be undergrounding and 10% of the circuit segment assumed to be overhead hardening). The focus for mitigation selection at the time of the 2024 RAMP filing was risk reduction	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	5	Risk Methodology & Assessment	5.4
100	SPD	001	SPD_001	27	No	SPD_001_Q27	Provide SPD with any follow up responses PG&E provides in response to WMP-Discovery2026-2028_DR_TURN_002-Q006s-f.	Please see "WMP-Discovery2026-2028_DR_TURN_002-Q006Supp01.pdf," which is also available on our website at Community Wildfire Safety Program.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	N/A	N/A	N/A
101	SPD	001	SPD_001	28	No	SPD_001_Q28	Building on PG&E's response in WMP-Discovery2026-2028_DR_TURN_002-Q009Atch01.xlsx, fill out the Table provided below. The rows labeled "HFTD Tier 2 with Spans Outside HFTD" and "HFTD Tier 3 with Spans Outside HFTD" refers to miles that meet the requirements found on pg. 16 of Energy Safety's 10-Year Electrical Undergrounding Plan Guidelines.	Building on PG&E's response in WMP-Discovery2026-2028_DR_TURN_002-Q009Atch01.xlsx, fill out the Table provided below. The rows labeled "HFTD Tier 2 with Spans Outside HFTD" and "HFTD Tier 3 with Spans Outside HFTD" refers to miles that meet the requirements found on pg.16 of Energy Safety's 10-Year Electrical Undergrounding Plan Guidelines. Total Miles OH Hardening Miles Year X OH replaced by UG Miles Year X Total HFTD HFTD Tier 2 HFTD Tier 2 with Spans Outside HFTD HFTD Tier 3 HFTD Tier 3 with Spans Outside HFTD Additional HFRA Answer 028 PG&E does not have the requested information and does not maintain the data required to compile such information. PG&E would need to expend significant time, effort, and cost to perform the evaluations necessary to create the information. Please let us know if you would like to have a call to discuss this further.	Eddie Schmitt	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_001.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.2
102	OEIS	003	OEIS_003	1	No	OEIS_003_Q1	Regarding Tree Removal Inventory (TRI) PG&E does not list TRI as a vegetation management program in its 2026-2028 Base WMP. On page 363, PG&E's WMP states "PG&E is in the process of evaluating which component(s) of the ... [Tree Removal Inventory (TRI)] scope will be incorporated into the Distribution Routine Patrol Program." a. How many trees are currently listed for work under TRI? b. How many trees does PG&E expect to remain in the TRI list on January 1, 2026? c. How will PG&E mitigate trees listed for work under TRI during the 2026-2028 cycle? d. When does PG&E expect to mitigate all the trees listed for work under TRI?	a. As of April 16, 2025, there are currently 45,804 trees listed for tree work under TRI. Of those trees, 32,100 are constrained. b. We estimate there will be approximately 291,792 trees still to be reviewed in the TRI inventory as of January 1, 2026. This includes 223,963 trees that have not been released for review in the TRI work plans yet, plus an estimated 67,829 trees that may be remaining from the current year's work plan, which may include trees where work is scheduled, trees that are listed for work but are constrained, and trees that have not yet been reviewed. c. We are planning to mitigate TRI trees through the Distribution Routine program. See the 2023-2025 WMP page 622 for more information regarding methods of mitigation. d. PG&E expects to mitigate all the trees listed in the TRI inventory by 2030.	Nathan Poon	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	0	No	Appendix D: Areas of Continued Improvement	Areas of Continued Improvement	ACI PG&E-25U-08
103	OEIS	003	OEIS_003	2	No	OEIS_003_Q2	Regarding Constrained Vegetation Management Work Orders In response to data request OEIS-P-WMP_2025-PGE-001, Questions 6, PG&E lists 7,084 Priority 2 constrained work orders. a. In the table below, categorize all 7,084 constrained work orders by age (days since inspection) and HFTD tier.	Please see table below for the 7,084 constrained work orders by age (days since inspection) and HFTD tier. a. Please note, the data set utilized to generate the table below was pulled on 12/31/2024 and aligns with the data that was used to populate the response in the prior OEIS-001 Question 6 response. 1 1 As of 4/18/2025 5,226 of the 7,084 constrained work orders pulled 12/31/2024 remain constrained. WMP-Discovery 2026-2028_DR_OEIS_003-Q002 Page 2 HFTD Area 0-30 Days 31-90 Days 91-180 Days 181-270 Days 270-365 Days 366+ Days Non-HFTD 6 938 723 260 188 101 HFTD Tier 2 7 963 904 283 139 176 HFTD Tier 3 8,814 1074 747 764 97	Nathan Poon	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	0	No	9	Vegetation Management & Inspections	9.12

104	OEIS	003	OEIS_003	3	No	OEIS_003_Q3	Regarding System Hardening Decision-Making Regarding Figure PG&E-8.2 1-2: PG&E's System Hardening Project Scoping Decision Tree and Process (PG&E's 2026-2028 Base WMP, pp. 183-185): a. Define "NB" as seen for "UG: NB > OH:NB." i. How does PG&E calculate UG NB and OH NB for the purpose of determining these criteria? ii. How does NB differ from the CBR in terms of how benefit is calculated? iii. Does PG&E calculate benefit (for NB and CBR) based on overall effectiveness for mitigations (as seen in Table PG&E-8.1.3-1, PG&E's 2026-2028 Base WMP, p. 128), or based on location-specific effectiveness accounting for local risk drivers? Provide a brief explanation of this calculation in the response. b. Provide the spatial data (via KML or KMZ) for the tree strike potential throughout PG&E's service territory, showing a heat map across circuit segments for areas with no/low (0-5) versus high (6+) strike potential. c. How are areas of egress/ingress concern identified by the Public Safety Specialist (PSS) team (i.e. annually produce a list of areas of concern, review specific projects through this process to evaluate concerns once triggered)? i. Provide a list of areas that have been identified by the PSS team for ingress/egress concerns. This should include the circuit protection zone. d. What criteria and threshold does PG&E use when determining whether a circuit protection zone (CPZ) is affected by PSPS? e. Provide a list of projects scheduled for 2026 to 2028 that have been triggered to be a hybrid solution (from strike tree potential, ingress/egress concerns, or PSPS impacts), as depicted by one of the three criteria listed in the decision tree. Provide the information via Excel following the table below for each project. f. Provide a list of projects scheduled for 2026 to 2028 that are undergrounding projects where the UG CBR is greater than the OH-EPSS CBR, but due to the UG CBR being within 50% of the OH-EPSS CBR, the project is scoped to be undergrounded. This must also include hybrid projects that were triggered from the criteria discussed in Q3(b)(i). Provide the information via Excel following the table below for each project.	a. NB is defined as Net Benefit. i. Net Benefit is calculated as: Net Benefit = Benefits – Costs ii. Net benefit is the difference between total present value of benefits and total present value of costs (costs are subtracted from benefits) whereas a cost benefit ratio compares the total present value of benefits expected from a project to the total present value of its costs (the total project benefits are divided by the total project costs). The cost and benefit inputs used in both the CBR and net benefit calculations are the same. PG&E considers multiple factors in selecting alternatives because an over emphasis on CBR devalues high cost / high benefit projects. CBR does not consider the absolute benefits and holistic value of permanent risk mitigations, and when used as the sole criteria, results in situations where risk is permanently left on the system, including on circuit segments where undergrounding's benefits are greater than those of overhead hardening. iii. The CBR calculation in the WBCA starts with the overall effectiveness values as seen in Table PG&E-8.1.3-1 and then calculates a location-specific mitigation effectiveness value for each circuit-segment. This location-specific effectiveness value is then multiplied by the same location's initial risk value to calculate the risk reduction benefit of the mitigation. Effectiveness calculation details can be found in PG&E's response to WMP-Discovery2026-2028_DR_TURN_002-Q005, with follow-up information to be provided in WMP-Discovery 2026-2028_DR_SPD_001-Q010. b. PG&E does not have a single KMZ file that represents tree strike potential throughout PG&E's service territory. Instead, each circuit is associated with its own set of KMZ files based on the following conductor types: • Not Hardened • 4DCu TW • 1/0ASR TW • 397AAC TW • 715AAC TW For reference, please see the attachment folder "WMP-Discovery2026-2028_DR_OEIS_003-Q003Atch01.zip," which contains example KMZ files for circuits	Nathan Poon	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	6	No	8	Grid Design, Operations, and Maintenance	8.2.1
105	OEIS	003	OEIS_003	4	No	OEIS_003_Q4	Regarding Effectiveness Analysis Regarding PG&E's response to TURN's Data Request 2 Question 5, Attachment 1: a. In its response to the data request, PG&E states that "Company-initiated outages, including PSPS outages, outages of unknown cause, as well as outages on existing underground assets are not applicable to this study." i. Why does PG&E not include outages on existing underground assets? ii. 561 events are shown as "N/A" that are not under the GRC drivers of "Unknown" or "Utility Work / Operation." A. Are these 561 events limited to existing underground assets or PSPS outages? B. If not, why are these listed as "N/A" for determining effectiveness? b. PG&E's response included a spreadsheet with a tab accounting for risk scores and associated wildfire intensity and outcome when calculating for PSPS effectiveness. Provide a detailed description of how PG&E accounts for wildfire intensity and outcome when determining the effectiveness of reducing wildfire risk for mitigations.	a. i. The purpose of the study is to analyze the effectiveness of an array of mitigations in comparison to existing bare overhead conductors within the HFTD. Replacement of existing underground assets, which are mostly located in urban settings, are not the focus of system hardening mitigations. ii. PG&E notes 581 outage combinations (not 561) with effectiveness values of "N/A" that are not explicitly listed as "Unknown" or "Utility Work / Operation" drivers. WMP-Discovery 2026-2028_DR_OEIS_003-Q004 Page 2 A. These 581 outage combinations are categorized as follows: (i) 221 were underground outages (ii) 121 have insufficient information to assess mitigation effectiveness (iii) 100 were caused by environmental/external forces of either wildfires or ice/snow storms and outage cause could not be properly associated with any specific equipment failure (iv) 65 were substation outages (v) 74 were caused by 3rd party/metering equipment B. PG&E excluded these outage events from consideration in the analysis as they are not directly applicable to system hardening mitigations. b. In determining the effectiveness of reducing wildfire risk for mitigation, PG&E accounts for wildfire intensity and outcomes by differentiating (a) the type of fire – categorized as destructive, large, or small – and (b) whether the fire would occur during Red Flag Warning (RFW) conditions. This distinction is important because both the environmental conditions and the potential severity of a fire influence the overall risk. The likelihood of a destructive fire is significantly higher under RFW conditions compared to non-RFW conditions, and the fire type further informs the expected impact. When assessing the effectiveness of wildfire risk mitigations, especially Public Safety Power Shutoffs (PSPS), PG&E factors in this elevated risk by specifying effectiveness in reducing likelihood of ignition by different outcomes (which is combination of fire severity and RFW flag) if applicable. This allows PG&E to also	Nathan Poon	4/15/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3-1
106	OEIS	003	OEIS_003	5	No	OEIS_003_Q5	Regarding Risk Reduction a. Provide a copy of Table 6-4: Summary of Risk Reduction for Top Risk Circuits (PG&E's 2026-2028 Base WMP, p. 163) that has the overall utility risk scores for all top risk circuits broken out by year without including the expected risk reduction from EPSS.	Please see "WMP-Discovery2026-2028_DR_OEIS_003-Q005Atch01.xlsx" for the Summary of Risk Reduction without the expected risk reduction from EPSS.	Nathan Poon	4/15/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	1	No	6	Wildfire Mitigation Strategy Development	6.2.1
107	OEIS	003	OEIS_003	6	No	OEIS_003_Q6	Regarding Pole Clearing Table 9-2 shows an Activity Timeline Target of 365 days for Pole Clearing Program (VM-02). a. Explain how this timeline target allows PG&E to maintain compliance with PRC 4292. b. Provide documentation of an example of past conditions that required PG&E to use a substantial portion of the 365-day Activity Timeline Target to complete pole clearing work.	a. To maintain compliance with PRC 4292, PG&E performs year-round pole clearing activities. Per TD-7122S Section 7.1 "Annual Planning", pole clearing personnel must perform inspection and work at each designated location to ensure compliance with PRC § 4292. Pole clearing activities occur during four phases which are conducted annually: • Inspection: October of the Prior Year – March • Initial Clear: January – April • Maintenance 1 (M1) Except for "Inspect No Work" locations, all documented Subject Poles are targeted for clearance: May – August • Maintenance 2 (M2) Except for "Inspect No Work" locations, all documented Subject Poles are targeted for clearances: September – December WMP-Discovery 2026-2028_DR_OEIS_003-Q006 Page 2 b. Please refer to response in 'A' for the four phases established and utilized annually by the Pole Clearing program that covers the 365-day timeline needed to ensure we remain compliant with the PRC 4292 guidelines for our VM-02 initiative. These phases allow us to address constraints, regrowth and accumulation of debris that may impact pole clearance.	Nathan Poon	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	0	No	9	Vegetation Management & Inspections	9.4
108	OEIS	003	OEIS_003	7	No	OEIS_003_Q7	Regarding Substation Inspection Timelines Table 9-2 shows an Activity Timeline Target of 274 days for Substation Inspections - Distribution (VM-05), Substation Inspections - Transmission (VM-06), and Substation Inspections - Power Generation (VM-07). a. Explain how this timeline target allows PG&E to maintain compliance with PRC 4291. b. Provide documentation of an example of past conditions that required PG&E to use a substantial portion of the 274-day Activity Timeline Target to complete pole clearing work.	a. PG&E targets completion of inspections under VM-05, VM-06, and VM-07 no later than the end of Q3 so that any related mitigation work required to maintain compliance with PRC 4291 can be completed by the end of the year. b. PG&E understands this request to refer to VM-05, VM-06, and VM-07, which perform defensible space inspections for substations and power houses, not pole clearing work. Please see "WMP-Discovery2026-2028_DR_OEIS_003-Q007Atch01.jpg" for an example of an external factor which may temporarily delay our ability to perform defensible space inspections at substations and powerhouses. In general, those factors may include, but are not limited to, physical conditions	Nathan Poon	4/15/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_003.zip	1	No	8	Grid Design, Operations, and Maintenance	8.3.15
109	SPD	002	SPD_002	1	No	SPD_002_Q1	Every Friday by noon, provide SPD with copies of any data requests PG&E received from the Office of Energy Infrastructure Safety (Energy Safety) or any other party within the previous seven days. Include any attachments, appendices or datasets in the native format that were submitted to PG&E with the data requests.	PG&E objects to this request on the grounds that continuing discovery obligations are not permitted under California law. Bles v. Exxon Mobil Corp., 124 Cal.App.4th 1315, 1328 (2004); Code Civ. Proc. § 2030.060(g). Notwithstanding and without waiving this objection, PG&E responds as follows. Discovery provided to Energy Safety and other requesting parties is publicly posted and available on PG&E's website at Community Wildfire Safety Program. The native format version (Excel) of PG&E's WMP DR Summary is updated on our website each	Eddie Schmitt	4/16/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_002.zip	0	No	N/A	N/A	N/A
110	SPD	002	SPD_002	2	No	SPD_002_Q2	Every Friday by noon, provide SPD with any responses to data requests that PG&E sent to Energy Safety or any other party within the previous seven days. Include any attachments, appendices or datasets in the native format that were sent to Energy Safety or any other party with the data requests.	PG&E objects to this request on the grounds that continuing discovery obligations are not permitted under California law. Bles v. Exxon Mobil Corp., 124 Cal.App.4th 1315, 1328 (2004); Code Civ. Proc. § 2030.060(g). Notwithstanding and without waiving this objection, PG&E responds as follows. Discovery provided to Energy Safety and other requesting parties is publicly posted and available on PG&E's website at Community Wildfire Safety Program. The native format version (Excel) of PG&E's WMP DR Summary is updated on our website each	Eddie Schmitt	4/16/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_002.zip	0	No	N/A	N/A	N/A
111	SPD	002	SPD_002	3	No	SPD_002_Q3	Every Friday by noon, provide SPD with the updated native format version (i.e. Excel) of the PG&E WMP DR Summary1 that is submitted weekly to the Energy Safety docket.	PG&E objects to this request on the grounds that continuing discovery obligations are not permitted under California law. Bles v. Exxon Mobil Corp., 124 Cal.App.4th 1315, 1328 (2004); Code Civ. Proc. § 2030.060(g). Notwithstanding and without waiving this objection, PG&E responds as follows. Discovery provided to Energy Safety and other requesting parties is publicly posted and available on PG&E's website at Community Wildfire Safety Program. The native format version (Excel) of PG&E's WMP DR Summary is updated on our website each	Eddie Schmitt	4/16/2025	4/18/2025	4/18/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_002.zip	0	No	N/A	N/A	N/A
112	TURN	003	TURN_003	1	No	TURN_003_Q1	Please provide PG&E's wildfire risk model (WDRM v4) assumptions and results in Excel. Please provide all outputs and assumptions available. At minimum, this should include Circuit Protection Zone (CPZ) name, likelihood, consequence, total risk score, and number of overhead miles of each CPZ in separate columns. In addition, please include the following: a. Indicate which CPZs are prioritized for undergrounding from 2026-2028 (please indicate the year work will start and finish). b. Indicate which CPZs are prioritized for overhead hardening from 2026-2028 (please indicate the year work will start and finish).	Please refer to the wildfire risk model (WDRM v4) output. Please refer to sections 3, 4, and 5 in the Wildfire Distribution Risk Model v4 documentation for the requested assumptions, available at https://www.pge.com/en/outages-and safety/safety/community-wildfire-safety program.html?WT.mc_id=Vanity_wildfiremitigationplan#accordion-9901da73ab-item 4366b98ea7. a. Please see attachment "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx," which is the 2026-2028 workplan for GH-04 Undergrounding, which includes system hardening undergrounding and community rebuild work.	Reina Yanagiba	4/17/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	3	No	5	Risk Methodology & Assessment	5.4
113	TURN	003	TURN_003	2	No	TURN_003_Q2	Please provide an estimate, by activity, of total annual cost and risk reduction, for all wildfire mitigation activities from 2019-2024 (recorded). Please explain whether this risk reduction has been incorporated into PG&E's baseline risk. Please provide all supporting calculations and data in Excel.	PG&E did not start estimating wildfire risk reduction until 2023 with the 2023-2025 WMP cycle. The risk reduction calculations require temporal and spatial alignment across a model version, circuit segments, and work plans. Currently, historical circuit segment datasets have only been prepared with a WDRM model release (earliest full-territory dataset is with WDRM v3). The earliest year that we have a WDRM model, respective circuit segment data, and associated work plans is in 2023. Risk reduction results for 2023 and 2024 can be found in each year's respective Annual Report on Compliance (ARC), and total annual recorded costs can be found in PG&E's Non-Spatial Quarterly Data Report (QDR) Table 11. Both are published either on PG&E's Community Wildfire Safety Program website1 or on the Office of Energy Infrastructure Safety's (Energy Safety) e-filing system. Please note that PG&E is unable to provide the supporting calculations and data regarding annual risk reduction without substantial time and effort. PG&E would be happy to meet with TURN to discuss this issue further. Additionally, please note that PG&E's QDR financial data is entered from our financial records and there are no supporting calculations or data to provide. Please find the referenced public filings at the links below: 2019-2022: Financial data for the 2019-2022 period is located in Table 11 of our 2022 Q4 QDR, which is available at the following link: ii in Table 11 of our 2022 Q4 QDR, which is available at the following link: 1. See https://www.pge.com/en/outages-and-safety/safety/community-wildfire-safety program.html#accordion-99016a73ab-item-c78879477 8. WMP-Discovery 2026-2028_DR_TURN_003-Q002 Page 2 • https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness and-support/PGE-2022-Q4-QDR-r1-20230301.zip. 2023: Financial data for 2023 is located in Table 11 of our 2023 Q4 QDR, and risk reduction data is located in our 2023 ARC. These documents are available at the following links: • https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness and-support/q4-2023-qdr.xlsx (see Table 11). • https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness and-support/PG-02-2024-one-	Reina Yanagiba	4/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	0	No	5	Risk Methodology & Assessment	5.4

114	TURN	003	TURN_003	3	No	TURN_003_Q3	In Excel, please provide the outputs of the PSPS and EPSS risk models, respectively, with the same circuit/CPZ identifiers as provided in the previous questions. At minimum, this should include Circuit Protection Zone (CPZ) name, likelihood, consequence, total risk score, and number of overhead miles of each CPZ in separate columns. In addition, please indicate which CPZs are targeted for PSPS and EPSS mitigations from 2026-2028. Please indicate what the mitigation is.	Please see attachment "WMP-Discovery2026-2028_DR_TURN_003-Q003Atch01.xlsx" for the outputs of the PSPS and EPSS risk models. This data was created as of April 24, 2025. There are currently six circuit segments planned for construction in 2026-2027 with the purpose of reducing PSPS risk: 1. TEXON 110273936; 2. DUNBAR 1103534; 3. PLACERVILLE 21067522; 4. EL DORADO PH 2101CB; 5. CORNING 110253184; and 6. PIT NO 3 21011482. The above projects were selected based on a historic lookback of PSPS data, not the outputs of the PSPS risk model provided, as these projects were selected prior to the development of the PSPS risk model. Please note that scoping for 2027 and 2028 jobs is still in progress and additional PSPS mitigation work may be added to the workplan once scoping is complete. All planned system hardening and undergrounding work will support reliability mitigations for EPSS.	Reina Yanagiba	4/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	1	No	5	Risk Methodology & Assessment	5.4
115	TURN	003	TURN_003	4	No	TURN_003_Q4	Section 6.1.3.1, Page 129, states "PG&E estimates that the average cost for primary distribution undergrounding is approximately $3.0 million per mile and the average cost to install covered conductor is approximately $1.0 million per mile." a. Please provide support for these estimates, including any calculations in Excel. b. Are both estimates in dollars per overhead mile? If not, please provide PG&E's estimates in dollars per overhead mile and provide the underlying assumptions/calculations to show how the estimates were formed. c. For all undergrounding projects completed from 2018 to 2024, please provide, on a project-level basis, the following information in Excel with supporting data and calculations: i. the dates of the project (start and finish), ii. total cost, iii. number of overhead miles removed, iv. purpose of the project, including whether it was related to wildfire risk or in an urban setting, v. overhead miles removed, vi. overhead miles undergrounded, and vii. cost per overhead mile. d. For all overhead hardening projects completed from 2018 to 2024, please provide, on a project-level basis, the following information in Excel with supporting data and calculations: i. the dates of the project (start and finish), ii. total cost, iii. number of overhead miles covered/hardened, iv. purpose of the project, including whether it was related to wildfire risk, and v. cost per overhead mile. e. Please provide assumed unit costs ($/overhead mile) for covered conductor and undergrounding, separately, in 2026, 2027, and	a. Please see worksheet Subparts A and B in attachment "WMP-Discovery2026-2028_DR_TURN_003-Q004Atch01.xlsx," which shows the calculations for PG&E's estimated average unit costs for undergrounding and overhead hardening, which is based on the historical performance. Unit cost is calculated based on the total costs-since-inception (multi-year) of the subprojects that are 100% complete each year. For Undergrounding, we have included the unit costs for system hardening undergrounding (excluding Community Rebuild undergrounding). Note, unit cost is not calculated by dividing the total program cost spent in one year by the total miles completed in one year because this would inaccurately include the readiness costs for future work that is not yet complete and post-construction costs for previously completed projects. b. Please see column F in worksheet Subparts A and B in attachment "WMP Discovery2026-2028_DR_TURN_003-Q004Atch01.xlsx." The undergrounding unit cost at approximately $3.0 million per mile is the cost for undergrounding installed, not per overhead mile removed. The overhead miles removed and replaced by UG reflect actual overhead miles removed on undergrounding subprojects, where data is available; otherwise, where data is not yet available, we used the adopted5 overhead to undergrounding conversion factor of 1 mile of overhead to 1.25 miles of undergrounding. c. Please see worksheet Subpart C in attachment "WMP-Discovery2026-2028_DR_TURN_003-Q004Atch01.xlsx." • Note, the question asks for "iii. number of overhead miles removed" and "v. overhead miles removed". We are assuming those are the same request and have included one column for overhead miles removed. Additionally, because the unit cost is associated with undergrounding miles installed, we have included the undergrounding miles installed as an additional column in this dataset. • Note, the start date reflects when the project was first identified for scoping; the end date reflects when the project was fully constructed. • Year complete signifies the year a subproject completes the final Fire Risk Safety Audit, which may differ from the end date year, which reflects when the	Reina Yanagiba	4/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3.1
116	TURN	003	TURN_003	5	No	TURN_003_Q5	Section 6.1.3.1, page 129, states "Covered conductor can generally be installed more quickly and costs less than undergrounding, but it does not protect against tree strike risk or fully address the reliability risk. Given increasing instances of extreme weather and volatility, the stress on vegetation around our assets is only expected to get worse. Therefore, undergrounding, where feasible, is the best alternative where tree strike risk is high." In Excel, please provide the time (days) from project initiation to project completion for all covered conductor and undergrounding projects, separately from 2018. Please include all supporting data/calculations. a. Please explain and quantify whether the fact that covered conductor can be installed more quickly than undergrounding has been incorporated into PG&E's risk modeling and cost-benefit ratios. If yes, please explain and provide an illustrative calculation. If no, please explain why not.	Please see worksheets, "Summary" and "Duration Analysis" in attachment "WMP Discovery2026-2028_DR_TURN_003-Q005Atch01.xlsx". The attachment includes the days the subproject was initiated (i.e., start of project scoping) to the end of the project (i.e., construction complete) for both undergrounding and overhead subprojects between 2018 and 2024, split between base system hardening and fire rebuild work. A few notes about the subproject data provided in the "Duration Analysis": • Construction End Date represents the date construction was complete. If that date was not available, we provided the date the project was energized. • As identified in Column I, projects were removed from the analysis if there were data anomalies based on: o Negative duration (i.e., construction end date showed prior to the project start) o Missing dates (i.e., data was not captured at the time) o Data discrepancies (i.e., where we know that construction end date is inaccurate based on when the project was energized and passed the Fire Risk Safety Audit) • Projects with less than 14-day durations were removed from the average calculation in the "summary" worksheet based on subject matter expertise of project durations of fire rebuild work. a. Please see the discussion of cumulative risk in PG&E's 2025 WMP Update (PG&E's 2025 Wildfire Mitigation Plan Update R2, p. 57-58). While speed of initiative construction has not explicitly been incorporated into PG&E's risk modeling and cost-benefit ratios, PG&E manages its suite of wildfire mitigation initiatives to minimize cumulative risk exposure and does account for the time value of risk based on the useful life of the asset. Specifically, PG&E uses an integrated mitigation strategy to manage wildfire risk across our system while we implement more permanent risk reduction strategies like undergrounding and other system hardening work. PG&E's objective when scheduling mitigation initiatives is to ensure that we have built sufficient risk mitigation into the system to minimize risk exposure as we develop our long-term system hardening programs. PG&E achieves this through a suite of Comprehensive Monitoring and Data Collection	Reina Yanagiba	4/17/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3.1
117	TURN	003	TURN_003	6	No	TURN_003_Q6	Please provide recorded and forecast red flag warning circuit mile days from 2020-2028 on an annual basis in PG&E's HFTD. Please define "forecast" as the assumption for PG&E's risk modeling, if available.	Please see "WMP-Discovery2026-2028_DR_TURN_003-Q006Atch01.xlsx" for recorded red flag warning circuit mile days from 2013 – 4/15/2025 broken out by year. PG&E does not include "forecasts" for red flag warning circuit mile days in its risk modeling.	Reina Yanagiba	4/17/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	1	No	5	Risk Methodology & Assessment	5.3
118	TURN	003	TURN_003	7	No	TURN_003_Q7	In one Excel workbook, please provide the annual number of ignitions started by PG&E equipment from 2018-2024 in PG&E's HFTD (or indicating which are in the HFTD) with supporting data and calculations. Please also include: a. The date of each ignition. b. Driver of the ignition (cause). c. Structures destroyed. d. Fatalities and/or injuries. e. Whether there was red flag warning at the time of the ignition. f. Any other information readily available and used by PG&E in its risk modeling.	Please see "WMP-Discovery2026-2028_DR_TURN_003-Q007Atch01.xlsx" for the requested information.	Reina Yanagiba	4/17/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	1	No	5	Risk Methodology & Assessment	5.2.2.1
119	TURN	003	TURN_003	8	No	TURN_003_Q8	Regarding the mitigation effectiveness of covered conductor: a. Please provide all studies known to PG&E that calculate the mitigation effectiveness of covered conductor using data rather than SME estimates. b. From 2020-2024 on an annual basis, please provide the number of faults per mile on lines with covered conductor versus lines without covered conductor in PG&E's HFTD. c. From 2020-2024 on an annual basis, please provide the number of ignitions per mile on lines with covered conductor versus lines without covered conductor in PG&E's HFTD.	a. Please see PG&E's response titled "RAMP-2024_DR_TURN_006-Q004," provided to TURN on September 10, 2024, for further details regarding an example analysis of observed covered conductor mitigation effectiveness and details around why PG&E does not support application of this analysis. These reasons include: • Much of PG&E's covered conductor installation has been in wildfire rebuild areas in the absence of significant vegetation growth • Limited degradation of assets due to recent installation • Targeted installation in areas areas of low tree strike risk in alignment with PG&E's decision tree Please note that this analysis was based on only two known reportable ignitions on covered conductor. PG&E has subsequently identified an additional ignition related to covered conductor which occurred in 2023. PG&E is also partnering with UCLA on an observed effectiveness study for covered conductor but has not yet operationalized this methodology due to the limited data availability in addition to the key points reflected above. b. Please see the table below for the volume of faults per mile of PG&E's overhead conductor in HFTDs. Please note that PG&E interprets "faults" as outages, which are drawn from the Integrated Logging Information System ("ILIS"). ILIS records do not capture the type of wire, so PG&E is not able to differentiate between covered or bare conductor. As a result, PG&E is providing the outages per HFTD miles of conductor c. Please see the table below for the volume of ignitions per mile of PG&E's overhead covered vs non-covered conductor in the HFTD/HFRA. Please note that we do not track ignitions by covered conductor line mile. However, we estimate the following values for ignitions per line mile of overhead covered conductor in the HFTD, based on the number of such ignitions in each year and the line miles of overhead covered conductor in the HFTD/HFRA at the close of each year. As such, the values may not be fully representative, as covered conductor line miles may have changed throughout the year.	Reina Yanagiba	4/17/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
120	TURN	003	TURN_003	9	No	TURN_003_Q9	For each project proposed from 2026-2028 for UG and CC, please provide the following in Excel with all supporting data, calculations, and assumptions: a. Cost-benefit ratio of UG and CC for each project, indicating which mitigation was chosen (UG or CC); i. This should include unit costs assumed for each mitigation. ii. This should include number of overhead miles of each project. iii. This should include total risk and risk reduction from the project.	a. As discussed in response to TURN-003, Q01, PG&E did not calculate CBRs for projects planned to be completed in 2026 and analysis was in line with the Risk Based Decision-Making Framework, Phase 2 Decision,1 that did not require project level CBR calculations. PG&E will use elements of the WBCA to perform a cost-benefit analysis during scoping for work to be completed in 2027 and 2028; however, that analysis had not been initiated at the time of our 2026-2028 WMP submission. Preliminary CBRs have been estimated, as seen in previous DR response (OEIS-003, Q03), which included some of the analysis conducted to date. The CBR data presented in PG&E's 2026-2028 WMP are presented at the programmatic level. Those CBR calculations are consistent with those that will be proposed in the GRC and are generated using the Enterprise Risk Models. These models include our wildfire and reliability bowties and evaluate the risk reduction benefits based on location of work and program effectiveness. Additionally, these cost-benefit-ratios account for the entire benefit life of the projects and present value 1. D.22-12-017 WMP-Discovery 2026-2028_DR_TURN_003-Q009 Page 2 of revenue requirements (PVRR). For more detail, please see section 6.2.1.2 Cost Benefit Scores of PG&E WMP Plan R0 2026-2028. i. N/A ii. N/A iii. N/A	Reina Yanagiba	4/17/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1

121	TURN	003	TURN_003	10	No	TURN_003_Q10	Section 8.2.1, Page 195 states "In any given location, overhead hardening does not reduce the impact from PSPS events, but is expected to reduce EPSS-caused outages." Please explain why PG&E has not instituted higher wind thresholds for overhead hardened circuits, which reduce the probability of PSPS, as Southern California Edison has done. Please support the response with all analyses and data regarding purported differences between SCE's and PG&E's service territory or overhead hardening programs.	PG&E does not use verbatim yes/no wind speed thresholds for PSPS execution. Please see the Section 5 of the WMP. Instead, PG&E uses a risk-informed methodology that combines the probability of an ignition (Ignition Probability Weather model [IPW]) with the probability of rapid and intense fire (Fire Potential Index Model [FPI]). The IPW model is informed by a machine learning outage model called OPW, that is trained on if outages were observed or not, hourly, across our entire network combined with meteorological, topographic and asset information. Thus, any benefits from covered conductor, vegetation management, or any other program that would reduce the probability of an outage is reflected in the actual grid performance in localized areas which the model is trained on. Thus, we do not apply wind speed threshold modifiers for grid hardening, vegetation management or any other program that could reduce outage or ignition risk outside the OPW model, nor do we have to make any assumptions or estimates about the effectiveness of each program to then apply across all circuits. To ensure our model is reflective of the latest grid performance, we annually update the model with the last year of performance versus weather data and utilize an exponential function (which was calibrated to provide the best performance), that weights the most current years most heavily in final model predictions.	Reina Yanagiba	4/17/2025	4/22/2025	4/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_003.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
122	OEIS	004	OEIS_004	1	No	OEIS_004_Q1	Regarding Third-Party Model Review a. Page 12 of the E3 review states that "the main driver for consequence is the FPI score which further reduces the impacts of the in-depth simulations coming from the Technosylva analysis." On page 15 of the Wildfire Consequence Model V4 document, two criteria are mentioned for the predictive destructive criteria, one for FPI-R and one for the Technosylva simulations. i. Out of the simulated weather history, how many days from 2012 through 2022 have met each criterion in the highest risk circuits? ii. Provide a detailed description of how FPI-R compared to predictive destructive criteria influence the consequence score.	a. i. The criteria for "predicted destructive" are computed for every 100x100m raster pixel containing grid infrastructure. We confirmed that this request is for the tabulation of days where at least one grid pixel containing part of each high risk circuit segment meets each of the "predicted destructive" criteria. There are 90 high risk circuit segments in Tables 5-5 and 6-1 of the 2026 WMP, so those were used for the analysis, the results of which are tabulated in "WMP-Discovery2026-2028_DR_OEIS_004-Q001Atch01.xlsx" in the worksheet titled "Predicted destructive days." ii. The predicted destructive criteria draw on two different sources of information: • The predictions of the FPI model, an empirical model trained on historical fire outcomes conditional on weather and environmental covariates, via its 1-5 R-score (4+ are classified as predicted destructive conditions). The R score expresses how likely a destructive fire is, given the input conditions, based on model fit using outcomes of historical fires. These values are available and adopted by the v4 wildfire consequence model for all 183 WMP-Discovery 2026-2028_DR_TURN_001-Q001 Page 2 days of the June-November wildfire season annually from 2012 through 2022. • The flame length and rate of spread produced by wildfire simulations run by Technosylva across all grid locations. These metrics describe how intense and fast-moving simulated fires were, with thresholds for predicted destructive set to include all the values output by simulations of historically destructive fires. For the v4 model, and in keeping with past practice, the simulations were performed across the set of worst wildfire conditions days identified by PG&E's meteorology team from the weather data for each year. There are approximately 30 such days with simulation data available each year, with data spanning 2012 through 2020 available at the time of v4 model finalization. Either source of data is sufficient to label conditions as "predicted destructive". The FPI model is probabilistic and tuned to past outcomes	Nathan Poon	4/18/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_004.zip	1	No	5	Risk Methodology & Assessment	5.4
123	OEIS	004	OEIS_004	2	No	OEIS_004_Q2	Regarding the Wildfire Transmission Risk Model a. On page 32 of PG&E's Wildfire Transmission Risk Model Documentation v4, PG&E references the "T-Line Asset Data Quality Improvement - Critical Components, Guide to Conservative Assumptions," dated January 14, 2020. Provide a copy of this document.	Please see "WMP-Discovery2026-2028_DR_OEIS_004-Q002Atch01.pdf" for the requested information.	Nathan Poon	4/18/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_004.zip	1	No	5	Risk Methodology & Assessment	5.4
124	OEIS	004	OEIS_004	3	No	OEIS_004_Q3	Regarding the Wildfire Consequence Model a. On pages 18-22 of PG&E's Wildfire Consequence Model V4 document, PG&E provides an example of the suppression model applied to the Dixie Fire. i. Provide an expanded version of the example to show the calculation of the number of structures in Table 11 (p. 22). This includes providing the data on Existing Structures, live fuel moisture (LFM), and wind speed (WS), as noted on page 20, which are not reported in the example. ii. How did PG&E select the 300 m height for wind speed (p. 20)? What impact does that have on the statistical performance of the model? iii. On page 14 of the Wildfire Consequence Model V4 document, Table 4 lists the dry wind conditions criteria. Are these sampled at a weather station height, at 300 m above surface (like the consequence model wind speeds), or some other reference height? b. On page 26 of PG&E's Wildfire Consequence Model V4 document, PG&E presents the equation for calculating the fractional fatalities based on AFN and WS fatalities. i. What are the units of the AFN value? ii. How does this correspond to the AFN deciles shown in Figure 13 and Table 13 (p. 26)? c. On page 36 of the Wildfire Consequence Model V4 document, Table 20 provides exemple consequence training data. Provide this table as an Excel spreadsheet with one row per historical fire used in consequence training. Provide the following columns in addition to the columns shown in Table 20: (1) TDI level (2) AFN decile level (3) Wind speed in mph at 300 m (4) Live fuel moisture (5) Daily average wind speed for Dry Wind Conditions (if this is different from wind speed in mph at 300 m) (6) 10-hr dry fuel moisture (7) Relative humidity (8) FPI-R (9) Flame Length (10) Rate of Spread (11) Whether the fire is within the HFRA (12) Whether the fire was used for training or validation d. In PG&E's response to Energy Safety's Data Request 1 Question 25, PG&E states that "the overall WF	a. i. The calculations in the 4.1.3.2 and 4.1.3.3 sections of documentation were included as an illustrative example not drawn from the modeling performed for the v4 release. A worksheet named "Dixie example" in "WMP-Discovery2026-2028_DR_OEIS_004-Q003Atch01.xlsx" reproduces the calculations for the equivalent of Table 11, starting with model coefficients and covariate values for the Dixie Fire, but based on coefficients aligned with the released v4 model. The model only requires the known count of structures burned under actual conditions, not existing structures, because other values are computed as a ratio relative to the actual values. ii. Modeling wind in weather models, like the one used to create the historical gridded weather data available at PG&E, requires accounting for air flows in 3 dimensions. Wind is particularly impacted by the boundary layer at ground level and various obstructions like topographical features, buildings, trees, etc. In PG&E's weather model (which is a standard model in the meteorological community), wind is modeled at various heights above the ground, with values at 10m influenced by surface roughness and topographic obstructions and values at 300m typically capturing more "free flow" conditions. In other words, there is much more spatial/local variability in the data closer to the surface due to surface characteristics. The higher altitude winds are also (very generally speaking) the drivers of wind gusts at the ground level. When considering the conditions that would correlate with the expected outcome of a hypothetical wildfire, we opted to use speeds at 300m to avoid overly local influences at the point of origin that may not be representative of the prevailing conditions in the surrounding area. We did not perform a formal sensitivity analysis on other potential covariates in the same role. WMP-Discovery 2026-2028_DR_OEIS_004-Q003 Page 3 iii. The Dry Wind criteria are based on 10m wind speed. Dry Wind is predictive of outcomes due to its role in drying fuels (as well as propelling fires) and humidity is modeled at 2m above the ground, so the 10m wind speed is closer	Nathan Poon	4/18/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_004.zip	1	No	5	Risk Methodology & Assessment	5.4
125	OEIS	004	OEIS_004	4	No	OEIS_004_Q4	Regarding Table 6-4: Summary of Risk Reduction for Top Risk Circuits In response to Energy Safety's Data Request 2, Question 17, PG&E provided an updated version of Table 6-4 including the associated mileage for various hardening planned and percentage that has already been hardened. a. Compared to the targets provided in Table 8-1 (PG&E's 2026-2028 Base WMP, p. 175) and estimates in PG&E's response to Energy Safety's Data Request 1 Question 17 (labeled "WMP" in the table), to the summation of the mileages provided in Attachment 1 (labeled "DR" in the table), Energy Safety found the following: 2026 2027 2028 Hardening Type WMP DR Δ WMP DR Δ Undergrounding 370 16.94 353 307 203.68 103 ---	a. Please see attachment "WMP-Discovery2026-2028_DR_OEIS_004-Q004Atch01.xlsx" for missing from the mileages provided in the updated Table 6-4 (labeled "Δ" in the table). A few notes about this data: • In answering this question, we identified a calculation error in our response to OEIS_002_Question 17 regarding the miles pulled in for each circuit segment. That response under counted the miles planned on circuit segments in Table 6-4 based on the formula that was used to pull in the data (i.e., the miles originally included only captured the miles for one subproject associated with the circuit segment, not all subprojects planned on that circuit segment). We have corrected the miles in the table and provided as a supplemental response to this data request as attachment "CORRECTED_WMP-Discovery2026-2028_DR_OEIS_002-Q017Atch01.xlsx". • The 2027-2028 portfolio is currently planned at the circuit segment-level based on the top 20% risk ranked circuit segments of the WDRM v4 model. The work is not yet scoped and broken into subprojects. Columns ii-iv cannot be filled out. • i. The values in Table 6-4 were generated using WDRM v4. We assume the intent of this subpart was to provide work prescribed in lower 80% of total overall utility risk due to prioritization based on WDRM v4, not v3, and have responded accordingly. PG&E welcomes clarification if there was different intent about scope of this request. • ii. Work in this category represents projects that are Fire Rebuild, PSPS, or "Other", which includes projects that were initiated under other programs outside of the System Hardening program which is funded by MAT codes 0BW and 3UG, such as Work Requested by Others (WRO), capacity, and Rule 20 B and C programs. • iv. Work in this category represents Community Rebuild miles. This work occurs	Nathan Poon	4/18/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_004.zip	3	No	6	Wildfire Mitigation Strategy Development	6.2.1.3

126	MGRA	004	MGRA_004	1	No	MGRA_004_Q1	PSPS event damage event reports obtained from post-event patrols, including cause and estimated time of damage for all quarters of 2024. Cause was not included in the provided data. a. Also please extend the request to cover four quarters or 2023 as well.	In the PSPS Event Damage Feature Class schema previously provided in "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch02.xlsx", there is a field titled DamageDateTime. This field should be used to relate records in the Feature Class to the PSPS Event Conductor Damage and PSPS Event Support Structure Damage Detail tables, which are provided in "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch01.xlsx" and "WMP-Discovery2026-2028_DR_MGRA_002-Q002Supp01Atch03.xlsx", respectively. Please note that DamageDateTime is not a native field within the detail table schemas as defined by Energy Safety; rather, it is a linking field that exists in the Feature Class and must be used to establish the relationship with the associated detail tables. Regarding the Cause field, PG&E considers this information to be confidential and applies a consistent policy of nondisclosure, regardless of the feature class. Data submitted in quarterly reports to the Office of Energy Infrastructure Safety may be part of ongoing investigations and analyses and is protected under applicable legal privileges, including the attorney-client privilege (e.g., Evid. Code § 954; Code Civ. Proc. § 2018.010, et seq.). These reports capture a snapshot in time and are not subsequently updated to reflect findings from later investigations. Moreover, PG&E exercises caution in disclosing information that could be exploited by malicious actors to replicate adverse events. Cause data may include sensitive details about physical infrastructure, cybersecurity systems, or critical energy assets, all of which are protected under federal and state laws (see 18 C.F.R. § 388.113; Gov. Code § 6254(k), (ab); 6 U.S.C. § 131; 6 C.F.R. § 29.2). For example, if a specific piece of equipment was identified as causing a large-scale outage, that knowledge could potentially be used to target similar equipment elsewhere. WMP-Discovery 2026-2028_DR_MRGA_001-Q001 Page 2 PG&E is resharing data provided to MGRA from last year's MGRA request where MGRA requested PSPS Event Damages. As noted last year, there were two PSPS events during the year and both took place during Q3 2023. Please see "WMP-Discovery2026-2028_DR_MGRA_004-Q001Atch01.xlsx". Data is extracted from our quarterly GDB files, which contain a high volume of records in each submission (anywhere between 10-16 million records). The feature classes and related tables included in the submission are not static and change each quarter. Similarly, the Office of Energy Infrastructure Safety (Energy Safety) often revises their Data Guidelines introducing and removing various data points, consolidating feature classes, changing field names, updating definitions, and renaming fields. Such revisions make it difficult to create a consistent, non-confidential GDB version. Energy Safety does not have a non-confidential GDB submission. The	Joseph Mitchell	4/21/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_004.zip	1	No	N/A	GIS	N/A
127	MGRA	004	MGRA_004	2	No	MGRA_004_Q2	Unplanned outage data, including cause. Cause was not provided in the initial response	PG&E considers the BasicCause field information to be confidential. Data submitted in quarterly reports to the Office of Energy Infrastructure and Safety may be part of ongoing investigations and analyses and is protected under applicable legal privileges, including the attorney-client privilege (e.g., Evid. Code § 954; Code Civ. Proc. § 2018.010, et seq.). These reports capture a snapshot in time and are not subsequently updated to reflect findings from later investigations. Moreover, PG&E exercises caution in disclosing information that could be exploited by malicious actors to replicate adverse events. Cause data may include sensitive details about physical infrastructure, cybersecurity systems, or critical energy assets, all of which are protected under federal and state laws (see 18 C.F.R. § 388.113; Gov. Code § 6254(k), (ab); 6 U.S.C. § 131; 6 C.F.R. § 29.2). For example, if a specific piece of equipment were identified as causing a large-scale outage, that knowledge could potentially be used to target similar equipment elsewhere. Data is extracted from our quarterly GDB files, which contain a high volume of records in each submission (anywhere between 10-16 million records). The feature classes and related tables included in the submission are not static and change each quarter. Similarly, the Office of Energy Infrastructure Safety (Energy Safety) often revises their Data Guidelines introducing and removing various data points, consolidating feature classes, changing field names, updating definitions, and renaming fields. Such revisions make it difficult to create a consistent, non-confidential GDB version. Energy Safety does not have a non-confidential GDB submission. The submission they receive is confidential. To create a non-confidential file for MGRA, PG&E attempts to apply logic to the feature classes to strike known confidential fields, data types, or entire datasets across the entire GDB. However, confidential data could still have been provided inadvertently. PG&E respectfully requests that MGRA use this data for internal purposes only and restrict access to a need-to-know basis. WMP-Discovery 2026-2028_DR_MRGA_001-Q002 Page 2 Additionally, the interconnected aspect of feature classes data and geospatial representation of the data creates complexities in identifying the confidentiality of individual records and introduces additional risk for error. As such, PG&E may designate additional data points confidential at a later point in time should more confidentiality considerations become known. PG&E would be happy to provide the requested confidential information under the terms of a non-disclosure agreement to protect the confidentiality of the information.	Joseph Mitchell	4/21/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_004.zip	0	No	N/A	GIS	N/A
128	MGRA	004	MGRA_004	3	No	MGRA_004_Q3	Wire down data for all four quarters of 2023 and 2024. This was missing cause and event time.	PG&E considers the Cause fields to be confidential. While this field was inadvertently shared with MGRA in the past, PG&E maintains that such information is protected. Data included in quarterly reports submitted to the Office of Energy Infrastructure and Safety may be part of ongoing investigations and analyses and is protected	Joseph Mitchell	4/21/2025	4/23/2025	4/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_004.zip	0	No	N/A	GIS	N/A
129	OEIS	005	OEIS_005	1	No	OEIS_005_Q1	Regarding distribution detailed inspections and findings a. Provide the following data related to detailed distribution inspections: i. The number of detailed distribution inspections performed in the HFRA/HFTD 2020, 2021, 2022, 2023 and 2024. ii. The number of level 1 work orders that resulted from distribution detailed inspections in the HFRA/HFTD in 2020, 2021, 2022, 2023 and 2024. iii. The number of level 1 work orders originating from distribution detailed inspections closed in the HFRA/HFTD 2020, 2021, 2022, 2023, and 2024. iv. The number of level 2 work orders that resulted from distribution detailed inspections in the HFRA/HFTD in 2020, 2021, 2022, 2023 and 2024. v. The number of level 2 work orders originating from distribution detailed inspections closed in the HFRA/HFTD in	Please see the table below for the requested information. Notes 1 and 2 below help explain the data in the table. Metric Number Metric Name 2020 2021 2022 2023 2024 Q01(a)(i) Total Inspections Performed in HFTD-HFRA 352,057 449,645 395,968 235,265 10,197 Q01(a)(ii) HFTD-HFRA	Nathan Poon	4/22/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	8	Grid Design, Operations, and Maintenance	8.3.8.1
130	OEIS	005	OEIS_005	2	No	OEIS_005_Q2	Regarding Distribution Hazard Patrol Page 364 of PG&E's 2026-2028 Base WMP states Distribution Hazard Patrol inspections are "conducted in high-risk areas based on a risk-prioritized approach." Figure PG&E-9.2.2.1-1, reproduced below, shows the Consequence and Severity ratings by mile for HFTD and HRFA locations in the scope of the Distribution Hazard Patrol. a. The sum of miles shaded as Routine/Hazard/Remote Sensing (red) and Routine/Hazard (yellow) is 10,994 miles. The target for Distribution Hazard Patrol listed on Table 9-2 is 10,000 miles. i. If Distribution Hazard Patrol will cover all miles with Consequence or Wildfire Risk ratings at or above "Medium," explain the discrepancy between Figure PG&E-9.2.2.1-1 and Table 9-2. ii. If Distribution Hazard Patrol will not cover all miles with Consequence or Wildfire Risk ratings at or above "Medium": 1. Provide the criteria used to select the subset of "Medium" or higher rated miles for inspection. 2. Explain how wildfire risk is managed for "Medium" or higher rated miles that are not targeted for Distribution Hazard Patrol inspection.	a. i. The Distribution Hazard Patrol target of 10,000 miles in Table 9-2 reflects our original target mileage. The final target mileage will change as we continue to assess and develop our plans for the Hazard Patrol program for 2026. We expect the final mileage inspected to cover the miles with Consequence or Wildfire Risk at or above "Medium" shown in Figure PG&E9.2.2.1-1 barring any external factors. ii. N/A, Distribution plans to cover all miles with Consequence or Wildfire Risk Rating at or above "Medium.	Nathan Poon	4/22/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	9	Vegetation Management and Inspections	9.2.2
131	OEIS	005	OEIS_005	3	No	OEIS_005_Q3	Regarding Distribution Routine Patrol Page 363 of PG&E's 2026-2028 Base WMP states "In 2025, PG&E will use data gathered from proven remote sensing technologies to analyze how distribution inspections could be further evolved to incorporate remote sensing techniques." Further, page 363 states "PG&E may consider utilizing remote sensing in lieu of ground-based inspections on electrical spans that typically have no trees around the lines, to provide customers with a more cost-effective solution." a. Does the target for Distribution Routine Patrol listed on Table 9-2 (VM-16) include circuit miles that will be inspected using only remote sensing?	a. i. No, the target for Distribution Routine Patrol listed in Table 9-2 does not currently include circuit miles to be inspected using remote sensing. PG&E is analyzing remote sensing detection and identification data in 2025 to determine whether some number of miles may be inspected using only remote sensing in the future. The use of remote sensing is expected to be applied where there are typically no trees in proximity to the line. ii. N/A.	Nathan Poon	4/22/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	9	Vegetation Management and Inspections	9.2.1
132	OEIS	005	OEIS_005	4	No	OEIS_005_Q4	Regarding Quality Assurance and Quality Control Unit Equivalents On page 410 of its 2026-2028 Base WMP, PG&E lists "inspections" as the "Population/Sample Unit" for VM-08D&T, and VM-22D&T. In the "Population Size" and "Sample Size" columns, PG&E then indicates the unit is either "miles" or "spans." This makes it unclear whether the "Population/Sample Unit" is "inspections" or another factor. a. Clarify what the sample unit is for quality control and quality assurance audits by describing: i. The randomization software PG&E uses to draw samples randomly. ii. The unit that the randomization software draws from the population to create a sample (i.e., describe if PG&E selects from a population of inspections, miles, spans, or another population). iii. Any procedural differences when auditing randomly sampled areas for VM-08D, VM-08T, VM-22D, and VM-22T. For example, procedural differences might include selecting an inspection location randomly and then auditing an entire mile in a specific direction or selecting an inspection location randomly and then auditing the span where the inspection occurred. A. In the table below, for VM-08D&T and VM-22D&T, convert all values in "Population Size" and "Sample Size" columns from "miles" to actual or estimated number of inspections by completion the 2026, 2027, or 2028	a. i. QC (VM-22D, -22P and -22T): Excel will be used as our randomization tool in 2026-28 for both distribution and transmission. QA (VM-08D): Distribution uses ArcGIS Pro to randomize sample locations with Python scripts. QA (VM-08T): Transmission is randomized by excel. ii. QC (VM-22D): The randomization software selects from a population of Work Packets consisting of spans inspected. QC (VM-22T): The randomization software selects from a population of Work Packets consisting of a group of individual inspected locations. Transmission locations may consist of individual spans, portions of spans or multiple spans inspected, depending on the system of record, as described in greater detail in OEIS_001, Q001. QC (VM-22P): The randomization software selects from a population of poles inspected and/or cleared. QA (VM-08D): The randomization software selects from a population of Distribution	Nathan Poon	4/22/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	9	Vegetation Management and Inspections	9.11
133	OEIS	005	OEIS_005	5	No	OEIS_005_Q5	Regarding Quality Control – Pole Clearing (VM-22P) Target On page 7 of its 2026-2028 Base WMP Substantive Errata, PG&E lists 99,933 poles as the population size for its annual Quality Control of Pole Clearing activity. On page 356 of its 2026-2028 Base WMP, PG&E targets 70,000 poles annually for its Pole Clearing (VM-02) activity. a. Explain why PG&E's audit population for quality control is 29,933 more poles than it targets for its pole clearing activity each year.	We apologize; the discrepancy is due to an inadvertent error. The correct population number of Quality Control Pole Clearing poles in HFRA and HFTD to be sampled from is 70,000 annually, not 99,933 poles.	Nathan Poon	4/22/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	9	Vegetation Management and Inspections	9.4
134	OEIS	005	OEIS_005	6	No	OEIS_005_Q6	Regarding Risk Model Validation a. In PG&E's response to data request OEIS-P-WMP_2025-PG&E-002, Question 14, PG&E states that "the team dedicated extra validation to confirm the results by evaluating against historical fire outcomes" and that the validation "resulted in the removal of several lightning fires from the consequence training data set". i. Provide the date this validation was completed, including, at minimum the month(s) and year. ii. Provide the date the model was updated as a result of this validation, including, at minimum the month(s) and year. b. On p. 29 of E3's Review of PG&E's Wildfire Risk Model Version 4, E3 includes a recommendation on "establishing an expanded model roadmap for model direction." i. Has PG&E established this roadmap for its planned risk model changes?	a. i. The validation task was executed during the months of August to December 2023 as part of the Wildfire Consequence v4 model development and validation. WMP-Discovery 2026-2028_DR_TURN_005-Q006 Page 2 ii. The model update became the official Wildfire Consequence v4 release after WRGSC approval in Jan 2024. There was no release other than the official release in Jan 2024. b. The table on page 31 of the E3 review provides more context on this recommendation's history, which	Nathan Poon	4/22/2025	5/1/2025	5/1/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	5	Risk Methodology & Assessment	5.4
135	OEIS	005	OEIS_005	7	No	OEIS_005_Q7	Regarding Reliability and Public Safety Risk Models In response to data request OEIS-P-WMP_2025-PG&E-002, Question 13 regarding Reliability and Public Safety risk models, PG&E states that the components — Insulator Contamination Update, Public Safety Risk Model v2, Reliability Risk Model v1, Public Safety Consequence v2, and Reliability Consequence V1 — "are not currently used for wildfire mitigation planning" and are "developed to help inform internal investment planning primarily	a. • Insulator contamination: This model is still in development for WTRM. There is no formal documentation yet. • Public Safety • Public Safety Consequence v2: Public safety consequence estimates the	Nathan Poon	4/22/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	5	Risk Methodology & Assessment	5.4

136	OEIS	005	OEIS_005	8	No	OEIS_005_Q8	Regarding Climate-Driven Extreme Risk Figure PG&E-5.3.2-1 (p. 90, PG&E's 2026-2028 Base WMP) shows scenarios involving climate-driven risk as part of extreme event evaluation. However, in PG&E's response to data request OEIS-P-WMP_2025-PG&E-001, Question 24, PG&E discusses conflagration risk as part of its extreme scenarios. a. Provide a description of what PG&E is planning on implementing changes related to climate-driven risk as it relates to the research paper in Figure PG&E-5.3.2-1. b. Provide a timeline, with dates (at a minimum, quarter and year) for when PG&E is planning on implementing changes related to climate-driven risk as it relates to the findings from the research paper referenced in Figure PG&E-5.3.2-1. c. If no such changes are planned relating to the figure, describe why no such changes are planned.	a. Physics-based models: PG&E's physics-based models provide a risk-based framework for evaluating the condition of transmission line assets subject to various hazards, which could be used to assess changes in failure likelihood during extreme events. These models use a variety of data to evaluate the current condition of an asset relative to the condition of a new pristine asset. These data are used to adjust the median condition of an asset, resulting in an estimate of the probability of failure at a given wind speed, for example, in the form of an asset-specific fragility curve. Machine Learning (ML) models: PG&E's incorporation of extreme scenario handling within its ML models is more challenging. For the WDRM models, each model update incorporates the recent ignitions and historical fires that have occurred since the last update. As more extreme scenarios are experienced, it would be expected that with each fire season either the number of ignitions will increase, the frequency of ignitions will increase, or fire outcomes will be more severe. These deviations from what was expected via the prior model will be incorporated into the new training data sets for the new model, and hence the locations of highest relative risk will change to account for the extreme scenarios that have occurred, driven by changes to both the probability of ignition and the consequence models. Additionally, RoSA is evaluating methodologies to estimate climate impacts as a post-processing step rather than	Nathan Poon	4/22/2025	5/1/2025	5/1/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	5	Risk Methodology & Assessment	5.3.2
137	OEIS	005	OEIS_005	9	No	OEIS_005_Q9	Regarding Top-Risk Transmission Circuits Table 5-5 (p. 103 and pp. 770-773, PG&E's 2026-2028 Base WMP) shows only distribution-level circuits. a. Provide similar tables to Table 5-5, Table 6-1, and Table 6-4 for the top-risk transmission-level circuit segments based on WTRM v2 output. b. Provide the total overall utility risk score for transmission-level circuits.	a. Transmission does not have circuit segments. However, we can provide circuits/line level risks. Please note that prioritization of transmission controls and mitigations may use additional factors in addition to wildfire risk. Note that PG&E currently does not evaluate transmission related EPSS risk (Outage Program Risk score) Note that PG&E currently does not evaluate transmission related EPSS risk (Outage Program Risk score) Note that post mitigation wildfire risk scores for transmission are limited to WMP hardening targets and are listed as part of GH-06 and GH-11 in the 2026-2028 WMP Table 8-1. Additional activities may be included in 2027 and 2028, pending development in 2026. PG&E inspects the highest wildfire risk structures on an annual basis. Wildfire risk is calculated annually to reflect completed and newly identified work. b. Based on the 2026-2028 WMP Bowtie Risk Models, the overall transmission utility risk is estimated at $2,806M. Currently, PG&E does not evaluate transmission related EPSS risk	Nathan Poon	4/22/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_005.zip	0	No	5	Risk Methodology & Assessment	5.5.2
138	SPD	003	SPD_003	1	No	SPD_003_Q1	On page 186 of PG&E's 2026-2208 WMP, PG&E mentions the Line Elimination Incentive Plan. a. Describe the plan, including when it would be used. b. Page 183 shows the decision tree with the LEIP screening process – describe the screening process and provide the criteria for evaluation of LEIP, including an example of when the LEIP mitigation would be chosen versus when it would not be chosen. c. What is the average cost of LEIP per customer and what is the expected future cost per customer? i. What is the average cost per circuit mile? d. Why is this not included as a WMP initiative considering it is in the decision tree? e. How many customers are PG&E targeting for this plan over the course of the 2026-2028 Wildfire Mitigation Plan? f. How many customers did the LEIP (or a similar customer buyout programs) remove from the PG&E's system in each year from 2017 through 2024, and is expected to remove in 2025? g. List out options available to customers that do not wish to participate in LEIP. i. If there are no options, explain why? h. How does LEIP relate to line removal as defined GH-12? i. What is the cost-benefit ratio of the LEIP program? Provide a workpaper that demonstrates how the ratio was calculated.	This response contains confidential material provided pursuan to the accompanying confidential information.	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1
139	SPD	003	SPD_003	2	No	SPD_003_Q2	PG&E's Figure-6.1.3.2-1 states EPSS combined with PSPS removes 81.7% (16,012/19,578=81.7%) wildfire risk. Separately, PG&E's response in the first figure in part a of "WMP-Discovery2026-2028_DR_OEIS_001-Q023" implies that PSPS/EPSS is closer to 90% effective at mitigating wildfire risk. Table PG&E-6.1.3-1 also states PSPS reduces 84% of the wildfire risk. Why is there an apparently discrepancy between the response of Part a of "WMP-Discovery2026-2028_DR_OEIS_001-Q023" and Table PG&E-6.1.3-1 compared to PG&E's Figure-6.1.3.2-1?	The wildfire risk reduction values in WMP-Discovery2026- 2028_DR_OEIS_001-Q023 are based on applying effectiveness values for EPSS and PSPS to the circuit segments where those mitigations are implemented in the WDRM v4. The table below shows values from the enterprise WLDFR risk bowtie and shows how the 81.7% and 84% numbers are calculated. Please note that the case and the tranche are different for the 81.7% and 84% effectiveness values. PG&E moved from using the enterprise model in the WMP to the WDRM tool because it was better suited to address granularity and location of work. The two methodologies are not 100% aligned, but it explains the differences in results.	Henry Sweat	4/23/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3.2
140	SPD	003	SPD_003	3	No	SPD_003_Q3	In Figure 6-1, what are the projected mileages for each resiliency mitigation for each year through 2033? a. How were the projected mileages, especially those beyond 2028, for the resiliency mitigations established?	Figure 6-1 includes projected mileage beyond 2028 for two mitigation programs only: Overhead Hardening and Undergrounding. Projected miles include 100 miles of Overhead Hardening and 400 Miles of Undergrounding. a. The projected mileage estimates beyond 2028 were established by looking at historical performance as well as 2026-2028 planned mileage for those resiliency mitigations and assuming a relatively flat unit execution across future years. The high-level workplans are not based on scoped projects, but rather a 1-n WDRM v4 wildfire risk ranked list of circuit segments. Mileage values as well as targeted locations will be subject to change in future years due to concurrent and ongoing regulatory filings such as the GRC and the Electric Undergrounding Plan (EUP). Further detail surrounding mitigation selection criteria are described within section 8 of the WMP.	Henry Sweat	4/23/2025	5/2/2025	5/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.2.1
141	SPD	003	SPD_003	4	No	SPD_003_Q4	For Figure 6-1 and the figures in Part a of "WMP-Discovery2026-2028_DR_OEIS_001-Q023," what are the actual percentage values for each year? a. What are the baseline 2023 values for Wildfire Risk, PSPS Risk and EPSS Risk? b. Provide the three figures in Part a of "WMP-Discovery2026-2028_DR_OEIS_001-Q023," using absolute values of monetized risk in dollar values. c. What is the assumed risk reduction from operational mitigations for each year for wildfire risk (the first figure in the response to part (a) of "WMP-Discovery2026-2028_DR_OEIS_001-Q023,")?	The actual percentages of each risk and mitigation from Figure 6-1 has been extracted in to the following table. a. The baseline risk values, in dollarized figures are listed in the below table. b. Figure 6-1 is regenerated based on dollars in the following 3 figures c. The following figure assumes that the operational mitigations and their effects on wildfire risk without operational mitigations are to be presented in millarized risk, similar to the answers in part b.	Henry Sweat	4/23/2025	5/2/2025	5/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	6	Wildfire Mitigation Strategy Development	6.2.1
142	SPD	003	SPD_003	5	No	SPD_003_Q5	Compute the as-built conversion factor for projects in 2023 and 2024 between overhead lines to underground lines. Provide an explanation of the computation. See the computation provided in PG&E's response to "WMP-Discovery2023_DR_SPD_005-Q006" for an example.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_003-Q005Atch01.xlsx". This includes undergrounding subprojects 100% completed in 2023 and 2024. Note, this is the same subset of data provided in response to "WMP-Discovery2026-2028_DR_TURN_003-Q004Atch01.xlsx", and with the conversion factor appended. The primary overhead miles removed and replaced by undergrounding reflect actual overhead miles removed on undergrounding subprojects, where data is available; otherwise, where data is not yet available, we used the adopted1 overhead to undergrounding conversion factor of 1 mile of overhead to 1.25 miles of undergrounding	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.2
143	SPD	003	SPD_003	6	No	SPD_003_Q6	For GH-04, provide a definition of the miles target and compare the definition to the target in the 2026-2028 WMP. For instance, is the target some combination of: "the miles of primary overhead line to be replaced by undergrounding," "the miles of overhead (primary, secondary and service) line to be replaced by undergrounding," "the miles of undergrounded primary lines to be installed" or "the miles of undergrounded (primary, secondary and service) lines to be installed." a. PG&E proposes two forms of undergrounding (underground primary, and underground all). Provide the number of miles for each undergrounding type planned for 2026, 2027, and 2028. b. Page 181 of the PGE's 2026-2028 WMP states: "While PG&E will choose either overhead hardening or undergrounding as the primary mitigation, PG&E often implements a hybrid mitigation solution that consists of both overhead hardening and undergrounding on portions of the same circuit segment." i. If a hybrid solution is implemented, how will the mileage be recorded in GH-04 and GH-12? ii. If undergrounding is the primary mitigation, but some covered conductor is installed on the project because undergrounding is infeasible for a small section of the line – how will the mileage be recorded in GH-04 and GH-12? iii. Provide the number of miles where PG&E expects a hybrid solution will be implemented and recorded in GH-04 and/or GH-12.	a. While PG&E's WMP references the effectiveness of Underground All (primary, secondary and service lines) and of Underground Primary, the undergrounding mileage commitments for GH-04 listed in table 8.1.1 for this WMP period are specifically for the undergrounding of primary distribution lines. WMP-Discovery 2026-2028_DR_SPD_003-Q006 Page 2 b. i. For any project with a combination of undergrounding and overhead hardening and/or line removal, undergrounding mileage will be recorded in GH-04 and overhead hardening and line removal mileage will be recorded in GH-12. ii. For any project with a combination of undergrounding and overhead hardening and/or line removal, undergrounding mileage will be recorded in GH-04 and overhead hardening and line removal mileage will be recorded in GH-12. iii. Please reference "WMP-Discovery2026-2028_DR_SPD_003-Q006Atch01.xlsx" for a list of all circuit segments that have been identified for undergrounding and overhead hardening and/or line removal. For 2026 work, subprojects have been scoped and the miles associated the multiple mitigation types have been included at the subproject-level. For 2027 and 2028 work, the miles associated with hybrid solutions will be determined once they are fully scoped. A summary of the miles is included in the "Summary" tab and below for reference.	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	1	No	GH-04	GH-04	GH-04
144	SPD	003	SPD_003	7	No	SPD_003_Q7	Explain how PG&E calculates the risk reduced when there is a combination of undergrounding and covered conductor on a particular circuit segment. Clarify if there is a difference in how the risk reduction is calculated if a primary covered conductor project, primary undergrounding project or a hybrid project is chosen.	Risk reduction is based on the unique effectiveness values of each mitigation applied against the proportion of a circuit segment addressed by the corresponding mitigation. For example, for a segment with a wildfire mitigation effectiveness value of 67% for OH and 98% for UG, the risk reduction for that circuit segment containing 10 risk points prior to mitigation would be: 1. For OH: Risk Reduction = 10 risk points x 67% = 6.7 risk points 2. For UG: Risk Reduction = 10 risk points x 98% = 9.8 risk points 3. For a Hybrid Project (half of the segment mileage mitigated by OH and half mitigated by UG): Risk Reduction = (5 risk points x 67%) + (5 risk points x 98%) = 8.25 risk points This is a simplified example of the calculation detailed in PG&E's Advice Letter 7150-E-A	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.2
145	SPD	003	SPD_003	8	No	SPD_003_Q8	Provide additional explanation on the discussion in section 8.2.2 under the heading, "Impacts on Likelihood and Consequence of Program Events." The questions below are posed under the assumption that the lines would not be subject to PSPS/EPSS conditions due to overhead lines upstream or downstream. a. For circuit segments where there are covered conductor miles interspersed among undergrounded miles, explain how PG&E will plan to use PSPS and EPSS for these circuit segments. i. Is there a threshold for the amount of covered conductor? (i.e. if there is a 5-mile undergrounded circuit segment that has only 100 feet of covered conductor and that circuit segment is subjected to PSPS conditions, would a PSPS event be triggered?) b. For undergrounded segments from the 2023-2025 WMP where only the primary conductor was undergrounded, explain how PG&E will use of PSPS and EPSS.	Regarding PSPS, see "Impacts on Likelihood and Consequence of Program Events" in section 8.2.1 of the 2026-2028 WMP which further explains overhead and underground inclusion for PSPS events at a high level. There is no threshold for the amount of covered conductor to be exempt from PSPS. In the event primary conductor segments have been undergrounded, replacing all overhead primary exposure in High Fire Risk Areas (HFRA) and EPSS buffer areas, a circuit may be removed from EPSS program scope. If only a portion of a circuit is undergrounded, the portions of the overhead primary remaining in HFRA or EPSS buffer areas will continue to be protected by EPSS capable devices when criteria are met.	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.2
146	SPD	003	SPD_003	9	No	SPD_003_Q9	The system target for GH-04 is 370 miles for 2026 whereas PG&E previously forecasted a target of 440 miles. a. Provide the breakdown for miles related to Butte County Rebuild in 2026. b. The WMP states the reduction is because the PG&E forecasts being able to achieve the risk reduction in the GRC with less miles than previously forecasted. Provide a high-level justification for this number. The justification should be desegregated by the amount of risk reduced per year by mitigation and by the risk model. c. Provide the risk reduced in part (b) but calculate the risk reduced based on the risk calculated in WDRM v4. d. In Advice Letter 7312-E submitted on July 1, 2024, PG&E presented its System Hardening Accountability Report. In the Baseline_Risk_Miles spreadsheet of Attachment B, PG&E forecasted 53.5 WDRM v2 miles and 575.1 WDRM v3 miles of hardening to be completed in 2026. Do these numbers account for the changed forecast in GH-04? i. If so, please provide how many WDRM v2 miles of undergrounding and how many WDRM v3 miles of undergrounding PG&E now forecasts as being completed in 2026 in order to satisfy the risk reduction target adopted in OP 22 of D.23-11-069. ii. If not, provide the new forecast of WDRM v2 miles and WDRM v3 miles of hardening to be completed in 2026. Also provide how much of the updated forecast of WDRM v2 miles and WDRM v3 miles of hardening that PG&E forecasts would be undergrounding to be completed in 2026.	a. As described in response to WMP-Discovery2026-2028_DR_OEIS_001-Q019, the GH-04 Undergrounding target of 370 reflects PG&E's forecast to complete approximately 10 miles of undergrounding as part of the Butte Community Rebuild effort in 2026. b. PG&E reduced the planned GH-04 mileage for 2026 based on the risk reduction achieved in 2023-2024 and forecasted for completion in 2025 in order to stay in compliance with the 2023 GRC risk reduction requirements. Please see Table 1 below with the 2023-2026 risk reduction achieved and forecasted (as of February 24, 2025) in accordance with PG&E Advice 7130 E-A, approved by the CPUC on May 30, 2024. Table 2 shows that the miles planned each year by mitigation type, which exceeds the four-year (2023-2026) 18% cumulative risk reduction target of the 2023 GRC. Note, the risk and miles included in the tables below exclude Community Rebuild work given it is not part of the 2023-2026 GRC System Hardening program. c. The estimated WDRM v4 risk values provided in this response represent the risk metrics for circuit segments sharing the same name as the legacy circuit segments on which each project was planned. The risk values from WDRM v4 may be different than risk values from legacy models. Actual circuit segmentation varies over time and there is no guarantee that a project originally targeted on a circuit segment will still lie within the bounds of that same circuit segment's namesake in the updated risk model. It is also possible the name of the circuit segment stays the same, even though the parameters of the circuit segment changes (e.g. segment splits into two upon installation of new protective devices, replacement of a protective device changes the name of the segment, customer load transfers take place). In some cases, the circuit segment's namesake may be entirely absent from the updated risk model. Acknowledging the aforementioned limitations of this analysis, please see a summary of estimated risk reduced by year and by mitigation type in the Table 3 below: d. The GRC Advice Letter 7312-E (SHAR) did not consider PG&E's 2026 undergrounding WMP mileage forecast being reduced from 440 miles to 370 miles in one year. PG&E is prepping the System Hardening work portfolio to meet the	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	GH-04	GH-04	GH-04

147	SPD	003	SPD_003	10	No	SPD_003_Q10	In the 2024 QDR spatial data set, the polylines GH-01 and GH-04 are frequently overlaid on each other. Explain how to identify how many miles were undergrounded, covered conductored or removed, as well as how to understand the as-built configuration of the system. Additionally, answer the following: a. SPD assumed the feature in the data set which states "ugfeet" and "ccfeet" would distinguish between undergrounding and covered conductor, but is finding that these numbers do not add up to the reported completed miles in a given WMP year. What is "ugfeet" and "ccfeet" and why do they not add up to the completed miles? b. SPD found the length of the polylines added up to 291 miles for GH-01 (Status=Complete, Completion Data = All), but the reported actual number of miles completed in the tabular QDR is 348. Explain why the length of the polylines is not equal to the 348 miles. c. Some GH-01 data is in points instead of polylines – explain why polylines are not used since there is either a portion of a line being removed, cover conductored or undergrounded.	The DescriptionOfWork data field can be used to see the current planned removal feet, underground feet, and covered feet, which can then be converted into miles for each project. Please note, this is not a required field by Energy Safety, but rather an additional detail PG&E provides to help the user get additional information related to the work performed. PG&E started providing the feet and activity type to the DescriptionOfWork field since the Q2 2024 submission. As PG&E indicates in our metadata, as well as in previous data request responses to the CPUC and Energy Safety, data in the Spatial QDR represents a snapshot in time only. The data evolves as more work is performed against the projects. The quarterly reports are interim draft work products used to provide visibility to work performed. They are not final versions for initiative and should not be used for verification. Project work expands beyond a single quarter so the data about each project evolves. For complete details of work performed including schematics, job packages should be used and reviewed. As-built configuration of the system PG&E's Geographic Information System (GIS), Electric Transmission GIS, and Electric Distribution GIS mapping systems represent assets associated with construction work when that work has been received and mapped by electric GIS mapping technicians. Construction jobs that are partially complete or fully complete may be mapped in the GIS systems once construction "as-built" information has been submitted and accepted by the GIS Mapping Department. Prior to being received by the GIS Mapping Department, completed job packages must undergo several processing steps including clerical review, processing, and paperwork scanning. Sometimes, completed job packages require additional information from the field or post-estimating work. The processing steps take time to complete. Until a project is completed and mapped, detailed information remains in the design systems and paper job packages. When spatial quarterly reports are created, there will be varying levels of mapping available for each project. PG&E provides spatial data to the extent each job has been mapped. Please note, when a job status changes to "complete" in the GIS Data Standard submissions the GIS Mapping Department may still be undergoing processing steps to reflect the completed job package in GIS mapping systems. As such, construction field complete, does not mean mapping complete. a. As stated above, the DescriptionOfWork data field can be used to see the current	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	GH-04	GH-04	GH-04
148	SPD	003	SPD_003	11	No	SPD_003_Q11	Provide an update for full 2024 year data to "WMP-Discovery2023-2025_DR_SPD_019-Q012.pdf" and the supplemental response.	For the year 2024, PG&E confirms the average number of strike trees per mile of lines inspected on Focused Tree Inspection (FTI) prior to removal is 785.84. Please see the calculation below for how this number was determined: For the year 2024, PG&E confirms the average number of strike trees per mile of lines inspected after removals is 748.41. Please see the calculation below for how this number was determined: Please see the following data for the requested information for the year 2024: • Number of trees prescribed to be worked: 71,284 trees • Number of total trees worked: 56,342 trees • Number of total trees prescribed for removal: 58,689 trees • Number of total trees removed: 46,237 trees • Number of miles inspected: 1,588.1 miles • Number of strike trees per mile of lines inspected before removals: 785.84 trees/mile • Number of strike trees per mile after removals: 748.41 trees/mile • Number of trees inspected: 1,232,276 trees	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	9	Vegetation Management and Inspections	9
149	SPD	003	SPD_003	12	No	SPD_003_Q12	Provide the data in Tables 1 through 3 for each of PG&E's 2023-2025 WMP planned Vegetation Management Programs and PG&E's 2026-2028 WMP Programs. There should be one spreadsheet for each of the Vegetation Management Programs listed in Tables 4 and 5. a. Discuss how PG&E's evaluation of Focused Tree Inspection, Tree Removal Inventory, and Vegetation Management for Operational Mitigations for consolidation into its distribution inspections may change the forecasts in Table 3. For the 2023-2025 WMPs, SPD expects the individual programs to be reported on to include: Table 4: List of Vegetation Management Programs 2023-2025 For the 2026-2028 WMPs, SPD expects the individual programs to be reported on to include: Table 5: List of Vegetation Management Programs 2026-2028	Please refer to "WMP-Discovery2026-2028_DR_SPD_003-Q012Atch01.xlsx" for the requested tables for Vegetation Management programs. Please note the following: • "Forecasted to be worked" includes an estimate of how many trees may be either pruned or removed as part of that program. "Number of total trees removed" is a forecast. Vegetation Management does not forecast "total number of trees prescribed for removal" for any programs. • Transmission vegetation management programs do not forecast number of total trees removed. The extent of tree work will be prescribed as needed based on the findings during the programs' inspection cycles. • Total mileage is not applicable to the Tree Removal Inventory (TRI) and Vegetation Management for Operational Mitigations (VMOM) programs. TRI is intended to work down the risk associated with the Enhanced Vegetation Management (EVM) trees that were remaining from the program over a period of years. • Transmission Integrated Vegetation Management (TIVM) is not measured in terms of prescribed trees. Please note the unit of measure for TIVM inspections is acres. Where applicable, acres inspected have been provided in lieu of miles inspected. a. At this time, PG&E does not expect further changes to its forecasts in Table 3 due to consolidation of Focused Tree Inspection, Tree Removal Inventory, and Vegetation Management for Operational Mitigations on its distribution programs.	Henry Sweat	4/23/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	1	No	9	Vegetation Management and Inspections	9
150	SPD	003	SPD_003	13	No	SPD_003_Q13	Complete the Tables 1 through 3 at the systemwide and HFTD scale for all of PG&E's Vegetation Management work (ie, the total number of trees removed systemwide and separately the total number of trees removed in the HFTD).	Please refer to "WMP-Discovery2026-2028_DR_SPD_003-Q012Atch01.xlsx" for the requested tables for Vegetation Management programs systemwide. Please refer to "WMP-Discovery2026-2028_DR_SPD_003-Q013Atch01.xlsx" for the requested tables for Vegetation Management programs in HFTD only. Please note the following: • "Forecasted to be worked" includes an estimate of how many trees may be either pruned or removed as part of that program. "Number of total trees removed" is a forecast. Vegetation Management does not forecast "total number of trees prescribed for removal" for any programs. • Transmission vegetation management programs do not forecast number of total trees removed. • Total mileage is not applicable to the Tree Removal Inventory (TRI) and Vegetation Management for Operational Mitigations (VMOM) programs. TRI is intended to work down the risk associated with the Enhanced Vegetation Management (EVM) trees that were remaining from the program over a period of years. • Transmission Integrated Vegetation Management (TIVM) is not measured in terms of prescribed trees. Please note the unit of measure for TIVM inspections is acres. Where applicable, acres inspected have been provided in lieu of miles inspected. • Distribution and Transmission Second Patrol/Hazard Patrol miles to be inspected in HFTD may be lower than overall program miles to be inspected as the programs include HFRA. • ETI and VMOM do not forecast units to be inspected or worked in HFTD. • TIVM did not track acres worked in HFTD in 2023. • For 2025-2028 data, PG&E does not have a breakdown by HFTD/non-HFTD of forecasted trees to be worked and/or removed for Distribution Routine and	Henry Sweat	4/23/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	1	No	9	Vegetation Management and Inspections	9
151	SPD	003	SPD_003	14	No	SPD_003_Q14	For each vegetation management program in the 2026-2028 WMP, specify if the Quality Assurance and Quality Controls assessments include verification of the height and distance to the conductor of each strike vegetation point specified for removal, and each vegetation strike point noted as an inventory tree.	Quality Assurance and Quality Controls assessments do NOT include verification of the height and distance to the conductor of each strike vegetation point specified for removal, and each vegetation strike point noted as an inventory tree.	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	9	Vegetation Management and Inspections	9
152	SPD	003	SPD_003	15	No	SPD_003_Q15	Provide PG&E's latest estimate for the number of strike trees in PG&E's HFTD with an explanation of how this estimate was obtained. Discuss PG&E's confidence in the estimate.	PG&E currently estimates approximately 5.6 million trees that have overhead electric system strike potential within HFTD only. This estimate is based on 2019 (distribution) and 2023 (transmission) aerial LiDAR data collection. Due to known limitations of aerial LiDAR associated with tree counts, especially in closed canopy environments, this is likely an underestimation. Due to these factors our confidence level is low.	Henry Sweat	4/23/2025	4/29/2025	4/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_003.zip	0	No	9	Vegetation Management and Inspections	9
153	MGRA	005	MGRA_005	1	No	MGRA_005_Q1	Follow-ups to Data Request Responses: WMP-Discovery 2026-2028_DR_OEIS_001-Q022 MGRA-5-1 For the three technologies listed in PG&E's response to the OEIS data request EFD, DFA, Gridscope), please provide a per-year estimate of the deployment of these devices for 2026, 2027, and 2028 in the HFRA+HFTD: a. The number of devices to be deployed. b. The miles of overhead conductor to be monitored by these technologies in the HFTD in miles. c. The fractional coverage of the overhead conductor system. d. The estimated cumulative risk reduction due to the deployment of that technology.	a. PG&E plans to deploy 180 EFD devices/year and 15 DFA devices/year during 2026-2028 WMP period. PG&E is still in the deployment strategy development phase for Gridscope devices. b. EFD devices planned for deployment in 2026 will monitor approximately 467 primary overhead miles of HFTD conductor. DFA devices planned for deployment in 2026 will monitor approximately 1,616 primary overhead miles of HFTD conductor. Deployment results in 2027 and 2028 are expected to be comparable to 2026. c. The approximately 467 miles of primary overhead conductor HFTD miles on the circuits planned for deployment of EFD devices in 2026 account for 1.9% of all primary overhead conductor HFTD miles in PG&E service territory. The 1,616 miles of primary overhead conductor HFTD miles on the circuits planned for deployment of DFA devices in 2026 account for 6.4% of all primary overhead conductor HFTD miles in PG&E service territory. Deployments results in 2027 and 2028 are expected to be comparable to 2026. WMP-Discovery 2026-2028_DR_MGRA_005-Q001 Page 2 d. Like asset inspections, sensors provide eyes-on-risk, detecting conditions that could create a wildfire or public safety risk. Actual risk reduction is accomplished when identified conditions are addressed by maintenance. • EFD – 2.52% EOR per year. • DFA – 6.56% EOR per year.	Joseph Mitchell	4/25/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_005.zip	0	No	10	Situational Awareness and Forecasting	10.4/10.31
154	MGRA	005	MGRA_005	2	No	MGRA_005_Q2	Suppression MGRA-5-2 During a meeting of the Risk Mitigation Working Group, I recall one of the PG&E team stating that they had looked at the CalFire ignition database to determine whether weather local conditions affected the probability of successful initial attack. a. Did PG&E ever perform an analysis similar to that described? a) If the answer is yes, please provide the results. b. Is the PG&E FPI model available through a public interface? i.e. If a latitude, longitude, and time is provided can a corresponding FPI value be retrieved? c. If the answer to b) is no, what is the approximate volume of PG&E's FPI history, could it potentially be exported, and how much time (days) and effort (personhours) would it require? d. As PG&E's FPI algorithm has changed over time, has PG&E segregated historical periods with different FPI approaches? Or has it re-run its history with the most recent FPI version?	a. PG&E did not perform a study that evaluated if local weather conditions affected the probability of successful initial attack. We did perform a study briefly discussed during a recent Risk Mitigation Working Group meeting that evaluated classes of the FPI model. This did show that most buildings damaged/destroyed occur during the first 24 hours from the initial fire detection. See the table below. b. While the PG&E FPI is not available through a public interface, daily FPI 5.0 ratings by Fire Index Area (FIA) back to 2008 are provided in "WMP-Discovery2026-2028_DR_MGRA_005-Q002Atch01." This allows for a daily FPI 5.0 FIA rating to be retrieved with a latitude, longitude and date. c. N/A d. PG&E both retains the FPI ratings that were forecast using the operational FPI model at the time and re-runs a FPI historical dataset via hindcast (using the weather/fuels climatology) using the latest model in production. See attachment associated with part B.	Joseph Mitchell	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_005.zip	1	No	Appendix D	Appendix D: Areas of Continued Improvement	ACI PG&E-23B-03
155	MGRA	005	MGRA_005	3	No	MGRA_005_Q3	Covered Conductor MGRA-5-3 In Table PG&E-8.2.1-4: COVERED CONDUCTOR AND UNDERGOUNDING IMPACTS ON THE LIKELIHOOD OF IGNTION, PG&E'S analysis of Wire-to-Wire contact lists the effectiveness of Covered Conductor as medium it reducing this risk source, whereas other parties rank this as a high effectiveness. a. Please justify why wire-to-wire contact is only reduced to a medium outage prevention. b. Please provide examples in which wire to wire contact between covered conductors resulted in an outage and order what conditions	a. The referenced line item in table PG&E-8.2.1-4 was mislabeled as wire-to-wire contact. This driver should have been labeled: Equipment / facility failure – Secondary damage or failure. This update will be reflected in a forthcoming non substantive errata targeted for May 16, 2025. PG&E's qualitative assessment of the effectiveness of covered conductor for wire-to-wire contact is rated as Very High. b. PG&E does not track covered conductor outages vs bare wire outages and does not have examples of wire-to-wire contact readily available.	Joseph Mitchell	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_005.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
156	MGRA	005	MGRA_005	4	No	MGRA_005_Q4	Advanced Technology MGRA-5-4 Please direct us to or provide the technical details of Gridscope a. Please provide the differences in action and function and purpose between Gridscope and EFD.	Gridscope is a distribuaid reactive real time sensor technology with sensors on approximately every other pole that detect conditions where equipment has failed including downed conductors, broken or leaning poles, vegetation, animal or foreign object in conductors, and loss of power. EFD is a distributed proactive sensor technology with sensors every few miles that detect equipment emerging issues, prior to failure, deteriorating conductors, connections, tie wires, insulators, degraded service transformers, and close vegetation proximity	Joseph Mitchell	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_005.zip	0	No	10	Situational Awareness and Forecasting	10.3.1

157	MGRA	005	MGRA_005	5	No	MGRA_005_Q5	Weather MGRA-5-5 Provide a list of the 571 worst weather days, along with a. geographic limits associated with the designation (polygon, counties, etc.), b. FPI, c. Diablo wind event classifier, d. associated catastrophic wildfire e. any other notes or comments added by the meteorological team	a. The geographic limit associated with the worst weather days is based on the geographic domain of the PG&E service territory. b. Daily FPI 5.0 ratings by Fire Index Area (FIA) since 2008 are provided for the worst weather days at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch01.xlsx." c. The quantitative Diablo wind event classifier is provided for the worst weather days through 2019 using an analysis described above. For 2020, we leveraged our "North East" weather signal classification, which is a qualitative designation made by an operational meteorologist. "North East" days are intended to capture Diablo wind events. The Diablo wind event classifier is created based on the POMMS climatology at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch02.xlsx." The Diablo Event criteria is defined here as dates where a wind direction between 350 and 112.5 degrees, windspeeds of 20 mph or greater, relative humidity of 25% or less over at least 225 or more POMMS 2x2km grid cells for at least 6 consecutive hours. These values were determined from a review of academic literature available. d. Catastrophic wildfires, defined here as those with a final fire size over 5,000 acres since 2012, are provided for the worst weather days at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch03.xlsx." WMP-Discovery 2026-2028_DR_MGRA_005-Q005 Page 2 e. N/A	Joseph Mitchell	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_005.zip	3	No	Appendix D	Appendix D: Areas of Continued Improvement	ACI PG&E-23B-03
158	OEIS	006	OEIS_006	1	No	OEIS_006_Q1	Regarding PSPS Impact In response to data request OEIS-P-WMP_2025-PG&E-003, Question 3, PG&E states that "the criteria for determining whether a circuit protection zone is affected by PSPS is binary and PG&E considers the distinction of whether there is PSPS impact or not." Provide the following based on the CPZs in which there is PSPS impact: a. The percentage by total circuit mileage b. The associated total circuit mileage impacted c. The percentage by total number of CPZs in the HFRA d. The associated number of CPZs impacted	a. The geographic limit associated with the worst weather days is based on the geographic domain of the PG&E service territory. b. Daily FPI 5.0 ratings by Fire Index Area (FIA) since 2008 are provided for the worst weather days at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch01.xlsx." c. The quantitative Diablo wind event classifier is provided for the worst weather days through 2019 using an analysis described above. For 2020, we leveraged our "North East" weather signal classification, which is a qualitative designation made by an operational meteorologist. "North East" days are intended to capture Diablo wind events. The Diablo wind event classifier is created based on the POMMS climatology at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch02.xlsx." The Diablo Event criteria is defined here as dates where a wind direction between 350 and 112.5 degrees, windspeeds of 20 mph or greater, relative humidity of 25% or less over at least 225 or more POMMS 2x2km grid cells for at least 6 consecutive hours. These values were determined from a review of academic literature available. d. Catastrophic wildfires, defined here as those with a final fire size over 5,000 acres since 2012, are provided for the worst weather days at "WMP-Discovery2026-2028_DR_MGRA_005-Q005Atch03.xlsx." WMP-Discovery 2026-2028_DR_MGRA_005-Q005 Page 2 e. N/A	Nathan Poon	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_006.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
159	OEIS	006	OEIS_006	2	No	OEIS_006_Q2	Regarding the Wildfire Risk Bow Tie Figure PG&E-5.1.1-2 shows the risk bow tie for wildfire risk on page 47 of the 2026-2028 Base WMP. a. Provide two updated versions of this figure for distribution-only risk and transmission-only risk. b. The figure shows that equipment/facility failure and vegetation contact make up 49% and 23%, respectively, of the risk events per year based on frequency. However, it shows that both make up 39% of the risk. i. Provide the timeframe used to determine the number of events per year within the figure. ii. Provide a definition for what qualifies as an "event" within the figure (i.e. outage, ignition). iii. Given the lower likelihood based on frequency of risk event, provide a detailed description of the factors that led to vegetation contact having a similar risk percentage to equipment/facility failures (i.e., proportionally higher consequence or p/(e) after accounting for the lower frequency).	a. Please see the figures below for the distribution- and transmission-only versions of Figure PG&E-5.1.1-2. Please note that the model used to generate Figure PG&E 5.1.1-2 includes 5 tranches of data (Distribution-HFRA, Transmission-HFRA, Substation-HFRA, Underground-HFRA, and non-HFRA). These new bowties only include the distribution and transmission tranches (including disaggregated distribution and transmission portions of the non-HFRA tranche) and exclude the underground and substation tranches. As a result, the sum of events shown in the provided distribution and transmission figures in this response does not equal the aggregate sum of events in the model shown in Figure PG&E-5.1.1-2. WMP-Discovery 2026-2028_DR_OEIS_006-Q002 Page 2 Also note that PG&E determined that the "Exposure" value presented in Figure PG&E-5.1.1-2 in its 2026-2028 WMP inadvertently double-counted miles. The correct aggregated Exposure value is 236,744 miles as of the date of the WMP filing. Please note that, for the reasons explained above, the sum of the distribution and transmission exposures in the figures provided in this response does not equal this aggregate exposure. b. i. The timeframe used to determine the number of events per year within the figure was from 2015-2024. ii. The definition of "event" within the figure is defined as a PG&E-caused ignition. iii. In general, areas with high probability of ignition from vegetation related branch and trunk failures tend to be located in areas of high consequence, particularly foothills and lower mountain regions. Ignition probabilities for equipment failures tend to be more dispersed between areas of low and high consequence. The clustering of high vegetation ignition probabilities in high consequence areas results in a higher average effective consequence and, therefore, higher risk for vegetation related failures. c.	Nathan Poon	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_006.zip	0	No	5	Risk Methodology & Assessment	5.1.1
160	OEIS	006	OEIS_006	3	No	OEIS_006_Q3	Regarding Weather Model Validation a. Page 57 of the 2026-2028 Base WMP states that "The models use PSPS guidance criteria to perform a back-cast using our 30+ year climatological dataset." i. Provide documentation describing this climatological dataset ii. Provide a list of the variables contained within the dataset iii. Provide a detailed description of the validation performed on the dataset and results of the validation, as well as documentation similar in technical detail to the operational weather modeling presented in (https://doi.org/10.3390/atmos15101244). b. Table 5-1 on page 82 of the 2026-2028 Base WMP includes a description of FPI and IPW models, stating that the weather model forecasts are "skillful and well validated." i. Provide documentation describing these weather model forecasts ii. Provide a list of variables that these weather models forecast iii. Provide a detailed description of the validation performed on the weather model forecasts and results of the validation, as well as documentation similar in technical detail to the operational weather modeling presented in https://doi.org/10.3390/atmos15101244.	a. i. Documentation that describes the climatological dataset can be found at the sources below. 1. The POMMS 3.0 Configuration Report provided as "WMP Discovery2026-2028_DR_OEIS_006-Q003Atch01.pdf." 2. Section 8.6 of the PSPS Model White Paper provided as "WMP Discovery2026-2028_DR_OEIS_006-Q003Atch02.pdf." WMP-Discovery 2026-2028_DR_OEIS_006-Q003 Page 2 3. For documentation on the Weather Research and Forecasting model, please see: https://www.mmm.ucar.edu/models/wrf. The WRF model can be used in forecast mode or utilized to create historical (climatological) data using global weather model forcing or climatological reanalyzes, respectively. 4. For information on the Climate Forecast System Version 2 (CFSv2) Operational reanalysis, please reference this site: https://www.ncei.noaa.gov/access/metadata/landing page/bin/iso?id=gov.noaa.ncdc:C00878 5. For information on the Climate Forecast System Reanalysis (CFSR) please see this location. https://www.ncei.noaa.gov/access/metadata/landing page/bin/iso?id=gov.noaa.ncdc:C00765 ii. The list of variables available at the surface or near surface can be found in "WMP-Discovery2026-2028_DR_OEIS_006-Q003Atch03.txt." The list of variables that can be extracted from the 3D climatology and forecast dataset can be found in "WMP-Discovery2026-2028_DR_OEIS_006-Q003Atch04.txt." iii. Please see "WMP-Discovery2026-2028_DR_OEIS_006-Q003Atch01.pdf" and "WMP-Discovery2026-2028_DR_OEIS_006-Q003Atch02.pdf." b. i. Documentation of the FPI and IPW models can be found in sections 3 and 4, respectively, of "WMP-Discovery2026-2028_DR_OEIS_006-Q003Atch02.pdf." ii. Please see response to B.i. iii. Please see response to B.i.	Nathan Poon	4/25/2025	4/30/2025	4/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_006.zip	4	No	Appendix D	Appendix D: Areas of Continued Improvement	ACI PG&E-23B-03
161	OEIS	006	OEIS_006	4	No	OEIS_006_Q4	Regarding EPSS Risk On page 65 of the 2026-2028 Base WMP, PG&E states that the EPSS outage risk model "considers the fraction of failures that turn into sustained outages when EPSS is not enabled so that the baseline outage risk can be subtracted from the EPSS enabled risk." a. Provide the number of outages that are within that fraction, including the number of customer minutes interrupted associated with those outages. b. Provide the number of outages used prior to the removal of baseline outages discussed in part (a), including the associated customer minutes interrupted.	a. When EPSS is not enabled, roughly 85-90% of the outages are sustained and 10-15% are momentary, due to the installed reclosers. Momentary outages need to be excluded from the calculation of baseline risk as they do not cause additional customer minutes of interruption. The EPSS Outage Risk model does not use historical customer minutes interrupted within the calculation methodology. Therefore, customer minutes cannot be provided as part of the response. b. For outages that occurred in HFTD/HFRA during wildfire season, approximately 120,000 outages were sustained out of approximately 136,000 total failures in the historical records dating back to 2008. Please see subpart (a) above for why customer minutes cannot be provided as part of the response.	Nathan Poon	4/25/2025	5/14/2025	5/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_006.zip	0	No	Appendix D	Appendix D: Areas of Continued Improvement	ACI PG&E-25U-06
162	OEIS	007	OEIS_007	1	No	OEIS_007_Q1	Regarding Distribution Hazard Patrol Page 367 of the 2026-2028 Base WMP states: "PG&E is transitioning the Distribution Hazard Patrol Program scope from focusing on all HFTD and HFRA locations to focusing on areas categorized by risk, which may represent a subset of HFTD miles." PG&E includes the following figure describing inspection methods used within the HFTD/HFRA: a. Provide footnotes (1), (2), and (3) for the figure above. b. Provide the number of vegetation-caused ignitions that have occurred on the miles identified in the Inspection Selection Matrix above for 2020-2024. Provide a value for each combination of Consequence and Wildfire Risk as shown in the Inspection Selection Matrix. Provide this data in tables with the same x- and y-axes as the Inspection Selection Matrix (see example below). Provide a separate table for each year 2019-2024 and a summary table with 5-year totals (six tables total). c. Provide the number of vegetation-caused outages that have occurred on the miles identified in the Inspection Selection Matrix above for 2020-2024. Provide a value for each combination of Consequence and Wildfire Risk as shown in the Inspection Selection Matrix. Provide this data in tables with the same x- and y-axes as the Inspection Selection Matrix (see example above). Provide a separate table for each year 2019-2024 and a summary table with 5-year totals (six tables total). d. Provide a GIS file showing the miles identified in the Inspection Selection Matrix above color-coded to show the circuits that will be inspected by "Routine" only, by "Routine/Hazard" only, and by "Routine/Hazard/Remote Sensing." Include the following attributes: I. CircuitID (as defined by the Energy Safety Data Guidelines) ii. CircuitName (as defined by the Energy Safety Data Guidelines) iii. Inspection category (i.e., Routine only, Routine/Hazard only, and Routine/Hazard/Remote Sensing) iv. Consequence category (i.e., Low, Medium, High, Severe, and Extreme) v. Wildfire Risk category (i.e., Low, Medium, High, Severe, and Extreme) e. Explain PG&E's decision-making process for defining the Consequence categories in the Inspection Selection Matrix above. Include the Consequence score range for each category as a percentile of scores from within the HFTD and HFRA. f. Explain PG&E's decision-making process for defining the Wildfire Risk categories in the Inspection Selection Matrix above. Include the Wildfire Risk score range for each category as a percentile of scores from within the HFTD and HFRA. g. Explain PG&E's decision-making process for choosing to limit the scope of Hazard Patrol to 75.14% of its risk. Because the wildfire model is a risk decision (i.e., geography, weather, exposure, effectiveness of	a. Please see below for footnotes: WMP-Discovery 2026-2028_DR_OEIS_007-Q001 Page 3 (1) Groupings for consequence are based on the percentiles of circuit segments in the following categories: Extreme 0-1%, Severe 1-2%, High 2-10%, Medium 10-20%, Low 20-100%. (2) Groupings for wildfire risk are based on the percentiles of circuit segments in the following categories: Extreme 0-1%, Severe 1-2%, High 2-10%, Medium 10-20%, Low 20-100%. (3) "Eyes on risk" demonstrates the anticipated average "eyes on risk" value per year and may fluctuate per year depending on changes in overhead circuit mileage. b. Please see tables below for the number of vegetation-caused ignitions that have occurred on the miles identified in the Inspection Selection Matrix above for 2020-2024 c. Please see tables below for the number of vegetation-caused outages that have occurred on the miles identified in the Inspection Selection Matrix above for 2020-2024. d. See "WMP-Discovery2026-2028_DR_OEIS_007-Q001Atch01.kmz", which shows the miles identified in the Inspection Selection Matrix above. Circuits are color-coded to show those that will be inspected by "Routine" only, by "Routine/Hazard" only, and by "Routine/Hazard/Remote Sensing. Within the .kmz file are the requested attributes listed below: I. CircuitID (as defined by the Energy Safety Data Guidelines) II. CircuitName (as defined by the Energy Safety Data Guidelines) III. Inspection category (i.e., Routine only, Routine/Hazard only, and Routine/Hazard/Remote Sensing) IV. Consequence category (i.e., Low, Medium, High, Severe, and Extreme) V. Wildfire Risk category (i.e., Low, Medium, High, Severe, and Extreme) WMP-Discovery 2026-2028_DR_OEIS_007-Q001 Page 6 e. Consequence categories capture locations that if a failure occurs, these locations could result in a higher catastrophic outcome. As such, as part of defining an inspection strategy, these locations should be patrolled, independent of whether there was a high probability of vegetation failures in the past as defined from the WMP's model. In contrast, these locations could have limited vegetation, but are	Nathan Poon	4/29/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_007.zip	1	No	9	Vegetation Management and Inspections	9.2.2
163	OEIS	007	OEIS_007	2	No	OEIS_007_Q2	Regarding PG&E's Pole Clearing Program target (VM-02) On page 356 of its 2026-2028 Base WMP, PG&E sets cumulative quarterly targets for Q4 in 2026, 2027, and 2028 of 70,000 distribution poles, and states that "the target will be adjusted as determined by inspections in the previous year and may additionally be impacted by changes to facilities or based on other utility risk mitigation reasons." Table 1 of PG&E's Q4 2024 non-spatial QDR submission indicates that PG&E completed pole clearing work at 79,988 distribution poles in 2024. The delta between PG&E's targets in the 2026-2028 Base WMP and PG&E's 2024 pole clearing work is nearly 10,000 poles. a. Provide justification and details of planned activities which support that the volume of pole clearing work PG&E will execute will decrease by nearly 10,000 poles between 2024 and 2026.	The 70,000 distribution poles for 2026-2028 is a target that can and will change year after year based on various factors that can impact the VM Pole Clearing program. Factors that impacted our 2026-2028 target forecasts included system hardening, which involves changing non-exempt equipment to exempt equipment (and thus removing the PRC 4292 compliance requirement), as well as undergrounding efforts, which will result in removing the pole completely from inventory upon completion. In addition to these efforts, each year, poles are removed, added or have a change in status during the Pole Clearing program cycle, thereby affecting targets for the following year.	Nathan Poon	4/29/2025	5/2/2025	5/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_007.zip	0	No	VM-02	VM-02	VM-02
164	OEIS	007	OEIS_007	3	No	OEIS_007_Q3	Regarding Previous Overhead Assessment Job Aid Revisions a. Provide TD-2305M-JA02 Overhead Assessment revisions 9, 10, 11 and 13.	Please see the attachments below for the requested documents: • Rev. 9: "WMP-Discovery2026-2028_DR_OEIS_007-Q003Atch01CONF.pdf." • Rev. 10: "WMP-Discovery2026-2028_DR_OEIS_007-Q003Atch02CONF.pdf." • Rev. 11: "WMP-Discovery2026-2028_DR_OEIS_007-Q003Atch03CONF.pdf." • Rev. 13: "WMP-Discovery2026-2028_DR_OEIS_007-Q003Atch04CONF.pdf."	Nathan Poon	4/29/2025	5/2/2025	5/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_007.zip	4	No	8	Grid Design, Operations, and Maintenance	8.3.12.3

165	SPD	004	SPD_004	1	No	SPD_004_Q1	List the locations in the 2026-2028 Base WMP where PG&E's risk scaling function has been applied to the calculation of a value or risk, consequence, risk reduction, or CBR. a. If the values are in a figure, list the Figure number. b. If the values are in a table, list the Table Number. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence and the page number. d. SPD is aware that PG&E used a risk scaling function in its RAMP A.24-05-008. For each of a-c, describe if the risk scaling function used is the same as that described in the RAMP. If it is different, describe how the risk scaling function is different.	PG&E has identified the figures, tables, and text values below as utilizing the risk scaling function. a. The following are figures where a risk scaling function has been applied: • Figure PG&E-5.1.1-2 Risk Bow Tie for Wildfire Risk • Figure PG&E-5.1.1-3 Risk Bow Tie for PSPS Risk • Figure PG&E-5.1.1-4 Risk Bow Tie for EPSS • Figure PG&E-6.1.3.2-1 2026 Year Baseline (With and Without Operational Mitigation) • Figure 6-1 Projected Overall Service Territory Risk. b. The following are tables where a risk scaling function has been applied: • Table 5-5: Summary of Top Risk Circuit Segments • Table 6-1: PG&E Prioritized Areas Based on Overall Utility Risk • Table PG&E-6.1.3-1 Mitigation Effectiveness Alone and In Combination • Table 6-3: Risk Impact of Activities • Table 6-4 Summary of Risk Reduction for Top Risk Circuits • Table 8-1 Grid Design, Operation, and Maintenance Targets by Year • Table PG&E-8.2.1-3 Ignition Mitigation Effectiveness Representative Blended Average Values • Appendix F, Table 5-5 Summary of Top-Risk Circuits, Segments, or Spans • Appendix F, Table 6-1 PG&E Prioritized Areas Based on Overall Utility Risk • Appendix F, Table 6-4 Summary of Risk Reduction for Top Risk Circuits. c. The following are page numbers and sentences where a risk scaling function has been applied: c. The page #s (using footer from PG&E's 2024 RAMP) are: and In the 2026-2028 Base WMP,	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5
166	SPD	004	SPD_004	2	No	SPD_004_Q2	n an Administrative Law Judge Ruling dated April 22 2025 in the PG&E 2024 RAMP Proceeding (A.24-05-008), PG&E was directed to conduct a parallel risk evaluation using a risk-neutral, linear scaling function in preparation for PG&E's 2027 GRC Rate Case. For each of the locations listed in 1a.-1c., provide a new calculation without applying PG&E's risk scaling function. a. If the values are in a figure, recreate the figure without the scaling function applied to the calculation that generated the value(s) in the figure. b. If the values are in a table, recreate the table without the scaling function applied to the calculation that generated the value(s) in the table. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence with the new value that was generated without the scaling function being applied to the calculation.	Please see below for risk-neutral versions of the figures, tables, and text values identified in PG&E's response to Question No. 1, below. Please note that PG&E is continuing to work to produce risk-neutral versions of some of the identified values and will supplement this response as soon as possible to provide them. a. The following figures are regenerated without a risk scaling function on the April 2025 vintage models for the 2026 Baseline: • Figure PG&E-5.1.1-2 Risk Bow Tie for Wildfire Risk (Risk Neutral, April 2025 vintage). • Figure PG&E-5.1.1-3 Risk Bow Tie for PSPS Risk (Risk Neutral, April 2025 vintage). • Figure PG&E-5.1.1-4 Risk Bow Tie for EPSS (Risk Neutral, April 2025 vintage). • Figure PG&E-6.1.3.2-1 2026 Year Baseline (With and Without Operational Mitigation). b. The following tables are regenerated without a risk scaling function: • Table PG&E-6.1.3-1 Mitigation Effectiveness Alone and In Combination • Table 6-3: Risk Impact of Activities • Table PG&E-8.2.1-3 Ignition Mitigation Effectiveness Representative Blended Average Values. • Appendix F, Table 5-5 Summary of Top-Risk Circuits, Segments, or Spans • Appendix F, Table 6-1 PG&E Prioritized Areas Based on Overall Utility Risk c. The following formulas and sentences are regenerated without a risk scaling function on the April 2025 vintage models for the 2026 Baseline:	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5
167	SPD	004	SPD_004	3	No	SPD_004_Q3	List the locations in the 2026-2028 Base WMP where PG&E applied a territory-wide monetized value of electric reliability generated by the ICE (Interruption Cost Estimator) Calculator 1.0 to calculate a value or risk, consequence, risk reduction, or CBR. a. If the values are in a figure, list the Figure number. b. If the values are in a table, list the Table Number. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence and the page number	PG&E has identified the figures, tables, and text values below as utilizing an aggregated ICE 1.0 value. a. The following are figures where an aggregated ICE 1.0 value has been applied: • Figure PG&E-5.1.1-2 Risk Bow Tie for Wildfire Risk; Figure PG&E-5.1.1-3 Risk Bow Tie for PSPS Risk; • Figure PG&E-5.1.1-4 Risk Bow Tie for EPSS; • Figure PG&E-6.1.3.2-1 2026 Year Baseline (With and Without Operational Mitigation); and • Figure 6-1 Projected Overall Service Territory Risk. b. The following are tables where an aggregated ICE 1.0 value has been applied: • Table 5-5 Summary of Top Risk Circuit Segments; • Table 6-1 PG&E Prioritized Areas Based on Overall Utility Risk; • Table 6-3 Risk Impact of Activities; • Table 6-4 Summary of Risk Reduction for Top Risk Circuits; WMP-Discovery 2026-2028_DR_SPD_004-Q003 Page 2 • Appendix F, Table 5-5 Summary of Top-Risk Circuits, Segments, or Spans; • Appendix F, Table 6-1 PG&E Prioritized Areas Based on Overall Utility Risk; and • Appendix F, Table 6-4 Summary of Risk Reduction for Top Risk Circuits. c. The following are page numbers and sentences where an aggregated ICE 1.0 value has been applied:	Eddie Schmitt	4/30/2025	6/20/2025	6/20/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5
168	SPD	004	SPD_004	4	No	SPD_004_Q4	In an Administrative Law Judge Ruling dated April 22 2025 in the PG&E 2024 RAMP Proceeding (A.24-05-008), PG&E was directed to provide a parallel reliability cost calculation using the disaggregated approach recommended in the SPD Evaluation Report on PG&E's 2024 RAMP Application in preparation for PG&E's 2027 GRC Rate Case. For each of the locations listed in 3a.-3c. provide a new calculation by applying the disaggregated approach recommended in the SPD Evaluation Report. a. If the values are in a figure, recreate the figure by applying the disaggregated approach recommended in the SPD Evaluation Report to the calculation that generated the value(s) in the figure. b. If the values are in a table, recreate the table by applying the disaggregated approach recommended in the SPD Evaluation Report to the calculation that generated the value(s) in the table. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence with the new value that was generated by applying the disaggregated approach recommended in the SPD Evaluation Report to the calculation.	a. The following figures are regenerated by applying the ICE 2.0 disaggregated values ($0.08/CMI for residential, $23.11/CMI for nonresidential) on the April 2025 vintage models for the 2026 Baseline: WMP-Discovery 2026-2028_DR_SPD_004-Q004 Page 2 • Figure PG&E-5.1.1-2 Risk Bow Tie for Wildfire Risk • Figure PG&E-5.1.1-3 Risk Bow Tie for PSPS Risk WMP-Discovery 2026-2028_DR_SPD_004-Q004 Page 3 • Figure PG&E-5.1.1-4 Risk Bow Tie for EPSS • Figure PG&E-6.1.3.2-1 2026 Year Baseline (With and Without Operational Mitigation) $19,398 $(15,863)$3,535 $1,464 $696 $5,695 Wildfire (pre-EPSS/PSPS)Wildfire Mitigation …Wildfire (post-EPSS/PSPS)PSPS ConsequenceEPSS ConsequenceWildfire + EPSS + PSPSMonetized Levels (2024 $ M$-$5,000 $10,000 $15,000 $20,000 $25,000 Wildfire Risk with PSPS and EPSS(when applying ICE2.0 disaggregation) WMP-Discovery 2026-2028_DR_SPD_004-Q004 Page 4 • Figure 6-1 Projected Overall Service Territory Risk b. The following tables are regenerated by applying the ICE 2.0 disaggregated values ($0.08/CMI for residential, $23.11/CMI for nonresidential): 0% 20% 40% 60% 80% 100% 2023 2025 2027 2029 2031 2033 Projected Overall Utility Risk Year Residual Risk with Resiliency	Eddie Schmitt	4/30/2025	6/20/2025	6/20/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	3	No	5	Risk Methodology & Assessment	5
169	SPD	004	SPD_004	5(a)	Yes	SPD_004_Q5(a)	Fill in the data requested in the attached workbook titled "Decision Tree Results by Circuit Segment.xlsx". This workbook is modeled upon the PGE_2023_WMP_R0_Section_642_Atch01.xlsx workbook that was submitted with the PG&E 2023-2025 Base WMP and the PG&E response to a CalAdvocates Data Request that included the workbook titled WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx. a. Follow the Field Descriptions in the "Instruction" spreadsheet to complete the corresponding cells in the "Primary", "S&S" and "DistTotal" spreadsheets. b. Responses in the "Primary" spreadsheet must be limited to the primary lines found on the corresponding "Circuit Segment Name" listed in Column A. c. Responses in the "S&S" spreadsheet must be limited to the secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. d. Responses in the "DistTotal" spreadsheet must include both the primary, secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. e. If any of the data requested in this dataset workbook would be impacted by the Administrative Law Judge Ruling described in Questions 1 and 3, provide a second version of this dataset using a risk-neutral, linear scaling function and using the disaggregated approach to reliability cost calculation recommended in the SPD Evaluation Report.	As indicated in the previous response to this question, PG&E is providing the following tranche-level data in attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp01Atch01.xlsx", worksheet 'EORM WLDFR Values', 'EORM EPSS Values', 'EORM PSPS Values'1: • Pre-Mitigated Ignition LoRE • Pre-Mitigated Ignition Safety CoRE (Natural Units) • Unscaled Ignition Pre-Mitigated Safety CoRE ($) • Pre-Mitigated Ignition Reliability CoRE (Natural Units) • Unscaled Pre-Mitigated Ignition Reliability CoRE ($) • Pre-Mitigated Ignition Financial CoRE (Natural Units) • Unscaled Pre-Mitigated Ignition Financial CoRE ($) • Unscaled Pre-Mitigated Ignition Risk ($) • Pre-Mitigated Outage Program LoRE • Pre-Mitigated Outage Program Safety CoRE (Natural Units) • Unscaled Outage Program Pre-Mitigated Safety CoRE ($) • Pre-Mitigated Outage Program Reliability CoRE (Natural Units) • Unscaled Pre-Mitigated Outage Program Reliability CoRE ($) • Pre-Mitigated Outage Program Financial CoRE (Natural Units) • Unscaled Pre-Mitigated Outage Program Financial CoRE ($) • Unscaled Pre-Mitigated Outage Program Risk ($) • Unscaled Pre-Mitigated Overall Risk ($). PG&E is also providing the mapping between circuit segments to tranches for WLDFR, EPSS, and PSPS in the respective 'EORM WLDFR Mapping', 'EORM EPSS Mapping', and 'EORM PSPS Mapping' tabs. The fields pertaining to "Ignition" would refer to the WLDFR mapping and WLDFR values. For the fields pertaining Outage Programs, refer to the EPSS and PSPS values and mapping. As indicated in the previous response to this question, PG&E is providing the following data in attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp01Atch01.xlsx", worksheet 'Primary': • Miles of OH (columns AN:AS) • Miles of UG (columns AT:AY) • Miles of Line Removal (columns AZ:BE) • Total Miles of System Hardening (columns BF:BK) • Total Expenditure of OH Completed in Year (columns EF:EH)	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.5.2
169	SPD	004	SPD_004	5(a2)	Yes	SPD_004_Q5(a2)	Fill in the data requested in the attached workbook titled "Decision Tree Results by Circuit Segment.xlsx". This workbook is modeled upon the PGE_2023_WMP_R0_Section_642_Atch01.xlsx workbook that was submitted with the PG&E 2023-2025 Base WMP and the PG&E response to a CalAdvocates Data Request that included the workbook titled WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx. a. Follow the Field Descriptions in the "Instruction" spreadsheet to complete the corresponding cells in the "Primary", "S&S" and "DistTotal" spreadsheets. b. Responses in the "Primary" spreadsheet must be limited to the primary lines found on the corresponding "Circuit Segment Name" listed in Column A. c. Responses in the "S&S" spreadsheet must be limited to the secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. d. Responses in the "DistTotal" spreadsheet must include both the primary, secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. e. If any of the data requested in this dataset workbook would be impacted by the Administrative Law Judge Ruling described in Questions 1 and 3, provide a second version of this dataset using a risk-neutral, linear scaling function and using the disaggregated approach to reliability cost calculation recommended in the SPD Evaluation Report.	PG&E is providing the following data in attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp02Atch01.xlsx," worksheet "Primary": • Miles of Tree Removal; WMP-Discovery 2026-2028_DR_SPD_004-Q005Supp02 Page 2 • Miles of Pole Clearing;1 • Total Expenditure of Tree Removal Completed in Year; and • Total Expenditure of Pole Clearing Completed in Year. Please note the following regarding the data provided: • As previously indicated, PG&E cannot utilize the "Tree Removal" or "Pole Clearing" mitigations by circuit mile. Instead, PG&E is providing the number of units mitigated per circuit segment per year. • As previously indicated, PG&E cannot provide data for 2026-2028 for these mitigations. However, please note that PG&E is providing a forecast of units and total expenditure (subject to the note below) for "Pole Clearing" for these years. These forecasts represent estimates only. • As previously indicated, PG&E cannot provide specific expenditures for these mitigations at a circuit segment level. Instead, PG&E has multiplied units completed per segment by average unit cost to populate the "Total Expenditure" fields.	Eddie Schmitt	4/30/2025	6/20/2025	6/20/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.5.2

169	SPD	004	SPD_004	5	No	SPD_004_Q5	Fill in the data requested in the attached workbook titled "Decision Tree Results by Circuit Segment.xlsx". This workbook is modeled upon the PGE_2023_WMP_R0_Section_8A2_Atch01.xlsx workbook that was submitted with the PG&E 2023-2025 Base WMP and the PG&E response to a CalAdvocates Data Request that included the workbook titled WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx. a. Follow the Field Descriptions in the "Instruction" spreadsheet to complete the corresponding cells in the "Primary", "S&S" and "DistTotal" spreadsheets. b. Responses in the "Primary" spreadsheet must be limited to the primary lines found on the corresponding "Circuit Segment Name" listed in Column A. c. Responses in the "S&S" spreadsheet must be limited to the secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. d. Responses in the "DistTotal" spreadsheet must include both the primary, secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. e. If any of the data requested in this dataset workbook would be impacted by the Administrative Law Judge Ruling described in Questions 1 and 3, provide a second version of this dataset using a risk-neutral, linear scaling function and using the disaggregated approach to reliability cost calculation recommended in the SPD Evaluation Report.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Atch01.xlsx." In this delivery, PG&E is providing the data fields in the table below, subject to the following clarifications. As discussed at PG&E's meeting with the SPD on May 9, 2025, PG&E is also providing its assessment of the fields that it has determined are not possible to provide as requested and what it proposes to provide in lieu of those fields. PG&E also provides a brief explanation of each field that PG&E has determined is not WMP-Discovery 2026-2028_DR_SPD_004-Q005 Page 2 possible to provide. Please note that, as PG&E's subject matter experts continue to engage with this data request, further clarifications and challenges may emerge. Please note that PG&E is still determining the dates by which those fields not provided with this delivery or identified below can be produced. PG&E is working diligently to respond to this request and will endeavor to provide as many fields as reasonably possible on May 30, 2025. PG&E will provide updates to SPD as timelines are determined, and appreciates SPD's patience. PG&E will endeavor to respond to this data request to the fullest extent possible. At this time, PG&E expects to provide the following fields on May 30, 2025: • Miles of OH • Miles of UG • Miles of Line Removal • Total Miles of System Hardening • Total Expenditure of OH Completed in Year • Total Expenditure of UG Completed in Year • Total Expenditure of Line Removal Completed in Year • Total Expenditure of system Hardening Completed in Year PG&E is still determining the dates by which those fields not provided with this delivery or identified here can be produced. Fields PG&E has Determined Are Impossible to Provide as Requested In addition to the limitations described below, please note that the following mitigation programs are not untilized by circuit mile and cannot be provided as such. Unless otherwise noted, PG&E will provide the total number of units mitigated per circuit segment: c.Covering Expe Replacement	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.5.2
170	SPD	004	SPD_004	6	No	SPD_004_Q6	Per PG&E's response to Question 26c in SPD-PGE-WMP2026-001, where was Figure SRN-PG&E 23-05-06C from PG&E's 2023-2025 Base WMP published?	In our response to Question 26c in SPD-PGE-WMP2026-001 we inadvertently referenced SRN-PG&E- 23-05-06C. Figure SRN-PG&E-23-06 from PGE's 2023-2025 Base WMP is PG&E's System Hardening Decision Tree. PG&E showed the decision tree in its entirety and then separated the figure into two individual figures (Figure SRN-PG&E-23-06A and Figure SRN-PG&E-23-06B), three figures in total, because Figure SRN-PG&E-23-06 is difficult to read. When we responded to SPD-PGE-WMP2026-001, Question 26c we mistakenly referred to the three decision tree figures as SRN-PG&E- 23-05-06A, SRN-PG&E- 23-05-06B and SRN-PG&E- 23-05-06C. The decision tree was published in the 2023-2025 Base WMP.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
171	SPD	004	SPD_004	7	No	SPD_004_Q7	Provide copies of Figures SRN-PG&E-23-05-06A, SRN-PG&E-23-05-06B, SRN-PG&E-23-05-06C from PG&E's 2023-2025 Base WMP in their native format. a. If the native format was not .pptx, convert all three figures into the .pptx format and provide them with this response. All objects and text in the figures must manipulatable in the .pptx format	See attached "WMP-Discovery2026-2028_DR_SPD_004-Q007Atch01.pptx". The slides provided represent FIGURE SRN-PG&E-23-05-06, SRN-PG&E-23-05-06A, and SRN PG&E-23-05-06B. As noted in WMP-Discovery2026-2028_DR_SPD_004-Q006, SRN PG&E- 23-05-06C was inadvertently referenced.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.4
172	SPD	004	SPD_004	8(s)	Yes	SPD_004_Q8(s)	Provide copies of Figures PG&E-5.2.1-1, PG&E -5.2-1, PG&E 5-2-2, PG&E-5-2-3, PG&E-5-2-4, PG&E-5-2-5, PG&E-5.2.2.2-1, PG&E-6.1.3.1-4, PG&E-8-1-1, PG&E-8-1-2, PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP in their native format. a. If the native format was not .pptx, convert all thirteen figures into the .pptx format and provide them with this response. All objects and text in the figures must manipulatable in the .pptx format.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q008Supp01Atch01.pptx" for copies of Figures PG&E-5.2.1-1, PG&E -5.2-1, PG&E 5-2-2, PG&E-5-2-3, PG&E-5-2-4, PG&E-5-2-5, PG&E-5.2.2.2-1 in their native .pptx (PowerPoint) format. Figure PG&E-6.1.3.1-4 is included, but please note that Visio drawings cannot be converted into modifiable PowerPoint graphics, they can only be copied into PowerPoint as a picture. Figures PG&E-8-1-1 and PG&E-8-1-2 are also included, but please note that these figures were generated in a non-PowerPoint graphic design software and cannot be converted into modifiable PowerPoint graphics. Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q008Supp01Atch02.vsdx" for a copy of Figure PG&E-6.1.3.1-4 in its native Visio (vsdx) format. Please see attachments "WMP-Discovery2026-2028_DR_SPD_004-Q008Supp01Atch03.png" and "WMP-Discovery2026-2028_DR_SPD_004-Q008Supp01Atch04.png" for copies of Figures PG&E-8-1-1 and PG&E-8-1-2 in their native format.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	4	No	5	Risk Methodology & Assessment	5.2.1
172	SPD	004	SPD_004	8	No	SPD_004_Q8	Provide copies of Figures PG&E-5.2.1-1, PG&E -5.2-1, PG&E 5-2-2, PG&E-5-2-3, PG&E-5-2-4, PG&E-5-2-5, PG&E-5.2.2.2-1, PG&E-6.1.3.1-4, PG&E-8-1-1, PG&E-8-1-2, PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP in their native format. a. If the native format was not .pptx, convert all thirteen figures into the .pptx format and provide them with this response. All objects and text in the figures must manipulatable in the .pptx format.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q008Atch01.pptx" for Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in their native .pptx format.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.2.1
173	SPD	004	SPD_004	9	No	SPD_004_Q9	Which bowtie workpaper was used to generate Figure PG&E-5.1.1-2 in the 2026-2028 Base WMP? a. Has this bowtie workpaper been updated since it was submitted with the 2024 RAMP Application? If so, explain how. b. If this bowtie workpaper was submitted with PG&E's 2024 RAMP Application and has been updated since the 2024 RAMP Application, provide SPD with a copy of the updated workpaper. c. Provide the exact settings that were used on the bowtie workpaper to generate Figure PG&E-5.1.1-2 in the 2026-2028 Base WMP. d. How did this bowtie workpaper inform mitigation selection in this WMP? Provide a step-by step example demonstrating how this bowtie workpaper informed and resulted in the mitigation selections on the circuit segment named CORNING 110185152. e. Figure 1-5 of the 2024 RAMP Application exhibited an exposure of 222,209 miles. Figure PG&E-5.1.1-2 of the 2026-2028 Base WMP exhibits an exposure of 472,475 miles. Explain why the number of miles increased from the 2024 RAMP to the 2026-2028 Base WMP. f. Does PG&E intend to update this bowtie workpaper, between now and when it submits its 2027 GRC? If so, explain how and why this bowtie workpaper will be updated between now and when PG&E submits its 2027 GRC.	The workpapar, Exhibit (PG&E-4) EO-WLDFR-2a_Bow Tie (System).xlsm, was provided in the RAMP application. An updated version was used to generate Figure PG&E-5.1.1-2 for the 2026-2028 Base WMP. a. Yes, this bowtie workpaper has been updated since it was submitted with the 2024 RAMP application. The updates include the following: WMP-Discovery 2026-2028_DR_SPD_004-Q009 Page 2 • Historical source data used to predict frequency and consequence of ignitions have been updated to include incidents from 2023 and 2024; • The WDRM used for distribution tranches has updated from version 3 to version 4; and • The EPSS and PSPS effectiveness as well as the EPSS multiplier have been updated. b. Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q009Atch01.xlsm" for the requested document. c. Please refer to the sheet "Bowtie" in the attachment "WMP-Discovery2026-2028_DR_SPD_004-Q009Atch01.xlsm". The settings are defaulted to the following: d. The bowtie provides an overall picture of risk drivers and consequences. The tranche level is the most granular view. The enterprise risk model aggregates WDRM circuit segments into 42 tranches (10 HFRA Primary, 10 non-HFRA Primary, 10 HFRA Secondary, 10 HFRA Services, 1 non-HFRA Secondary, and 1 non-HFRA Services) of similar risk profiles. Most of the program workplans are developed at the circuit segment or circuit level and then mapped to the tranche level. The bowtie does not inform mitigation selection at the circuit segment level in the WMP. e. There was a coll reference error that caused the near doubling of exposure miles in the WMP graphic. The attachment provided corrects the error. The exposure miles should be 235,746 miles. f. Yes, the bowtie will be updated to include these updates: • The safety monetized value changes from $15.23 million to $16.2 million using the value of a statistical life from the Bureau of Labor Statistics, adjusted to California dollars. • The value of service increases from $3.17 to $3.33 based on PG&E 2024	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.1.1
174	SPD	004	SPD_004	10	No	SPD_004_Q10	Which bowtie workpaper was used to generate Figure PG&E-5.1.1-3 in the 2026-2028 Base WMP? a. Has this bowtie workpaper been updated since it was submitted with the 2024 RAMP Application? If so, explain how. b. If this bowtie workpaper was submitted with PG&E's 2024 RAMP Application and has been updated since the 2024 RAMP Application, provide SPD with a copy of the updated workpaper. c. Provide the exact settings that were used on the bowtie workpaper to generate Figure PG&E-5.1.1-3 in the 2026-2028 Base WMP. d. How did this bowtie workpaper inform mitigation selection in this WMP? Provide a step-by step example demonstrating how this bowtie workpaper informed and resulted in the mitigation selections on CORNING 110185152. e. Figure 1-8 of the 2024 RAMP Application exhibited an exposure of 1,208,023 customers. Figure PG&E-5.1.1-3 of the 2026-2028 Base WMP exhibits an exposure of 611,246 customers. Explain why the number of customers decreased from the 2024 RAMP to the 2026-2028 Base WMP. f. Does PG&E intend to update this bowtie workpaper, between now and when it submits its 2027 GRC? If so, explain how and why this bowtie workpaper must be updated between now and when it submits its 2027 GRC.	d. The bowtie provides an overall picture of risk drivers and consequences. The tranche level is the most granular view. The enterprise risk model aggregates WDRM circuit segments into 42 tranches (10 HFRA Primary, 10 non-HFRA Primary, 10 HFRA Secondary, 10 HFRA Services, 1 non-HFRA Secondary, and 1 non-HFRA Services) of similar risk profiles. Most of the program workplans are developed at the circuit segment or circuit level and then mapped to the tranche level. The bowtie does not inform mitigation selection at the circuit segment level in the WMP. e. There was a coll reference error that caused the near doubling of exposure miles in the WMP graphic. The attachment provided corrects the error. The exposure miles should be 235,746 miles. f. Yes, the bowtie will be updated to include these updates: • The safety monetized value changes from $15.23 million to $16.2 million using the value of a statistical life from the Bureau of Labor Statistics, adjusted to California dollars. • The value of service increases from $3.17 to $3.33 based on PG&E 2024 recorded customer counts and consumption values. • Updated programs based on latest information. d. The bowtie provides an overall picture of risk drivers and consequences. The tranche level is the most granular view, which is grouped by customer classification (Extreme, Significant, Elevated, and Regular). It does not inform mitigation selection at the circuit segment level in the WMP. e. The reason for the decrease in exposure is due to removing the Potentially Impacted Customers (PIC) dataset and using PSPS 5.0 Guidance for the lookback events and including the years 2023 and 2024. PSPS events are smaller in size and less frequent as our PSPS guidance evolves. f. Yes, the bowtie will be updated to include these updates: • Corrections to the PSPS lookback analysis. • The safety monetized value changes from $15.23 million to $16.2 million using the value of a statistical life from the Bureau of Labor Statistics, adjusted to California dollars. • The value of service increases from $3.17 to $3.33 based on PG&E 2024	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.1.1
175	SPD	004	SPD_004	11	No	SPD_004_Q11	Which bowtie workpaper was used to generate Figure PG&E-5.1.1-4 in the 2026-2028 Base WMP? a. Has this bowtie workpaper been updated since it was submitted with the 2024 RAMP Application? If so, explain how. b. If this bowtie workpaper was submitted with PG&E's 2024 RAMP Application and has been updated since the 2024 RAMP Application, provide SPD with a copy of the updated workpaper. c. Provide the exact settings that were used on the bowtie workpaper to generate Figure PG&E-5.1.1-4 in the 2026-2028 Base WMP. d. How did this bowtie workpaper inform mitigation selection in this WMP? Provide a step-by step example demonstrating how this bowtie workpaper informed and resulted in the mitigation selections on CORNING 110185152. e. Figure 1-9 of the 2024 RAMP Application exhibited an exposure of 43,433 miles. Figure PG&E-5.1.1-4 of the 2026-2028 Base WMP exhibits an exposure of 43,506 miles. Explain why the number of miles increased from the 2024 RAMP to the 2026-2028 Base WMP. f. Does PG&E intend to update this bowtie workpaper, between now and when it submits its 2027 GRC? If so, explain how and why this bowtie workpaper must be updated between now and when it submits its 2027 GRC.	The workpaper, Exhibit (PG&E-4) EO-WEPSS-2_Bow tie.xlsm, was provided in the RAMP application. An updated version was used to generate Figure PG&E-5.1.1-4 for the 2026-2028 Base WMP. a. Yes, this bowtie workpaper has been updated since it was submitted with the 2024 RAMP application. The updates include the following: WMP-Discovery 2026-2028_DR_SPD_004-Q011 Page 2 • The 2026-2028 Base WMP version of the bowtie includes updated outage data to include 2023 and 2024 whenever applicable. • The WDRM used for developing tranches has been updated from version 3 to version 4. • EPSS lookback analysis is updated based on Fire Potential Index (FPI) version 5. • The EPSS multiplier has been updated from 6.8 to 5.0 b. Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q011Atch01.xlsm" for the requested document. c. Please refer to the sheet "Bowtie" in the attachment "WMP-Discovery2026-2028_DR_SPD_004-Q011Atch01.xlsm". The settings are defaulted to the following: d. The bowtie provides an overall picture of risk drivers and consequences. The tranche level is the most granular view. The tranche is a group of circuit segments of similar risk profile. Most of the program workplans are developed at the circuit segment or circuit level and then mapped to the tranche level. It does not inform mitigation selection at the circuit segment level in the WMP. e. The RAMP Workpaper is based on older vintage of GIS data that informs our exposure mapping. The marginal change in exposure miles is from using updated version of the GIS data. f. Yes, the bowtie will be updated to include these updates: • The monetized safety value changes from $15.23 million to $16.2 million using the value of a statistical life from the Bureau of Labor Statistics, adjusted to California dollars. • The value of service increases from $3.17 to $3.33 based on PG&E 2024 recorded customer counts and consumption values. • Updated programs based on latest information.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.1.1

176	SPD	004	SPD_004	12	No	SPD_004_Q12	Question 11e. highlights a marginal change in exposure for EPSS risk between the 2024 RAMP and 2026-2028 Base WMP filings. Questions 9k and 10a highlight a significant change in exposure for Wildfire and PSPS risk between the 2024 RAMP and 2026-2028 Base WMP filings. Explain why exposure to EPSS risk exhibits a marginal change, despite significant changes in the exposure to Wildfire and PSPS risk. a. The significant decrease in exposure to PSPS risk highlighted in Question 10e resulted in a significant decrease in risk value between the 2024 RAMP and 2026-2028 Base WMP filings.1 The significant increase in exposure to Wildfire risk highlighted in Question 9e did not result in a significant increase in risk value between the 2024 RAMP and 2026-2028 Base WMP filings.2 Explain why the change in exposure to PSPS risk resulted in a corresponding change in risk value, but the change in exposure to Wildfire risk did not result in a corresponding change in risk value.	EPSS risk is quantified as the difference between the Failure of Distribution Overhead Assets risk with and without EPSS. EPSS exposure is the mileage of overhead primary circuits that are EPSS capable. EPSS capable means the circuits could have EPSS enabled when the enablement criteria are met. Marginal change in EPSS exposure resulted in marginal change in EPSS risk. EPSS risk is not directly correlated to Wildfire and PSPS. a. PSPS risk had changes in customer count to drive a significant decrease in risk value. The Wildfire exposure is an error and should have read 235,746 miles.	Eddie Schmitt	4/30/2025	5/9/2025	5/9/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	Appendix D	Appendix D: Areas of Continued Improvement	ACI PG&E-25U-06
177	SPD	004	SPD_004	13	No	SPD_004_Q13	Explain why the x% of ignitions in HFTD/HFRA column in Table 3-1 in the PG&E 2026-2028 Base WMP does not total to 100%.	In reviewing Table 3-1 submitted in the WMP, we determined that a non-final version of the table was included. The correct version of Table 3-1 is provided below. Please note, due to rounding of numbers, the total percentage of ignitions in HFTD/HFRA equals 100.1%.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	3	Overview of WMP	3.4
178	SPD	004	SPD_004	14	No	SPD_004_Q14	Table 4-1 in 6th Revision of the PG&E 2023-2025 Base WMP shows a ramp up in expenditures from 2020-2022 and from 2023-2025. Table 3-3 in the PG&E 2026-2028 Base WMP, shows a similar ramp up in expenditures. a. Explain what causes the low forecasts in the first year of each WMP. b. Explain what caused the significant variances in 2020-2022 in Table 4-1 from the 6th Revision of the PG&E 2023-2025 Base WMP. c. Provide an update to Table 4-1 from the 6th Revision of the PG&E 2023-2025 Base WMP that includes the actuals and variance for 2023 and 2024. d. Provide an explanation for any variances in the update created in response to Question 14c.	a. The forecast for each year is driven by the workplan and target commitments for wildfire mitigation work. As the workplan increases, so does the forecast. b. Please refer to the explanations provided in PG&E's Annual Report on Compliance (ARC), which is included here as attachments "WMP-Discovery2026-2028_DR_SPD_004-Q014Atch01.xlsx" and "WMP-Discovery2026-2028_DR_SPD_004-Q014Atch02.pdf". c. Please refer to attachment "WMP-Discovery2026-2028_DR_SPD_004-Q014Atch01.xlsx" for the updated Actual amounts for 2023 and 2024 and updated plan for 2025. d. The variance explanations can be found in the ARC report for each year.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	2	No	3	Overview of WMP	3.6
179	SPD	004	SPD_004	15	No	SPD_004_Q15	Pg. 135 explains each of the elements in the waterfall figure PG&E-6.1.3.2-1 in the 2026-2028 Base WMP. PG&E states that Wildfire (pre-EPSS/PSPS) is the "inherent wildfire risk based on the data from 2017 to 2024, absent of the use of PSPS and EPSS operational mitigations". a. Was the Wildfire (pre-EPSS/PSPS) calculated as a product of LoRE and CoRE? b. Explain why PSPS Consequence and EPSS Consequence were included in this figure, rather than PSPS Risk and EPSS Risk. i. Explain why PG&E did not use the product of LoRE and CoRE for PSPS and EPSS when generating this figure.	a. Yes, Wildfire (pre-EPSS/PSPS) is calculated as a product of LoRE and CoRE. The pre-EPSS/PSPS Wildfire LoRE is 945.66 events per year and the CoRE is $20.7M, resulting in approximately $19,578M as the risk value. b. In this instance, the terms "PSPS Consequence" and "EPSS Consequence" are interchangeable with "PSPS Risk" and "EPSS Risk." i. PSPS Consequence and EPSS Consequence is still the product of LoRE and CoRE. PSPS LoRE is 3.286 events per year and the CoRE is $594M, resulting in approximately $1,953M as the risk value. EPSS Consequence is 2,467 events per year and the CoRE is $0.425M, resulting in approximately $1,049M as the risk value.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3
180	SPD	004	SPD_004	16	No	SPD_004_Q16	Provide a copy of Figure 1-2 in PG&E-4 Chapter 1 of the PG&E 2024 RAMP without the scaling function (a neutral risk attitude). a. Explain any variances in the values displayed in the Figure 1-2 without the scaling function when compared with PG&E's response to WMP-Discovery2026-2028_DR_MGRA_003-Q007.	Please see the attachment "WMP-Discovery2026-2028_DR_SPD_004-Q016Atch01.xlsx" for the requested information. WMP-Discovery 2026-2028_DR_SPD_004-Q016 Page 2 a. The variances between the two charts are from 1) the differences in the year: RAMP chart shows the TY Baseline for 2027 while MGRA Discovery and WMP chart shows Baseline for 2026; and 2) the various updates made to the inputs to the risk models since RAMP filing. The table below outlines the key changes leading to variances between the two charts.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3.2
181	SPD	004	SPD_004	17	No	SPD_004_Q17	In Question 1c of PG&E's data request response to titled WMP-Discovery2026-2028_DR_TURN_002-Q001, PG&E said that "The inclusion of PCs results in an increased risk associated with customers in locations where PSPS thresholds were not met in our historical lookback, but have exposure to PSPS risk based on HFTD/HFRA location and system configuration." a. What does HFTD/HFRA location mean in this sentence? i. Does PG&E mean that every customer living within the HFTD/HFRA was included in the historical lookback? ii. Does this include customers who might be downstream of circuit segment that is exposed to PSPS risk? b. Define "system configuration". c. Include a list of the components that were considered within the "system configuration" and explain their relationship to PSPS thresholds. d. List each procedural step used to determine whether customers were exposed to PSPS risk based on HFTD/HFRA location and system configuration. Provide an explanation for each step.	a. HFTD/HFRA refers to the applicable HFRA version at the time of the lookback analysis. i. No. Customers living within the HFTD/HFRA were included in the Potentially Impacted Customers dataset, not in the historical lookback dataset. HFTD/HFRA customers included in the historical lookback dataset would have to have met the PSPS 5.0 Guidance threshold. ii. Yes. Customers who might be downstream of a circuit segment in HFRA would be included. WMP-Discovery 2026-2028_DR_SPD_004-Q017 Page 2 b. System configuration in this sentence refers to customers who might be physically located in non-HFRA but are included because they are downstream of a circuit segment in HFRA that would have been de-energized. c. Please see PG&E's response to subpart (b) regarding the definition of "system configuration" in this context. "System configuration" does not have "components" or impact on PSPS thresholds. PSPS thresholds may have an impact on which customers may be de-energized (in context of the historical lookback not PIC) due to system configuration. d. The process for PIC is the same process for historical PSPS lookback analyses, however, there is no PSPS thresholds and the "weather polygon" is the latest approved HFRA version. Circuit segments that are within HFRA are included, as well as any downstream customers that would be affected by a de-energization. Any commonly used mitigations like microgrids and backfeeds, if applicable, would be assumed to operate, so those customers would be mitigated in the PIC dataset.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.2.1
182	SPD	004	SPD_004	18	No	SPD_004_Q18	PG&E's Response to TURN-PG&E-3 Question 1 stated that with regard to the risk score in the attached datasets (e.g. WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx), PG&E replaced the previously provided "mean risk score" with the "estimated wildfire risk reduction". Provide an example for a subproject where both the "mean risk score" and "estimated wildfire risk reduction" is calculated.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q018Atch01CONF.xlsx" for an example of wildfire risk reduction and mean risk for multiple subprojects on the same circuit segment. This appends a new column (Column S) to the previous attachment "WMP Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx" for one sample circuit segment. PG&E originally included estimated wildfire risk reduction for each subproject because this is an indicator of absolute risk reduction to be achieved by the subproject. The mean risk is the total risk score divided by the number of primary overhead miles on a circuit segment and is an indicator of the risk density of a subproject. It does not consider the total risk exposure associated with the length of the subproject.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.4
183	SPD	004	SPD_004	19	No	SPD_004_Q19	PG&E's Response to TURN-PG&E-3 Question 1 included the dataset titled WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx. PG&E's Response to SPD-PGE-WMP2026-001 Question 2 included the same dataset titled WMP-Discovery2026-2028_DR_SPD_001-Q002Supp01Atch01CONF.xlsx. Why do these datasets include TBD Orders where the Applicable Risk Model is Version 2 and Version 3? a. Why do these TBD Orders exhibit a pre-scoping status? b. Why do these TBD Orders only report Forecast UG Miles in 2027? c. Will WDRM v2 and v3 be used to scope projects that are Forecasted for 2028? If so, explain why.	"TBD" orders with an applicable risk model of v2 and v3 represent circuit protection zones (CPZs) which were originally identified for scoping when the applicable risk model was v2 or v3 at the time. These TBD orders fall into three categories: 1. On Hold Projects: Projects on these CPZs were paused following the 2023-2026 GRC decision. They will remain in a pre-scoping status and be re-evaluated and rescoped under WDRM v4. These are 2 CPZs in this category representing approximately 37 miles. 2. Carryover Projects: These CPZs represent projects that will carry over from the current GRC period and will remain as v2 or v3 projects. The pre-scoping status was an error. There are six CPZs in this category representing approximately 5.6 miles. 3. Inadvertently Included: These CPZs were initially identified as potential undergrounding projects due to mitigations being previously planned on a portion of the CPZ prior to 2027. The high-level workplan was developed based on the assumption that remaining mileage on these CPZs should be mitigated. For TBD orders in category 3, these projects were inadvertently included and will not be pursued as part of PG&E's 2027 workplan. There are four CPZs in this category representing less than 1 mile of work and 0.00085% risk reduction. Based on the current scoping process described by the System Hardening Project Scoping Decisions Trees: Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3, these projects would not have met the WDRM V4 criteria for inclusion in the work plan, and would not have proceeded beyond their inadvertent inclusion in this high-level workplan. For categorization of each of the CPZs with TBD orders in v2 and v3, please reference the table below: a. At the time of PG&E's WMP submission, the 2027 and 2028 work plan had not yet been fully scoped. For purposes of estimating risk reduction associated with PG&E's GH-04 WMP initiative mileage target, PG&E identified a list of circuit segments that would be considered for scoping and thus when producing attachment WMPDiscovery2026-2028_DR_SPD_001-Q002Supp01Atch01CONF.xlsx all line items with an end date in 2027 or 2028 were listed with a "pre-scoping" status. The workplan is dynamic and will continue to evolve as work progresses and circumstances change.	Eddie Schmitt	4/30/2025	5/9/2025	5/9/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
184	SPD	004	SPD_004	20	No	SPD_004_Q20	PG&E's Response to SPD-PGE-WMP2026-003 Question 9 included Tables 1, 2 and 3. Provide Excel versions of these tables. a. Confirm that the Advice Letter PG&E referred to in response to SPD-PGE-WMP2026-003 Question 9 was not "PG&E Advice 7130 E-A" but rather PG&E Advice 7150 E-A. b. Include the "Workplan Detail" Worksheet that was used to generate Tables 1 and 2 and is required by PG&E Advice 7150 E-A. c. Include the worksheet that PG&E used to generate Table 3. d. Ensure that all of the cells in Tables 1, 2 and 3 include formulas for calculating each number by referencing the worksheets requested in Questions 20b and 20c. e. Check the submitted Table 1 – some cells appear merged when in fact they should not be merged. For instance, for WDRM v2 total where Mitigation Type is listed as Line Removal the Total and 2026 are merged. Correct the table or explain why the cells are merged. i. Similarly, some cells appear to be split – for instance for 2023, there are two values for many of the mitigation types.	Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx", worksheet "Summary FINAL_WMP_Discovery". a. Yes, PG&E intended to reference PG&E Advice 7150 E-A in response to SPD-PGE-WMP2026-003 Question 9. b. See attached "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx" – Project Details, 2025 + 2026 UG, 2025 + 2026 OH, and 2025 + 2026 LR Tabs. c. See attached "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx" – Project Details and the 2026 Workplans Tabs. WMP-Discovery 2026-2028_DR_SPD_004-Q020 Page 2 d. See attached "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx", each calculation includes the requested formula. e. Merged cells in the attached "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx" have been corrected. i. Split cells in the attached "WMP-Discovery2026-2028_DR_SPD_004-Q020Atch01.xlsx" have been corrected. Please note that in the attachment, PG&E has included "unallocated" risk reduction for circuit segments that have been fully mitigated, but where discrepancies exist between circuit segment length data (as specified in the applicable version of the WDRM) and field as-built data. For example, unallocated overhead removal occurs when the mitigation footage recorded in our as-built dataset is less than the total length of the original overhead line being mitigated. As an example, this can occur when a more direct route with fewer bends than the original route is installed. Although the risk associated with the original overhead line is still addressed, it may not be reflected under the three mitigation categories (OH, UG, or Removal). To ensure every part of the original overhead line is accounted for in the risk reduction calculation, this "unallocated" difference must be included for a comprehensive assessment.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	GH-04	GH-04	GH-04
185	SPD	004	SPD_004	21	No	SPD_004_Q21	Figure PG&E-5.2-1 in the 2026-2028 Base WMP presents "Outage Probability Vegetation" as a Model. Section 3.5.2.3 Distribution Event Probability Models Version 4 (DEPM v4) Documentation is dedicated to describing "Vegetation Models". Pg. 60 presents "asset-based event models" and "contact from object" models but does not present "vegetations models." Does the "contact from object" description apply to "vegetation models?" If not, a. Why are vegetation models not discussed on pg. 60 of the 2026-2028 Base WMP? b. How are vegetation models integrated into the calculation of probability of ignition given outage? c. Compared with the Asset Equipment or Contact from Object models, are there any differences in how vegetation models are integrated into the calculation of probability of ignition? If so, list them and explain why there are differences.	a. PG&E categorizes "vegetation models" within "contact from object" models (i.e. vegetation contacted the lines). Thus, vegetation models, which are pixel-based, are described on page 60 of the WMP as part of the description of contact from object models. b. Vegetation models are integrated as described for "contact from object" models, which are all pixel-based. c. Vegetation models are integrated as described for "contact from object" models, which are all pixel-based.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.2.1
186	SPD	004	SPD_004	22	No	SPD_004_Q22	Provide a description of each of the alphanumeric customer categories listed in Table PG&E 5.2.2.2-2 in the 2026-2028 Base WMP. a. Include in the description an explanation of how PG&E established each category. b. What justification did PG&E use to establish the relative customer weightings? PG&E explains that CC1 has higher consequence, but why is "Extreme" weighted 20x more than "Significant?"	a. PG&E categorizes Critical Customers according to both the California Public Utilities Commission (CPUC) definition and PG&E's internal designations. See table below for description and explanation of how PG&E established each category: b. The relative customer weightings provided in Table PG&E 5.2.2.2-2 were derived from discussions with Customer Care and PG&E's Wildfire Risk team as a starting point to integrate weightings into the different types of critical customers. PG&E subject matter experts used their best judgment to develop the relative weighting multipliers. For example, "Extreme" is weighted 20x higher than "Significant" because PG&E's subject matter experts determined that public emergency response infrastructure warranted such relative prioritization.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.2.2.2
187	SPD	004	SPD_004	23	No	SPD_004_Q23	Related to Figure PG&E 5.2.2.3-1 in the 2026-2028 Base WMP, on pg. 72, PG&E states "…the two circuit segments share a common pixel, F6, and a that support structure (pole) asset also located in pixel F6. To keep the total sum of risk on the network constant, these shared risk results must be partially distributed to each of the circuit segments. The aggregation methodology, in this case, would assign half of the F6 pixel risk and half of the support structure risk to each of the circuit segments." a. Submit "RaDA Algorithms and Methodologies" b. If not explained in "RaDA Algorithms and Methodologies" please explain. i. Why, in this example, was the risk distributed to each of the circuit segments equally? ii. Are there instances where the risk is not distributed equally? a) If so, explain what those instances would be and how PG&E determines the proportion of risk that should be attributed to each circuit segment. Provide examples from a specific circuit segment. b) If not, explain why. c. Are there instances of a pixel sharing more than two circuit segments? i. If so, explain why a pixel can share more than two circuit segments. Provide examples by citing circuit segment names. ii. If not, explain why not.	a. Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q023Atch01.pdf" for the requested information.	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.2.2.2

187	SPD	004	SPD_004	23(ii)	Yes	SPD_004_Q23(ii)	Related to Figure PG&E 5.2.3-1 in the 2026-2028 Base WMP, on pg. 72, PG&E states "…the two circuit segments share a common pixel, F6, and a that support structure (pole) asset also located in pixel F6. To keep the total sum of risk on the network constant, these shared risk results must be partially distributed to each of the circuit segments. The aggregation methodology, in this case, would assign half of the F6 pixel risk and half of the support structure risk to each of the circuit segments." a. Submit "RaDA Algorithms and Methodologies" b. If not explained in "RaDA Algorithms and Methodologies" please explain: i. Why, in this example, was the risk distributed to each of the circuit segments equally? ii. Are there instances where the risk is not distributed equally? a) If so, explain what those instances would be and how PG&E determines the proportion of risk that should be attributed to each circuit segment. Provide examples from a specific circuit segment. b) If not, explain why. c. Are there instances of a pixel sharing more than two circuit segments? i. If so, explain why a pixel can share more than two circuit segments. Provide examples by citing circuit segment names. ii. If not, explain why not	a. Section 4.2 of "RaDA Algorithms and Methodologies" explains circuit segment aggregation of pixel and asset risk. i. MaxEnt models produce risk values for each pixel location that contains one or more assets. However, when a pixel is intersected by multiple circuit segments, it is very difficult to understand which circuit segment might be impacted by a failure event. For example, if a branch falls near a pole that supports multiple primary conductors that belong to two different circuit segments, the branch may cause a failure to the first circuit segment, the second circuit segment or both circuit segments. Since there is no way to know a specific outcome until the event occurs, the risk of the event is distributed evenly to the two circuit segments as the best estimate of future risk. ii. Shared pixel risk is always distributed equally. There are no instances of inequal distribution. a) Risk from shared pixels is always distributed equally. b) Explained in answer (i) above. c. There are many pixels that are intersected by more than two circuit segments. i. Pixels that are intersected by more than two circuit segments can typically be found near substations. An example of a pixel with more than two intersecting circuit segments is Pixel 4356_1929, located in Vallejo: Pixel 4356_1929 is intersected by three circuit segments VALLEJO B 1102CB: VALLEJO B 1101CB: VALLEJO B 0415CB ii. A pixel can be intersected by more than two circuit segments as demonstrated above.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.2.2.2
188	SPD	004	SPD_004	24	No	SPD_004_Q24	When discussing PSPS Risk on pages 74-75 in the 2026-2028 Base WMP, PG&E states that "…PSPS likelihood and PSPS consequence are calculated by the probability and consequence of each individual customer service_point_ID (SPID)." Describe each step in the procedure that PG&E takes to estimate the PSPS likelihood and consequence of each individual customer service_point_ID. a. Explain how PG&E predicts where PSPS events will occur for customers that PG&E has not had a PSPS event. b. Explain how PG&E uses each of the Model Inputs listed in Figure PG&E-8-1.3 to estimate PSPS likelihood for each individual customer service_point_ID. c. Page 68 notes that the "combination of weather, switching, and restoration is represented as total CMI". Are the values associated with weather, switching and restoration measured in CMI and just added together? Additionally, explain the following: i. How does PG&E estimate the severity of an expected weather period in which a customer is expected to be de-energized? ii. How did PG&E come up with the estimate that patrol and restoration typically take 11 hours? iii. Why did PG&E not use Estimated Time of Restoration?	a. PG&E's Outage PSPS Risk model does not predict future PSPS events in the traditional sense. Instead, it uses a data-driven approach that incorporates both historical and forecasted event data to estimate risk at the individual customer service_point_ID (SPID) level that has seen a PSPS outage in the past. b. The lookback events are leveraged by utilizing the frequency of events. The lookback includes all potential weather events and identifies the customer impacted and duration. In addition, the lookback also identifies what type of event it was (i.e. Dx only, Tx only, DxTx). Additionally, a customer weighting is applied to prioritize customers at higher risk. Essentially, there is a risk for each historical customer event, and that can be aggregated to the granularity of a customer, isolation zone, CPZ, or circuit. c. Yes, the values associated with weather, switching and restoration measured in Customer Minutes Interrupted (CMI) are added together. i. PG&E estimates severity through PG&E's Meteorology models and historic weather events. ii. This is a historical average over a few years; it was used to reflect a value as close to reality as possible, and it is included in the lookback events data as part of the total outage duration. iii. PG&E didn't use Estimated Time of Restoration (ETOR) because the default value in the lookback dataset is a placeholder (24 hours after All Clear) which is a conservative estimate. For real PSPS events, this gets updated based on actual conditions like terrain, daylight, and crew availability. But for hypothetical lookback events, no such updates were made. Also, ETOR reflects the time to restore the last customer on a Time Place (TP), which overstates the average restoration time for most customers. So, using it would misrepresent the typical customer experience.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	7	Public Safety Power Shutoff	7
189	SPD	004	SPD_004	25	No	SPD_004_Q25	In its description of CoRE on page 56 in the 2026-2028 Base WMP, PG&E states "Our perspective is that the Burn Probability is a deterministic assessment of local conditions at the time of an ignition event rather than a probabilistic outcome." There is no mention of Burn Probability in the Wildfire Consequence Model Version 4 (WFC v4) Documentation. Provide a step-by-step description of PG&E's deterministic assessment of Burn Probability. a. If PG&E's deterministic assessment of Burn Probability is conducted with SME judgement, list the criteria SME's are required to consider in their assessment. b. If PG&E's deterministic assessment of Burn Probability is conducted with SME judgement, explain how many SMEs participated in an estimation of Burn Probability based on the local conditions for each circuit segment.	Clarification of the terminology used in the documentation. These paragraphs are intended to link the terminology used in the WMP guidelines to the terminology used by the WFC modeling team. In the WMP guidelines, Burn Probability is the frequency with which a fire reaches a given location over a range of different conditions. For the WFC v4, the range of conditions used are the worst fire weather days (approximately 30 each year), determined by the meteorology department, for 2012-2022 and the outcomes of each set of real-world fire weather conditions is evaluated via Technosylva wildfire simulations. Given the conditions of a specific weather day, the fire simulations are deterministic, which is why the description uses the term "deterministic" even though a variety of outcomes under varying conditions are captured across all the weather days. The WFC ultimately needs to assign consequences to ignition locations (i.e. grid equipment), so the acres burned, structures reached, and flame length and rate of spread for each simulation (calculated based on conditions within the fire footprint) are assigned to the originating location for each weather day. For that reason, the actual "burn probability" values for locations reached by fires are not directly used in the WFC calculations and are therefore not called out by name in the documentation. a. Not applicable based on the explanation above. b. Not applicable based on the explanation above.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
190	SPD	004	SPD_004	26	No	SPD_004_Q26	What steps has PG&E taken to archive any data or models related to WDRM v3? a. Have any aspects of WDRM v3 not been archived? If so, explain why they were not archived. i. If any aspects of WDRM v3 were not archived, would this prevent a party from asking for data analysis using WDRM v3 in the future? b. How long will PG&E maintain its archive of the data or models related to WDRM v3? c. What data is PG&E maintaining of its previous asset data? What data would be missing if PG&E wanted to backcast the risk in pre-2023 years using WDRM v4? How is PG&E working to ensure that future models have the data necessary to backcast the risk to current system configurations?	a. WDRM v3 has been archived. The WDRM version archival includes all source data, model code, and output data. i. All aspects of WDRM v3 have been archived and will be available for future analysis requests. b. Currently, WDRM v3 has been archived indefinitely. However, as additional WDRM versions are produced for future WMPs, PG&E may adopt an end-of-life retention policy in the future to deprecate older model versions once all mitigation project work supported by a version has been completed or cancelled. c. Pursuant to agreement with SPD, PG&E will respond to this subpart by May 13, 2025.	Eddie Schmitt	4/30/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
190	SPD	004	SPD_004	26(ii)	Yes	SPD_004_Q26(ii)	What steps has PG&E taken to archive any data or models related to WDRM v3? a. Have any aspects of WDRM v3 not been archived? If so, explain why they were not archived. i. If any aspects of WDRM v3 were not archived, would this prevent a party from asking for data analysis using WDRM v3 in the future? b. How long will PG&E maintain its archive of the data or models related to WDRM v3? c. What data is PG&E maintaining of its previous asset data? What data would be missing if PG&E wanted to backcast the risk in pre-2023 years using WDRM v4? How is PG&E working to ensure that future models have the data necessary to backcast the risk to current system configurations?	c. What data is PG&E maintaining of its previous asset data? Asset history is not currently tracked in PG&E's GIS database. Historical asset data can be accessed through annually archived GIS database backups. Note that historical backups don't include future data quality improvements. As detailed for WDRM v3 for subparts (a) and (b), WDRM v4 source data, model code, and output data has been archived indefinitely. In addition, GIS configuration data going forward from January 1, 2023 only, has been snapshotted and archived monthly. What data would be missing if PG&E wanted to backcast the risk in pre-2023 years using WDRM v4? PG&E is assuming 'backcast the risk' means taking a version of the WDRM aligned around a specific configuration of the system (e.g. Jan 1, 2023 for WDRM v4) and re-aggregating the risk to a configuration of the system representing a prior date. WMP-Discovery 2026-2028_DR_SPD_004-Q26Supp01 Page 2 Primarily, the assignment of asset model risk to circuit segments would be missing prior to Jan 1, 2023. Additionally, there would be other missing data when backcasting to a previous circuit segment configuration. The distribution system is continuously changing; circuit segments are reconfigured, added, and deleted, GIS location data errors are corrected, equipment assets are replaced, etc. All these accumulated changes will result in a mismatch with grid configuration data from the January 1, 2023 snapshot used to generate WDRM v4. The further a backcast date is from the original snapshot, the more severe the mismatches will become. For each mismatch, the likelihood that the WDRM v4 would be unable to produce a risk value for a given asset or location increase. In turn, the aggregated risk value for any given circuit segment would likely be underreported, as any missing asset/pixel risk values would be assumed to be zero. How is PG&E working to ensure that future models have the data necessary to backcast the risk to current system configurations? PG&E is archiving monthly snapshots of data related to WDRM v4 to enable re creating historical configurations of the system. However, many of the issues mentioned previously around the risk data becoming stale over time will still be true, even when a historical configuration can be created. Additionally, it's challenging to	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
191	SPD	004	SPD_004	27	No	SPD_004_Q27	List all the feasibility constraints that are relevant to the decision trees found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP. a. How are these feasibility constraints operationalized within these decision trees? b. How are these feasibility constraints quantified? c. How are these feasibility constraints addressed in PG&E's Cost Benefit Analysis?	PG&E objects that the request is overbroad because there are many potential feasibility constraints depending on the specific circumstances of a given case. Due to the extensive range of feasibility constraints that may be considered in the design of undergrounding, covered conductor, and line removal projects, it is impracticable, if not impossible, to enumerate all potential factors. Therefore, although the list provided below attempts to thoroughly set forth common feasibility constraints that significantly impact the program, it may not be an exhaustive list. Below are primary examples of feasibility constraints considered within the scoping process : • High-impact dependencies and permitting requirements from federal, state and local agencies. • Soil impacts, such as granite/hard rock, waterway crossings, bio, cultural and environmental. • Terrain impacts, such as the need for retaining walls, grading/access, and vegetation removal. • Asbestos and other contaminants that are known to exist in the project scope. • Construction and restoration restrictions such as bird nests, helicopter sets, special equipment. • Easement and customer engagement limitations to building the scope • Constructability of alternatives whether it be due to overhead limitations or underground. a. Feasibility constraints are operationalized within the decision tree starting with a lead engineer who conducts a desktop feasibility review and determines a preliminary proposed scope that we compare to available alternatives. This preliminary proposed scope is sent out to a greaser scoping team who completes a combination of field and desktop reviews targeted at the locations proposed for work. The various reviews are evaluated in a desktop scoping meeting where the proposed scope may be modified to ensure constructability and to address dependencies that may impact timing and cost. b. Feasibility constraints influence the construction route of projects. For example, if there is steep terrain or significantly hard rock, the route will be adjusted based on the location of encountered. Cost considerations factors are incorporated into	Eddie Schmitt	4/30/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
192	SPD	004	SPD_004	28	No	SPD_004_Q28	On page 124 in the 2026-2028 Base WMP, PG&E states that it has adopted a consistent treatment of risk tolerance in its risk assessment and mitigation strategies. In an Administrative Law Judge Ruling dated April 22 2025 in the PG&E 2024 RAMP Proceeding (A.24-05-008), PG&E was ordered to not refer to "risk tolerance" to justify risk mitigation activities in the 2027 GRC Rate Case. a. Explain which mitigations discussed in the 2026-2028 WMP will need to be reconsidered in light of this order. i. Explain how and why risk tolerance was used as a justification for selecting those mitigation strategies. b. Explain what role risk tolerance played in the decision trees found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP. i. Explain how these three decision trees will change in light of the ALJ Ruling. c. Explain any other decision-making procedure, protocol, tool or other approach where a treatment of risk tolerance was integrated into PG&E's mitigation selection process. i. Explain how these approaches will change in light of the ALJ Ruling.	To date the CPUC has not adopted any Risk Tolerance standard. Accordingly we do not rely on any determination by PG&E or the CPUC regarding a Risk Tolerance standard as justification for our proposed mitigation strategies. However, in proposing our mitigation strategies we employ our professional experience, expertise, and prudent operator judgment to assess the level of safety event risk posed by wildfire. We do not assert that these risk levels are "intolerable." As the ALJ ruling correctly points out, and PG&E agrees, establishing Risk Tolerance standards for California is the Commission's responsibility. We believe, however, that understanding the potential for catastrophic WMP-Discovery 2026-2028_DR_SPD_004-Q028 Page 2 risk consequences is an important factor to be considered along with cost-benefit analysis. a. There is no mitigation that needs to be reconsidered in light of this order. A specific risk tolerance threshold was not used as a justification for selecting those mitigation strategies. b. A specific risk tolerance threshold was not used in the decision trees. c. Risk tolerance thresholds have not been integrated into PG&E's mitigation selection process for the 2026-2028 WMP.	Eddie Schmitt	4/30/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5

193	SPD	004	SPD_004	29	No	SPD_004_Q29	Provide a detailed explanation of how PG&E addresses tail risk in its risk models presented in the 2026-2028 Base WMP? a. Is the EORM impacted by PG&E's approach to addressing wildfire tail risk? If so, how? If not, why not? b. Is the WDRM impacted by PG&E's approach to addressing wildfire tail risk? If so, how? If not, why not? c. Is the WTRM impacted by PG&E's approach to addressing wildfire tail risk? If so, how? If not, why not?	a. Yes, Wildfire Risk Bow-tie Model is impacted by PG&E's approach to addressing wildfire tail risk by using a risk-averse Risk Attitude Function (also known as a Risk Scaling Function) which gives a greater weight in the risk model to low frequency, high consequence events than to high frequency, low consequence events.1 b. Yes, the WDRM is impacted by PG&E's approach to addressing wildfire tail risk as it influences the Cost Benefit Analysis (CBA) provided by Enterprise Operational Risk Management. The CBA influences the MAVF that is used as a transform to produce a single Wildfire Consequence Model value for historical fire outcomes (acres burned, structures destroyed, and fatalities) during model data processing. This, in turn, impacts the risk values produced by the WDRM. c. Yes, the WTRM is impacted by PG&E's approach to addressing wildfire tail risk as it influences the Cost Benefit Analysis (CBA) provided by Enterprise Operational Risk Management. The CBA influences the MAVF that is used as a transform to produce a single Wildfire Consequence Model value for historical fire outcomes (acres burned, structures destroyed, and fatalities) during model data processing. This, in turn, impacts the risk values produced by the WTRM.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
194	SPD	004	SPD_004	30	No	SPD_004_Q30	Provide a detailed explanation of how PG&E applies the risk scaling function in its risk models presented in the 2026-2028 Base WMP? a. Is the risk scaling function applied to the EORM? If so, how? If not, why not? b. Is the risk scaling function applied to the WDRM? If so, how? If not, why not? c. Is the risk scaling function applied to the WTRM? If so, how? If not, why not?	a. Yes, the same risk scaling function used in 2024 RAMP is applied to the EORM risk models presented in the 2026-2028 Base WMP. Please refer to 2024 RAMP Exhibit (PG&E-2), Chapter 2, Section C.6b, for the details on how PG&E applies the risk scaling function to convert monetized levels of an attribute into risk-adjusted levels of an attribute to prioritize the mitigation of risks characterized as low frequency/high consequence events, even though their expected loss might be the same as multiple high frequency events with low consequences. b. WDRM risk values are only scaled for calculating overall utility risk, which combines wildfire risk with outage program risk. For overall utility risk, the WDRM v4 risk results are scaled to match the absolute value of distribution wildfire risk determined by the EORM risk bow tie model. This is necessary because WDRM produces a set of relative, not absolute, risk values, and must be scaled before summing with other types of risks. c. WTRM risk values are only scaled for calculating overall utility risk, which combines wildfire risk with outage program risk. For overall utility risk, the WTRM v2 risk results are scaled to match the absolute value of transmission wildfire risk determined by the EORM risk bow tie model. This is necessary because WTRM produces a set of relative, not absolute, risk values, and must be scaled before summing with other types of risks.	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.4
195	SPD	004	SPD_004	31	No	SPD_004_Q31	On page 124 in the 2026-2028 Base WMP, PG&E states "PG&E's Investment Planning group leverages the CBRs and the RDF to prioritize the proposed investments to achieve risk reduction at a reasonable cost as part of its GRC forecast." a. How does PG&E leverage CBRs to prioritize investments in risk reduction? Explain. b. List which non-CBR aspects of the RDF PG&E leverages to prioritize investments in risk reduction. c. Explain how PG&E leverages those non-CBR aspects of the RDF to prioritize investments in risk reduction. c. Define "reasonable cost". Explain how PG&E incorporates "reasonable cost" as a constraint in its risk models.	a. PG&E notes that while the wildfire mitigations in its WMP are consistent with those that will be proposed in the GRC, there is a distinction between GRC forecasting activities and the work planning as described in the WMP. In the GRC, CBRs are one component that PG&E utilizes for the purpose of developing its overall funding request across all mitigation programs (gas transmission vintage pipe replacement programs, dam spillway remediation, wildfire undergrounding, etc.). Hence program-level CBRs are determined across all PG&E's Functional Areas and utilized as described in Exhibit (PG&E-2), Chapter 1 and Exhibit (PG&E-4), Chapter 3 of its 2027 GRC Testimony, which will be filed on May 15, 2025. In the WMP, the portfolio of projects are selected, partly based on project-level CBRs, but also based on other factors as described on page 125. b. Row 26 of the RDF states that mitigation programs can be selected based on other factors besides their CBRs. These factors are: - PG&E's obligation to consider Safety as the Top Priority WMP-Discovery 2026-2028_DR_SPD_004-Q031 Page 2 - The exercise of PG&E's Prudent Operator Judgement - Modeling Limitations and Uncertainty - Compliance Requirements. Exhibit (PG&E-2), Chapter 1 of PG&E's 2027 GRC Testimony provides an in-depth discussion on each of these factors. - PG&E considers CBRs, and the factors mentioned above on a case-by-case basis for each of its mitigations and documents the rationale for selecting them in the GRC Testimony. c. PG&E does not apply a strict definition of "reasonable cost" but considers the circumstances around each of its mitigation programs in its determination of reasonableness. Some programs have reasonable cost based on the risk reduction benefits they provide, i.e., their CBRs. Others are reasonable because they are the most economical way to address known vulnerabilities and threats or meet compliance requirements in an efficacious manner.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	3	Overview of WMP	3.6
196	SPD	004	SPD_004	32	No	SPD_004_Q32	On page 125 in the 2026-2028 Base WMP, PG&E explains that SME Judgement is integrated into the process of mitigation selection through "cross-functional working groups". Provide a detailed narrative description of how these cross-functional working groups operate. a. List each type of document or other kinds of information that is created at these cross functional working groups. i. How are these documents or other kinds of information retained? ii. Provide an example of each type of document or other kinds of information that was generated by the cross-functional working group when selecting mitigations on circuit segment CORNING 110185152. b. Do the working groups evaluate every asset within a circuit segment to determine which mitigation should be implemented? i. If so, explain how this is done. ii. If not, explain why not. c. List the inputs the SME's review to support the cross-functional working group's decision about which mitigation should be selected at a given circuit segment. i. Explain how the SME's use each of those inputs to support the cross-functional working group's decision about which mitigation should be selected at a given circuit segment.	a. During the cross-functional Scoping working group, PG&E creates the Design Basis Memorandum document for each job, which includes information on job location and authorities having jurisdiction, functional and estimating team notes, design considerations, and the following appendices: o APPENDIX A – ENROACHMENT KMZ & SUPPORTING DOCUMENTS o APPENDIX B – SEGMENTATION KMZ o APPENDIX C – SUBORDER TABLE o APPENDIX D – WORKSHEET DESCRIPTION o APPENDIX E – KEY SKETCHES o APPENDIX F – WILDFIRE BENEFIT COST ALALYSIS (WBCA) TOOL OUTPUTS o APPENDIX G – EC TAG LIST o APPENDIX H – LAND RIGHTS KMZ & SUPPORTING DOCUMENTS o APPENDIX I – VEGETATION MANAGEMENT & SUPPORTING DOCUMENTS o APPENDIX J – ENVIRONMENTAL KMZ & SUPPORTING DOCUMENTS o APPENDIX K – PUBLIC SAFETY KMZ & SUPPORTING DOCUMENTS o APPENDIX L – PII SCHEDULE o APPENDIX M – IDLE FACILITY i. The documents are retained in PG&E's Electronic Document Routing System (EDRS). ii. CORNING 110185152 is still at the early stages of scoping, and we have not developed the full job package. b. No, we do not evaluate every asset within a circuit segment to determine which mitigation should be evaluated. i. N/A ii. The Scoping working groups evaluate the circuit segment for overall feasibility, vegetation risk exposure, constructability, cost estimate, ingress/egress concerns, land and environmental impacts, permitting requirements, and risk reduction benefit to help develop the best mitigation. c. The cross-functional Scoping working group may provide the following insights and recommendations, which would help drive our decision for the mitigation selection. Although the list provided below attempts to thoroughly set forth common insights and recommendations provided during the working group, it may not be an exhaustive list, and additional factors could be discussed depending on the nature of the project: • Land / Encroachment / Environmental – Reviews work proposal and provides approximate time for land acquisition or permitting based on environmental issues. • Public Safety Specialist (PSS) – Provides recommendations on which poles to underground based on	Eddie Schmitt	4/30/2025	5/21/2025	5/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3
197	SPD	004	SPD_004	33	No	SPD_004_Q33	On page 125 in the 2026-2028 Base WMP, PG&E explains that the cross-functional working groups leverage both quantitative risk assessments and qualitative operational insights. Provide a list of the qualitative operational insights. a. Describe how each of these qualitative operational insights can contribute to the mitigation selection. i. Provide an example. Explain how and why each of these qualitative operational insights either did or did not inform the selection of mitigations on circuit segment CORNING 110185152. b. Describe how each of these qualitative operational insights are integrated into the decision trees found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP. i. Which of the steps in the decision-trees reviews these qualitative operational insights? How is that performed?	The following is a list of the key qualitative operational insights used by the crossfunctional working groups. Although the list provided below attempts to thoroughly set forth common qualitative insights that contribute to mitigation selection, it may not be an exhaustive list. I: • High tree strike potential, including an assessment of the current quantitative data with the vegetation management team. • Ingress/egress concerns and major historical fire data identified by the Public Safety Specialist (PSS). • Construction management feasibility, which accounts for local geology, including presence of hard rock, steep terrain, water crossings. • Environmental considerations, including sensitive habitats. • Cultural or historical considerations, including tribal lands. • Customer/community impacts, such as significant construction in a neighborhood by PG&E or another utility, land rights and/or permitting challenges. a. The CORNING 110185152 project is still in the early stages of scoping and PG&E can provide information on the qualitative operational insights once the analysis is complete. b. Qualitative insights on any given project are discussed during the Hybrid Analysis and Desktop Scoping Meeting (Figures 8.2.1-2 and 8.2.1-3). i. During the Desktop Scoping Meeting, the cross-functional team reviews the qualitative insights to answer the question "Are there any significant dependency or constructability limitations in the areas of impact?" (Figure 8.2.1-3).	Eddie Schmitt	4/30/2025	5/21/2025	5/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3
198	SPD	004	SPD_004	34	No	SPD_004_Q34	On page 125 in the 2026-2028 Base WMP, PG&E explains that when selecting a mitigation it considers relevant local factors on a case-by-case basis. a. Provide a list of local factors that PG&E considers when selecting a mitigation. b. Describe how this list of local factors was established by PG&E. i. Were any other factors considered in this process but removed from the final list? If so, explain why. c. Describe how each of these local factors can inform mitigation selection. d. Describe how each of these local factors are integrated into the decision trees found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP. i. Which of the steps in the decision-trees reviews these local factors? How is that performed?	a. When a mitigation alternative is evaluated at the circuit segment level, all aspects of the decision tree are considered for the circuit segment. PG&E defines local factors (factors that are unique to that project location) to be the same as the qualitative factors described in response to WMP 2026-2028 SPD_004_Q33 (with the exception the PSPS factors, which is a quantitative measurement and included below). The primary local factors considered when selecting a mitigation include items listed below. Although the list provided below attempts to thoroughly set forth common local factors that PG&E considers when selecting a mitigation, it may not be an exhaustive list. • High tree strike potential, including an assessment of the current quantitative data provided by the vegetation management team. • Ingress/egress concerns and major historical fire data identified by the Public Safety Specialist (PSS) • Construction management feasibility assessment, which accounts for local geology, including presence of hard rock, steep terrain, and water crossings. • Environmental considerations, such as sensitive habitats. • Cultural or historical considerations, such as tribal lands. • Customer/community impacts, such as significant construction in a neighborhood by PG&E or another utility, or land rights and permitting challenges. • Public Safety Power Shutoff (PSPS) history in the area, assessed by reviewing the PSPS polygon data. The polygon data shows the area identified for each PSPS event in the lookback period that identifies which of the overhead assets will have required deenergization. b. PG&E's list of local factors was developed by participants in the cross-functional Scoping working groups who leverage their historical knowledge and local requirements. These participants offer feedback informed by their engagement with key stakeholders, such as agencies, cities, counties, tribes, and local communities, to ensure alignment with relevant local regulations and address local needs. This collective input helped shape the list, ensuring PG&E effectively addresses local considerations when selecting mitigations. i. No additional factors were considered but removed from the list. c. These local factors can inform PG&E's mitigation selection at two key stages leading up to and during the scoping process: 1. When PG&E completes its initial Cost Benefit Analysis (Figure 8.2.1-2), and a Circuit Protection Zone (CPZ) does not meet the Cost Benefit Ratio (CBR) and Net Benefit requirements for an undergrounding solution, PG&E initiates a hybrid analysis. As part of the hybrid analysis, PG&E considers local factors such as tree strike potential, ingress/egress, and/or PSPS polygons affecting the CPZ. PG&E continues the reevaluation of	Eddie Schmitt	4/30/2025	5/21/2025	5/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3

199	SPD	004	SPD_004	35	No	SPD_004_Q35	On page 132 in the 2026-2028 Base WMP, PG&E states that it looks at its "highest risk circuit segments" to determine where to target the work included in the WMP. a. Within these "highest risk circuit segments", what aspects does PG&E consider in order to determine the timing of implementing mitigations on these "highest risk circuit segments"? i. Does PG&E consider the LoRE and CoRE values of these circuit segments when determining the timing of implementing mitigations on these "highest risk circuit segments"? If so, how? If not, why not?	a. PG&E is providing a response to this question for system hardening and undergrounding. PG&E selects system hardening and undergrounding based on the risk model's ranking of the highest risk circuit segments. Other WMP programs reference the risk model but focus on addressing the location where the specific risk is present. Circuit segments are selected for scoping from 1-N based on ignition risk rank. Certain circuit segments may be excluded if, for example, they are already hardened, are privately owned, are very short, or are already in a workplan. PG&E generally prioritizes execution of projects in the same order that scoping is completed. Once a project has completed scoping and other pre-construction activities (e.g. design, estimating and permitting) are complete, PG&E will begin construction as soon as practicable. While our approach is to begin hardening as soon as practicable after scoping is complete, there are limiting factors identified through the design/estimating and permitting process that impact when projects can be implemented, such as: • Construction management feasibility which accounts for local geology, including presence of hard rock, steep terrain, water crossings; • Environmental considerations including sensitive habitats; • Cultural or historical considerations including tribal lands; and • Customer/community impacts, such as significant construction in a neighborhood by PG&E or another utility, land rights and/or permitting challenges. When it seems like a project may be delayed, PG&E also works to improve timing (complete mitigations more quickly) by separating projects into multiple phases and/or sub-phases and limiting the timing constraints to smaller sections of work. i. No, LoRE and CoRE values are not considered independently when planning for the sequencing and timing of projects or sub-projects. While both likelihood and consequence are important components of risk, their product (i.e., risk) is the primary focus when prioritizing mitigations. More specifically, PG&E uses the density of risk, such as risk per mile, to rank circuit segments 1-n. PG&E then prioritizes projects for execution in ascending risk rank order based on the model used at the time of selection, while considering the operational limitations noted in	Eddie Schmitt	4/30/2025	5/21/2025	5/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5.5.2
200	SPD	004	SPD_004	36	No	SPD_004_Q36	Throughout the 2026-2028 Base WMP, PG&E uses the terms system hardening, grid hardening, and resiliency mitigation activities to describe the same category of mitigations, namely undergrounding, covered conductor and distribution line removal. Explain why PG&E uses three different terms for this category of mitigations. a. Are there differences between these terms? If so, explain.	Note: all references in this response are specific to distribution-related terms in PG&E's 2026-2028 Base WMP, R0, April 4, 2025. Resilience Mitigations Resilience Mitigations describe one of the four categories of mitigations that support PG&E's foundational framework of risk-information decision-making designed to minimize ignition risk and outage impacts.1 PG&E's system resilience activities are critical to permanently reducing wildfire risk, minimizing negative aspects of PSPS and EPSS, and strengthening the grid against extreme weather events (p. 6). System Resilience describes mitigations designed to reduce ignition risk by changing how PG&E's grid is constructed and operated (2023-2025 Base WMP, R8, p. 255). Resilience Mitigation describe a broader category of mitigations than just system hardening. While Resiliency Mitigations include system hardening activities (distribution undergrounding, distribution covered conductor, distribution line removal), it also includes non-system hardening mitigations, such as distribution pole replacement and reinforcement and HFTD/HFRA open tag reduction - distribution (2026-2028 Base WMP, R0, Figure PG&E-6.1.3.3-1). System Hardening System hardening describes two distribution system hardening initiatives: 1. Covered conductor (CC) installation and line removal, including remote grids (GH-12); and 2. Distribution undergrounding (GH-04). Grid Hardening WMP Section 8.8.2 is called "Grid Hardening." PG&E uses the term "grid hardening" in our Section 8.8.2 narrative to align to the title of WMP Section 8.8.2 as specified by Energy Safety in its 2026-2028 WMP Guideline2. In PG&E's Section 8.8.2 narrative, we state that grid hardening projects include undergrounding (p. 345). The term is also specified by Energy Safety in Area for Continuous Improvement (ACI) PG&E-25I-03, Continuation of Grid Hardening Joint Studies, so PG&E uses the term in its response to that ACI. a. While grid hardening and system hardening are basically synonymous, the key distinction among the three terms PG&E uses in the WMP is that Resilience	Eddie Schmitt	4/30/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8
201	SPD	004	SPD_004	37	No	SPD_004_Q37	On page 135 in the 2026-2028 Base WMP, PG&E states "Over time, undergrounding also has lower operations and maintenance expenses." Provide documentation that corroborates this statement. a. What is the time scale of the analysis that led to this statement? Why was that timescale used? b. How would the results of the analysis be different if an alternative time scale was used? Consider the possible results of the analysis if the following time scales were used: i. Annual, ii. Decadal, iii. Multi-decadal (this must include the decommissioning and replacement costs)	a. PG&E recognizes that the term "time scale" in the question could be interpreted in multiple ways. In our response, we address two possible interpretations: (1) the timeframe of the data used to develop the analysis and (2) the timeframe associated with the application of the results of the analysis. 1) The average annual cost considers between 1 to 5 years of historical or forecast data for the O&M activity. The timescales considered in the underlying data vary due to the availability of data for each of the O&M cost types (e.g., some cost types leverage yearly historical costs, whereas other cost types are based on the 2023-2026 GRC forecast). Undergrounding can reduce some O&M costs, such as routine maintenance, vegetation management costs, patrols and inspections, Enhanced Power Safety Settings (EPSS) and Public Safety Power Shutoffs (PSPS). 2) The time scale of the analysis that led to this statement is one year. This statement is based on an expected average annual cost per mile for operations and maintenance (O&M) activities. The assumption is that the average annual cost per mile would be applicable for the useful life of the asset (i.e., 55 years for undergrounding). Please see "WMP-Discovery2026-2028_DR_SPD_004-Q037Atch01.xlsx", which outlines examples of expected O&M costs as an average annual cost for a mile of undergrounding primary lines compared to an unhardened baseline scenario. The lower operations and maintenance costs are assumed to be relative to a hypothetical baseline assumption for the cost of operations and maintenance for an unhardened mile in the current system. As more of the system is undergrounded, the average annual avoided costs will increase. This cumulative effect leads to long-term benefits. Further information on the cost assumptions and underlying data will be included in the final Wildfire Benefit Cost Analysis (WBCA). b. The total O&M avoided costs are not effected by the time period considered. i. It is assumed that any avoided costs are on an average annual cost per mile basis and would not be significantly impacted by the time-scale considered. ii. It is assumed that any avoided costs are on an average annual cost per mile	Eddie Schmitt	4/30/2025	5/9/2025	5/9/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.2
202	SPD	004	SPD_004	38	No	SPD_004_Q38	On page 136 in the 2026-2028 Base WMP, PG&E states "For many of the mitigation programs, wildfire risk is the primary driver of prioritization." List the mitigation programs where wildfire risk is not the primary driver of prioritization. a. For each mitigation program in this list, explain what is the primary driver of prioritization and why	Wildfire risk is a primary driver of prioritization for all of PG&E's mitigation programs. On page 136 of the 2026-2028 Base WMP, PG&E explains that it may also consider reliability risk when prioritizing mitigation programs pursuant to the requirements of Senate Bill 884. As such, certain mitigation programs may have reliability risk as a driver for prioritization as well as wildfire risk, but there are no mitigation programs for which wildfire risk is not a primary driver of prioritization. Please see, for example, Table 5-5 in the 2026-2028 Base WMP and the column titled "Top Risk Contributors."	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5
203	SPD	004	SPD_004	39	No	SPD_004_Q39	For Table 6-3 in the 2026-2028 Base WMP, PG&E provided an "Activity-Effectiveness-Wildfire Risk" value for each activity listed. However, for six of these activities PG&E did not provide Cost Benefit Ratios.3 a. Provide the Cost-Benefit Ratios for each of these activities as is required by D.22-12-027. b. If these calculations of CBR vary from what was submitted in PG&E's 2024 RAMP Application, explain how much they vary and why.4 c. Complete Table 6-3 for all activities listed in this WMP. Add the Initiative Activity Tracking ID as a column in the completed Table. Present this completed version of Table 6-3 in an Excel spreadsheet.	a. The following table uses 2026-2028 program Cost Benefit Ratios (CBR) values (unless otherwise noted) from the enterprise risk models and investment planning forecasts to be submitted as part of our May 2027 GRC filing. The two transmission programs (conductor segment replacement and shunt splice installation) cost benefit scores are currently unavailable and will be provided later. b. The table below compares the RAMP CBRs and CBRs provided in subpart (a). The original CBR submitted in Table 6-3 are based on February vintage GRC bowties and analysis that was available at the time of the 2026-2028 WMP filing. The values provided in subpart (a) are from PG&E's finalized bowties and analysis to be submitted in our May filing of the 2027 GRC using Baseline 2026. A brief description on the variance drivers are described below. a) Reduction driven by higher percentage of pole work that has a lower CBR value when compared to non-pole capital and expense projects b) New program for 2027 GRC c) Increase driven by a lower estimated unit cost of work and refreshed outage to ignition ratio when compared to RAMP filing d) Risk Reduction from RAMP to GRC is lower while costs remained relatively the same e) Increase driven by the exclusion of secondary and service mile scoped f) Reduction driven by the increase in allocated costs tied to PSPS g) Reduction driven by lower EPSS effectiveness	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6
203	SPD	004	SPD_004	39(a)	Yes	SPD_004_Q39(a)	For Table 6-3 in the 2026-2028 Base WMP, PG&E provided an "Activity-Effectiveness-Wildfire Risk" value for each activity listed. However, for six of these activities PG&E did not provide Cost Benefit Ratios.3 a. Provide the Cost-Benefit Ratios for each of these activities as is required by D.22-12-027. b. If these calculations of CBR vary from what was submitted in PG&E's 2024 RAMP Application, explain how much they vary and why.4 c. Complete Table 6-3 for all activities listed in this WMP. Add the Initiative Activity Tracking ID as a column in the completed Table. Present this completed version of Table 6-3 in an Excel spreadsheet.	a. This table has been updated to include the two transmission programs (conductor segment replacement and shunt splice installation) cost benefit scores. Additionally, the PSPS and EPSS CBR were updated as an error was noted in the original submission. WMP activity name Cost Benefit Score - Overall Risk (2026-2028) Cost-Benefit Score - Wildfire Risk (2026-2028) Cost Benefit Score - Outage Program Risk (2026-2028) PSPS (2027-2030 CBR) 25.3 41.5 16.2 EPSS (2027-2030 CBR) 33.8 58.1 -4.3 WMP activity name Cost Benefit Score - Overall Risk (2026-2028) Cost-Benefit Score - Wildfire Risk (2026-2028) Cost Benefit Score - Outage Program Risk (2026-2028) Transmission – Shunt Splice Installation 30.43 28.36 2.07 Transmission – Conductor Segment Replacement 5.43 3.93 1.5	Eddie Schmitt	4/30/2025	5/21/2025	5/21/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6
204	SPD	004	SPD_004	40	No	SPD_004_Q40	On page 152 in the 2026-2028 Base WMP, PG&E provides an explanation for how it calculated Activity Effectiveness – Overall Utility Risk. The total value for Wildfire Risk (Dx, Tx, Sub) is $19,424 Million. Explain why this value is different from the $19,578 Million expressed in Figure 6.1.3.2-1. a. Explain why the PSPS and EPSS values here are presented as "Risk" but in Figure 6.1.3.2-1 these values are referred to as "Consequence". b. Explain why the value of Wildfire Risk (Dx, Tx, Sub) is different, but the values for PSPS and EPSS Risk on page 152 remain exactly the same as the values for PSPS and EPSS Consequence in Figure 6.1.3.2-1.	The value expressed in Figure 6.1.3.2-1 is the aggregated baseline risk value and includes underground. This is why the sum of the Dx, Tx, and Sub Wildfire Risk differs on page 152 from Figure 6.1.3.2-1. a. "Consequence" in Figure 6.1.3.2-1 means the total consequence of all risk events which represents the same value as "Risk" on page 15. This is because Risk Value is calculated as the product of Exposure, Likelihood of Risk Event (LoRE) and Consequence of Risk Event (CoRE), and as such, the words Risk and Consequence are used interchangeably from page 152 to Figure 6.1.3.2-1. b. The $19,424 million value of Wildfire Risk (Dx, Tx, Sub) on page 152 includes overhead distribution, overhead transmission, and substation wildfire risk, whereas the $19,578 million value in Figure 6.1.3.2-1 also includes underground wildfire risk. The values for PSPS and EPSS Risk on page 152 remain exactly the same as the values for PSPS and EPSS Consequence in Figure 6.1.3.2-1 for the reason explained in the answer to subpart (a) above.	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3

205	SPD	004	SPD_004	41	No	SPD_004_Q41	On page 153 in the 2026-2028 Base WMP, PG&E describes the Activity Effectiveness – Wildfire Risk calculation and notes that a study was conducted with subject matter experts (SME) who were asked to "fill out a questionnaire about the effectiveness of these activities against roughly 2,000 failure modes". a. How many SMEs participated in this study? i. Provide a list of the expertise for each SME that participated in this study. b. How does the questionnaire compare with the mitigation effectiveness study submitted to SPD as "WMP-Discovery2026-2028_DR_SPD_001-Q010Atch01"? c. Provide a narrative explanation of the questionnaire and how SMEs were expected to fill it out. i. Describe what is meant by categorical level of effectiveness. ii. If a scale was used for SMEs to respond to the questionnaire, provide a detailed explanation of that scale and how it was established. iii. If a scale was used, was a variance and standard deviation calculated for the SME responses to each failure mode? If so, provide a table that displays the mean, variance and standard deviation for the SME's scaled responses to each of the failure modes. d. Provide a copy of the questionnaire about the effectiveness of these activities against the failure modes. e. Provide a copy of the results of the study PG&E notes on page 153 in the 2026-2028 Base WMP.	a. Approximately 3-4 SMEs from the Grid Design team participated in the study. i. The SMEs are Senior Electric Distribution Engineers whose position requires a Bachelor of Science in Electrical Engineering from a college or university accredited by the Accreditation Board of Engineering and Technology. The Senior Electric Distribution Engineers have a minimum of 8 years' experience in engineering and design. Some of the Grid Design Engineers are licensed professional engineers with the state of California though this license was not required for the completion of the study. b. The mitigation effectiveness study submitted to SPD as "WMP-Discovery2026-2028_DR_SPD_001-Q010Atch01.xlsx" are the outputs from the mitigation effectiveness study. SMEs were asked to provide an estimated level of effectiveness for each mitigation activity considering various combinations of outage cause, supplemental cause, equipment affected, and equipment condition. c. The questionnaire listed observed combinations of outage cause, supplemental cause, equipment affected, and equipment condition. For each combination, and for each mitigation activity, SMEs were asked a to assign a level of effectiveness such as "None," "Medium," or "High." Table PG&E-8.2.1-2 in PG&E's 2026-2028 WMP is an example of this analysis. i. Categorical level of effectiveness refers to a qualitative description of the estimated mitigation effectiveness of an activity against an outage considering combinations of the cause, supplemental cause, equipment affected, and equipment condition that have been observed across historic outages. ii. The scale used by SMEs to respond to the questionnaire is described in PG&E's 2026-2028 Base WMP (pages 188-189): • All: 100 percent effective – Assumes no ignition events; • Very High: 90 percent effective – Assumes the mitigation addresses most ignition concerns, but still leaves a potential for ignition; • High: 75 percent effective – Assumes the mitigation provides significant ignition reduction; however, there is still a chance for contact or failure; • Medium High: 60 percent effective – More than likely ignition reduction for an event; • Medium: 40 percent effective – Less probable ignition reduction for an	Eddie Schmitt	4/30/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.1.3
206	SPD	004	SPD_004	42	No	SPD_004_Q42	Related to the explanation of the Cost Benefit Ratios described on pages 154-155 in the 2026-2028 Base WMP, provide an explanation of how PG&E addressed "discounting of inflation". a. Did PG&E use a specific risk scenario specified in D.24-05-064? i. If so, explain which scenario and why that was chosen. ii. If not, explain why not. Also explain how PG&E addressed discounting and why it chose that method.	PG&E addressed "discounting of inflation" by discounting values by a real discount rate in its present value evaluations. In these evaluations, the effects of inflation are incorporated by multiplying values by the inflation rate to obtain nominal future values before discounting by the nominal discount rate over the applicable timeframe to obtain the present value. The effective multiplier resulting from these operations is equivalent to discounting by a real discount rate evaluated as $\frac{1+r}{1+i} - 1$, where r is the real discount rate, i is the nominal discount rate, and i is the inflation rate. PG&E utilized its After-Tax Weighted Average Cost of Capital (ATWACC) as the nominal discount rate for discounting present value evaluations, which corresponds to the "WACC Discount Rate Scenario" in D.24-05-064. The ATWACC was selected as the nominal discount rate in alignment with PG&E's current Enterprise Risk Model evaluations, which similarly use the ATWACC rounded to the nearest 50 basis points (or 0.5 percent) as the nominal discount rate. PG&E chose to use ATWACC because it reflects PG&E's financing costs, and also believes that it is also a proper discount rate for the benefits in the numerator as well as costs in the denominator because benefits WMP-Discovery 2026-2028_DR_SPD_004-Q042 Page 2 are monetized based on willingness to pay (safety), market/replacement costs (financial, gas reliability), or both (electric reliability	Eddie Schmitt	4/30/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	3	Overview of WMP	3.6
207	TURN	004	TURN_004	1	No	TURN_004_Q1	Regarding Table 5-5 on page 103 and PG&E's risk prioritization, why doesn't PG&E use circuit by risk per mile rather than absolute risk? Does PG&E agree that risk per mile of each CPZ is a more accurate way to capture the risk of each CPZ relative to each other? Please explain why or why not.	Table 5-5 is a list of CPZs with the highest overall utility risk in PG&E's service territory; however, PG&E does not prioritize work based on this table. PG&E typically prioritizes work based on the normalized risk, or risk per mile. PG&E agrees that risk per mile is a more accurate metric than total risk to compare the relative risk of each CPZ. Historically, PG&E has emphasized wildfire risk per mile, or per pixel in some versions of the WDRM, but also recognizes the importance of overall utility risk per mile.	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/9/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	5	Risk Methodology & Assessment	5
208	TURN	004	TURN_004	2	No	TURN_004_Q2	Regarding Table 6.1.3-1 on page 128: a. Why does line removal with remote grid result in 98% effectiveness? Are all overhead lines removed in each of these instances or are lines undergrounded? Please provide an explanation using an example project to illustrate the mitigation effectiveness. b. Please provide the combined mitigation effectiveness of PSPS and EPSS. i. Please provide all supporting calculations/assumptions in Excel.	REGARDING TABLE 6.1.3-1 ON PAGE 128: a. Remote grid systems typically serve customers through low voltage overhead lines. While all high voltage overhead lines are removed, the analysis for this mitigation assumed that the remaining secondary and service lines still pose an ignition risk, resulting in approximately 98% reduction of the overall wildfire risk. The absolute removal of all lines, including both primary and secondary voltage, would result in the elimination of all ignition risk, or 100% effectiveness, since no source for ignition would be present. b. Based on Table 6.1.3-1 on page 128 and "WMP-Discovery2026-2028_DR_TURN_002-Q005Atch01.xlsx", PSPS effectiveness is estimated to be 84%. Based on "WMP-Discovery2026-2028_DR_TURN_004-Q002Atch01.xlsx", tab "EPSS_effectiveness_calculation", EPSS effectiveness is estimated to be 69%. PSPS and EPSS mitigation programs are assumed to operate independently. Effectiveness represents the probability that a program successfully mitigates a risk. The ineffectiveness is the chance that the program does not mitigate the risk. When programs operate independently, the chance that both programs do not mitigate the risk is the product of their individual ineffectiveness: The combined effectiveness of two independent mitigation programs is then the chance that at least one of the programs mitigates the risk, which is the same as the complement of both programs being ineffective: Therefore, the combined effectiveness is approximately 95%. i. The supporting calculations are provided in file "WMP-Discovery2026-2028_DR_TURN_004-Q003Atch01.xlsx", tab "Combined effectiveness calc".	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3
209	TURN	004	TURN_004	3	No	TURN_004_Q3	Regarding Figure 6.1.3.2-1 on page 136 a. Please provide this figure in Excel with all supporting data, calculations, and assumptions. b. Please re-calculate this figure when implementing planned mitigations for PSPS and EPSS consequences in 2026. i. Please provide in Excel with all supporting data, calculations, and assumptions.	a. Please see the attachment "WMP-Discovery2026-2028_DR_TURN_004-Q003Atch01.xlsx" for the requested information. The response to subpart (a) is located in "Q003_a" worksheet and the response to subpart (b) is located in the "Q003_b" worksheet of the attachment. b. Please see above.	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3
210	TURN	004	TURN_004	4	No	TURN_004_Q4	Section 6.2.1.2, page 150 states "The total number of miles within the HFTD and HFRA = 4,250 circuit miles." a. Shouldn't the total number of circuit miles be closer to 25,000? b. Please explain the 4,250 figure and what it represents.	To clarify, the quoted language on page 150 of the WMP is part of Energy Safety's prompt for this section and was provided by Energy Safety in the WMP Guidelines. It was included as an example to help understand the information provided in this section and is not language that PG&E provided. PG&E's response to Energy Safety's prompt begins after the solid divider line at the bottom of page 150.	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/9/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6.2.1.2
211	TURN	004	TURN_004	5	No	TURN_004_Q5	Section 8.2.1, page 181 states "PG&E will analyze the proposed CC route to determine if there are areas with tree strike risk or locations that could be subject to ingress/egress issues." a. Please define "tree strike risk." b. If "tree strike risk" is found to be present, does this mean the CC is naked out? Please explain. c. Please define ingress/egress issues as used here.	a. For purposes of the System Hardening program, tree strike risk refers to the likelihood of trees falling into the overhead span, regardless of wind speed or direction, and breaking a proposed overhead hardened span. An area with a tree strike score of 6 or higher is identified as "Area of impact identified, relocate to underground preferred." In both cases an area with a tree strike score of 0-5 is identified as "No area of impact identified, OH in place preferred." The logic surrounding tree strike is shown in Figure PG&E-8.2.1-2 and in Figure SRN-PG&E 23-05-06A of PG&E's 2026-2028 Base WMP. b. If a high tree strike potential is identified, our preferred approach is to underground at that location, provided that it meets the Cost-Benefit Ratio (CBR) and Net Benefit criteria as described in Section 8.2, Figure PG&E-8.2.1-2, of the WMP. However, if undergrounding is not feasible or does not satisfy the CBR and/or Net Benefit requirements, we will collaborate with PG&E's vegetation management team to determine whether covered conductor (CC) and associated vegetation removal is an acceptable alternative. c. Ingress and egress routes are evaluated by a PG&E Public Safety Specialist, whose guidance ensures our underground design supports safe and efficient movement for civilians and first responders during an emergency. As noted in "WMP-Discovery2026-2028_DR_TURN-002_Q010.pdf", the PSS considers many factors when evaluating ingress and egress concerns, and it is not possible to identify each and every criterion and how that criterion particularly impacts risk in every situation. The specific facts and circumstances of each situation must be considered on a case by case basis. The specific facts and circumstances of a case, when taken together, form our understanding of the real time risk associated with a particular area. Some of the factors considered include, but are not limited to: • Population density • Time of day (there are differences between evacuating communities at night when most people are at home compared to during the day when fewer people are at home) • Amount of time the public would need to evacuate or shelter in place • Notifications and information made available to the public	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
212	TURN	004	TURN_004	6	No	TURN_004_Q6	Regarding PG&E's System Hardening Project Process Decision Tree and Process Figures 8.2.1-1, 8.2.1-2, and 8.2.1-3 on pages 182–84: a. Does PG&E utilize project-specific unit costs for CC and UG as opposed to generic averages? Please explain.	c. Ingress and egress routes are evaluated by a PG&E Public Safety Specialist, whose guidance ensures our underground design supports safe and efficient movement for civilians and first responders during an emergency. As noted in "WMP-Discovery2026-2028_DR_TURN-002_Q010.pdf", the PSS considers many factors when evaluating ingress and egress concerns, and it is not possible to identify each and every criterion and how that criterion particularly impacts risk in every situation. The specific facts and circumstances of each situation must be considered on a case by case basis. The specific facts and circumstances of a case, when taken together, form our understanding of the real time risk associated with a particular area. Some of the factors considered include, but are not limited to: • Population density • Time of day (there are differences between evacuating communities at night when most people are at home compared to during the day when fewer people are at home) • Amount of time the public would need to evacuate or shelter in place • Notifications and information made available to the public • Road infrastructure (e.g., road size, number of lanes, type of surface, destination) • Fuel types along an evacuation corridor (e.g., grass vs. brush vs. timber) • Elevated Weather conditions (e.g., red flag days including high temperatures, high winds, low relative humidities) • Topography/terrain (do evacuation routes place evacuees in danger due to steep slopes, drainages, and chimneys along a corridor which are often associated with extreme fire behavior) • Human factors (e.g., elderly, special needs, evacuating large and small pets, knowledge or experience of citizens living in high fire hazard areas) • Location of overhead electrical assets (e.g., poles proximity to the road's shoulder and conductor crossings over those ingress/egress thoroughfares should they become impacted by fire and fall onto the evacuation corridor) • Firefighter access (e.g., gravity, type, size of equipment, staging areas, etc.	A Mireille Fall-Fry	5/1/2025	5/9/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1

213	TURN	004	TURN_004	7	No	TURN_004_Q7	Regarding Table 8.2.1-2 on page 189, please explain whether mitigation effectiveness is calculated based on SME judgement. In each case where SME judgement is used, please explain why PG&E does not utilize data/riven methods to calculate mitigation effectiveness.	All effectiveness ratings in Table 8.2.1-2 are calculated based on SME review. These ratings are used in combination with available outage data (as a proxy for ignitions) to estimate mitigation effectiveness. The SME-based approach allows PG&E to calculate a realistic effectiveness estimate based on limited mitigation-specific outage data. Relying entirely on a data-based approach to calculate effectiveness for these mitigations would not yield meaningful results. For example, as detailed in "RAMP-2024_DR_TURN_006-Q004.pdf" and "WMP-Discovery2026-2028_DR_TURN_003-Q008.pdf", observed ignition data is quite limited for novel system hardening mitigations. Only three reportable ignitions have been observed on covered conductor since its broad application began around 2018. Much of PG&E's covered conductor installation has also been in wildfire rebuild areas (in burned-scarred areas with limited vegetation growth) or purposefully installed in areas of low tree strike risk in alignment with PG&E's decision tree. Furthermore, limited degradation of these assets has occurred due to their recent installation, biasing observed effectiveness estimates. For all of these reasons, it is necessary to rely on SME input to inform these estimates. Another potential issue with purely data-driven calculation methods, is the overlap between mitigations deployed simultaneously. For example, EPSS and covered conductor can be complimentary mitigations, but using only observed data, it is difficult to bifurcate their effectiveness contributions ,or even identify a statistically valid data sample where these mitigations were concurrently operational. The SME-based analysis allows PG&E's experts to apply their knowledge and experience to assess those scenarios despite the limited deployment of these mitigations. WMP-Discovery 2026-2028_DR_TURN_004-Q007 Page 2 Finally, the actual application of the effectiveness values referenced in Table 8.2.1-2 is much more detailed than depicted in this simple table. Specifically, driver-level effectiveness values are applied to the unique risk drivers of WDRM, which themselves are derived from data-driven observations and events in PG&E' system of record. This allows PG&E to calculate specific mitigation effectiveness values for each individual	A Mireille Fall-Fry	5/1/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
214	TURN	004	TURN_004	8	No	TURN_004_Q8	Regarding Table 8.2.1-5 on page 195: a. Please provide this table in Excel with supporting calculations. b. Please add the following information to the Excel table and include all data, calculations, and assumptions: i. Annual and cumulative number of overhead miles in each year from 2023 (recorded) to 2026 (forecast) for each activity separately (covered conductor and undergrounding). ii. Annual and cumulative costs in each year from 2023 to 2026 (including forecast years) for each activity separately (covered conductor and undergrounding). Please provide supporting calculations. iii. Annual and cumulative risk reduction from all other primary wildfire mitigations from 2023-2026 (including forecast years). iv. Annual and cumulative costs from all other primary wildfire mitigations from 2023-2026 (including forecast years). v. Annual and cumulative costs to implement EPSS and PSPS in each year (separately) from 2023-2026 (including forecast years), if not previously included.	a. Please see "WMP-Discovery2026-2028_DR_TURN_004-Q008Atch01.xlsx" at the tab titled "Table 8.2.1-5" for a version of Table 8.2.1-5 in Excel format; Please see "WMP-Discovery2026-2028_DR_TURN_004-Q008Atch01.xlsx" at the tab titled "Supporting Data" for the risk reduction data upon which Table 8.2.1-5 is based. Please note that, for clarity, PG&E has removed circuit segments with no listed risk reduction from the "Supporting Data" tab. The risk reduction values provided in Table 8.2.1-5 are sums of the segment-level risk reduction values provided. Please note that the calculations underlying each segment-level risk reduction value were WMP-Discovery 2026-2028_DR_TURN_004-Q008 Page 2 conducted in the Foundry Platform, and PG&E is not able to re-create them in Excel in a reasonably timely manner.	A Mireille Fall-Fry	5/1/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1
214	TURN	004	TURN_004	8(s)	Yes	TURN_004_Q8(s)	Regarding Table 8.2.1-5 on page 195: a. Please provide this table in Excel with supporting calculations. b. Please add the following information to the Excel table and include all data, calculations, and assumptions: i. Annual and cumulative number of overhead miles in each year from 2023 (recorded) to 2026 (forecast) for each activity separately (covered conductor and undergrounding). ii. Annual and cumulative costs in each year from 2023 to 2026 (including forecast years) for each activity separately (covered conductor and undergrounding). Please provide supporting calculations. iii. Annual and cumulative risk reduction from all other primary wildfire mitigations from 2023-2026 (including forecast years). iv. Annual and cumulative costs from all other primary wildfire mitigations from 2023-2026 (including forecast years). v. Annual and cumulative costs to implement EPSS and PSPS in each year (separately) from 2023-2026 (including forecast years), if not previously included.	b. Please see attachment "WMP-Discovery2026-2028_DR_TURN_004-Q008Supp01Atch01.xlsx", worksheet 'Bb, Bbi' for the requested information. Please note the following regarding the response to subparts B(b)(i) and B(b)(ii): • The values reported in the Covered Conductor category include Line Removal work. • The values reported in the Undergrounding category include Community Rebuild work. • The values reported represent work under PG&E's System Hardening and Undergrounding programs. i. Annual and cumulative miles for overhead hardening and undergrounding (2023-2026) have been provided. • Includes miles from non-System Hardening programs (Work Requested by Others, Capacity, Idle Facilities, etc.) in HFTD. No financial is provided for those sub-projects. ii. Annual and cumulative costs for overhead hardening and undergrounding (2023-2026) have been provided. • Includes readiness costs for sub-projects to be completed in future years. • Includes close-out costs for sub-projects that have been completed in prior years. iii. Per confirmation received from TURN on May 13, 2025, this response will be provided by May 16, 2025. For the purposes of responding to subpart B(b)(iii) and (iv), PG&E interprets "other primary wildfire mitigations" as: • PSPS (MAT Codes: WPN, WFP). • EPSS (MAT Codes: 05#, 09B, 21#, 3U5, 4BD, 46#, 46B, 49D, 49E, 49G, 63C, BAF, BAH, BFJ, BHE, DDI#, FZA, FZE, GC2, HGD, HXA, IG#). iv. Annual and cumulative costs for other primary mitigations (2023-2026) have been provided. Please see attachment "WMP-Discovery2026-2028_DR_TURN_004-Q008Supp01Atch01.xlsx", worksheet 'Bbi, Bbv," for the requested information. v. Annual and cumulative costs to implement EPSS and PSPS (2023-2026)	A Mireille Fall-Fry	5/1/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1
214	TURN	004	TURN_004	8(s2)	Yes	TURN_004_Q8(s2)	Regarding Table 8.2.1-5 on page 195: a. Please provide this table in Excel with supporting calculations. b. Please add the following information to the Excel table and include all data, calculations, and assumptions: i. Annual and cumulative number of overhead miles in each year from 2023 (recorded) to 2026 (forecast) for each activity separately (covered conductor and undergrounding). ii. Annual and cumulative costs in each year from 2023 to 2026 (including forecast years) for each activity separately (covered conductor and undergrounding). Please provide supporting calculations. iii. Annual and cumulative risk reduction from all other primary wildfire mitigations from 2023-2026 (including forecast years). iv. Annual and cumulative costs from all other primary wildfire mitigations from 2023-2026 (including forecast years). v. Annual and cumulative costs to implement EPSS and PSPS in each year (separately) from 2023-2026 (including forecast years), if not previously included.	b. iii. For the purposes of this response, please note that PG&E interprets "other primary wildfire mitigations" as PSPS and EPSS. Please see "WMP Discovery2026-2028_DR_TURN_004-Q008Supp01Atch01.xlsx" for PG&E's best available estimates of the annual and cumulative percent risk reductions requested.	A Mireille Fall-Fry	5/1/2025	5/19/2025	5/19/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1
215	TURN	004	TURN_004	9	No	TURN_004_Q9	Regarding Table 8-5-2 on page 321, please provide these figures on an annual basis, from December 31, 2015, through 2023. At a minimum, please provide the 181+ figures.	Please see the table below for the requested information. Please note that, to align with Table 8-5-2 on page 321, the counts in this table include notifications that: (1) were open as of Dec 31st of each year; (2) were open past their authorized end date; (3) were GO 95 Level 2 or Level 3; and (4) had MAT codes	A Mireille Fall-Fry	5/1/2025	5/6/2025	5/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	0	No	8	Grid Design, Operations, and Maintenance	8.5
216	TURN	004	TURN_004	10	No	TURN_004_Q10	Please provide a list of mitigations PG&E has examined for how to reduce the "consequence" (outages and outage time) of PSPS and EPSS. Please include the following: a. Mitigation effectiveness of each mitigation, including all workpapers and an explanation. b. Unit cost or other relevant metrics. c. All supporting data and workpapers.	For PSPS, see "Section 10 – Mitigations to Reduce Impact" of each of the post-event report1 where we discuss the reduction of impacted customers driven by the different mitigation efforts. Additionally, see section "B. Direction" in the Post-Season1 report for revisions made to the counts of customers mitigated. For System Hardening: The System Hardening Program has examined four mitigations for reducing consequences of PSPS and EPSS: undergrounding all; undergrounding primary distribution lines; overhead hardening; and line removal with remote grid. a. Provided in the table below is the outage mitigation effectiveness for the System Hardening mitigations: (A) Underground assets and remote grids are exempt from PSPS and EPSS protocols. There are upstream dependencies that could result in an underground line being deenergized, but EPSS and PSPS events are not targeted for underground or remote grid assets. (B) 52% effectiveness applies only to EPSS reliability mitigation effectiveness. It is assumed that covered conductor provides 0% reliability mitigation effectiveness for PSPS. See "WMP-Discovery2026-2028_DR_TURN_004-Q010Atch01.xlsx". b. Provided in the table below are the 2024 unit costs for the System Hardening mitigations: (A) PG&E has not yet pursued Undergrounding All (primary and secondary lines) and does not have recorded unit cost data. For reference, please see "WMP-Discovery2026-2028_DR_TURN_004-Q010Atch02.xlsx", with a few notes about the assumptions included: • Unit cost is calculated based on the total costs-since-inception (multi-year) of the subprojects that are 100% complete each year – in this case, for 2024. • For Undergrounding, we have included the unit costs for system hardening undergrounding, which excludes Community Rebuild undergrounding. • Note, unit cost is not calculated by dividing the total program cost spent in one year by the total miles completed in one year because this would inaccurately include the readiness costs for future work that is not yet complete and post-construction costs for previously completed projects. c. Supporting workpapers are provided as attachments for mitigation effectiveness and unit cost, respectively: "WMP-Discovery2026-2028_DR_TURN_004-Q010Atch01.xlsx" and "WMP-Discovery2026-2028_DR_TURN_004-Q010Atch02.xlsx."	A Mireille Fall-Fry	5/1/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_004.zip	2	No	7	Public Safety Power Shutoff	7
217	OEIS	008	OEIS_008	1	No	OEIS_008_Q1	Regarding Tree Strike Potential On page 184 of PG&E's 2026-2028 Base WMP, in Figure PG&E-8.2.1-2, PG&E shows that it considers a tree strike potential of five or greater as "High". On page 432 of PG&E's 2023-2025 Base WMP R6, Figure SRN-PG&E-23-05-6A shows a tree strike potential of fifteen or greater as "High." a. Explain why PG&E has changed the threshold for determining the significance of tree strike potential. b. Provide an analysis of the magnitude of impact changing this threshold has had. This should include: i. The number of projects that meet this threshold at five compared to fifteen. ii. The number of circuit segments that meet this threshold at five compared to fifteen.	a. PG&E has not changed the threshold for determining whether the significance of tree strike potential warrants consideration for undergrounding. The changes in tree strike language between Figure SRN-PG&E-23-05-06A and Figure PG&E-8.2.1-2 reflect the fact that we have simplified the tree strike risk categories/label to align with the decision tree logic. The logic surrounding tree strike has not changed and is the same in Figure PG&E-8.2.1-2 and in Figure SRN-PG&E-23-05-06A. In both cases, an area with a tree strike score of 6 or higher is identified as "Area of impact identified, relocate to underground preferred." In both cases an area with a tree strike score of 0-5 is identified as "No area of impact identified, OH in place preferred." b. There has been no impact because there has been no change to the threshold. i. N/A ii. N/A	Nathan Poon	5/2/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_008.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1

218	OEIS	008	OEIS_008	2	No	OEIS_008_Q2	Regarding PG&E's Response to OEIS-P-WMP_2025-PG&E-004 Question 04 a. In part (c) of PG&E's response to data request OEIS-P-WMP_2025-PG&E-004 question 04, PG&E identifies four circuit protection zones as being "privately owned lines." i. PG&E states within this data request response that two of the lines were identified as not being privately owned through the validation process. Given this change, describe how PG&E intend to adjust its current hardening plan in order to reduce risk along these lines. ii. Provide a list of who owns each of these lines. iii. If the lines are owned by someone other than PG&E, why is PG&E including the lines as part of their highest risk circuit segments? iv. Provide a description of PG&E's procedures for working with line owners to decrease risk along their lines. b. In part (c) of PG&E's response to data request OEIS-P-WMP_2025-PG&E-004 question 04, PG&E identifies many of the circuit segments to not be included based on not being a "part of selection criteria" as work is "based on density of risk per mile" and "not total risk on the circuit segment." i. Provide an updated version of Table 6-4 based on risk density opposed to total risk score. This must also include the total mileage for each circuit segment, and mileage.	a. i. At the time of PG&E's WMP submission, the 2027 and 2028 work plan had not yet been fully scoped. For purposes of estimating risk reduction associated with PG&E's GH-04 WMP initiative mileage target, PG&E identified a list of circuit segments that would be considered for scoping. The workplan is dynamic and will continue to evolve as circuit segments, including work on BIG BEND 1101CB and MIDDLETOWN 1102644756, are considered for scoping in accordance with the System Hardening Project Scoping Decisions Trees provided in the WMP Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3. ii. Please see attachment "WMP-Discovery2026-2028_DR_OEIS_008-Q002Atch01CONF.xlsx" for owners of the two privately-owned lines. iii. PG&E's risk model reflects all lines mapped in the PG&E service area, not just those that are PG&E-owned. Ultimately, the privately owned lines get filtered out during the mitigation selection process when the ownership of the line is confirmed. iv. PG&E sends annual notices to private line owners, informing them of their maintenance responsibilities. See attachment "WMP-Discovery2026-2028_DR_OEIS_008-Q002Atch02CONF.pdf", which is an example of the letter sent by PG&E. While inspecting PG&E-owned transformers on private lines, PG&E personnel will send third-party notifications to line owners for infractions observed on their facilities. The Privately-Owned Lines group within PG&E's Asset Strategy team will communicate with owners to ensure repairs are made in a timeframe commensurate with the infraction and fire threat risk designation of the location. We do not recommend any hardening standards. Pursuant to agreement with OEIS, PG&E will supplement this response to provide part	Nathan Poon	5/2/2025	5/7/2025	5/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_008.zip	2	No	6	Wildfire Mitigation Strategy Development	6.2.1.3
218	OEIS	008	OEIS_008	2(s)	Yes	OEIS_008_Q2(s)	Regarding PG&E's Response to OEIS-P-WMP_2025-PG&E-004 Question 04 a. In part (c) of PG&E's response to data request OEIS-P-WMP_2025-PG&E-004 question 04, PG&E identifies four circuit protection zones as being "privately owned lines." i. PG&E states within this data request response that two of the lines were identified as not being privately owned through the validation process. Given this change, describe how PG&E intend to adjust its current hardening plan in order to reduce risk along these lines. ii. Provide a list of who owns each of these lines. iii. If the lines are owned by someone other than PG&E, why is PG&E including the lines as part of their highest risk circuit segments? iv. Provide a description of PG&E's procedures for working with line owners to decrease risk along their lines. b. In part (c) of PG&E's response to data request OEIS-P-WMP_2025-PG&E-004 question 04, PG&E identifies many of the circuit segments to not be included based on not being a "part of selection criteria" as work is "based on density of risk per mile" and "not total risk on the circuit segment." i. Provide an updated version of Table 6-4 based on risk density opposed to total risk score. This must also include the total mileage for each circuit segment, and mileage.	b. i. In this context, PG&E understands "risk density" to mean risk per Primary Overhead Mile. Table 6-4 consists of the circuit segments that make up the top 20% of overall utility risk. The table is not re-ranked based on the "risk density". Additionally, we have only included the total mileage of the circuit segment in the tables as we interpret "total mileage for each circuit segment, and mileage" to be identical. Please see attachment "WMP-Discovery2026-2028_DR_OEIS_008-Q002Supp01Atch01.xlsx".	Nathan Poon	5/2/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_008.zip	1	No	6	Wildfire Mitigation Strategy Development	6.2.1.3
219	MGRA	006	MGRA_006	1	No	MGRA_006_Q1	Please provide all information available on the following risk events, including detailed cause information, lessons learned, the type of conductor or equipment involved in particular whether the segment had been converted to covered conductor. a. On 8/3/2024, at 6:14 am, an ignition was reported related to PG&E infrastructure at latitude 39.0932719 longitude -121.308734 b. On 11/8/2024, at 11:42 AM, a post PSPS inspection revealed a damage event at latitude 37.102827 and longitude -121.900178.	a. PG&E confirmed with MGRA that this question intends to refer to an ignition on August 23, 2024, not August 3, 2024. Please see "WMP-Discovery2026-2028_DR_MGRA_006-Q001Atch01.xlsx" for information regarding the ignition. b. Please see "WMP-Discovery2026-2028_DR_MGRA_006-Q001Atch02.xlsx" for information regarding this PSPS damage event. Please note that PG&E does not collect information regarding the type of conductor during PSPS patrols.	Joseph Mitchell	5/5/2025	5/8/2025	5/8/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	2	No	5	Risk Methodology & Assessment	5.2.2.2
220	MGRA	006	MGRA_006	2	No	MGRA_006_Q2	With reference to PG&E's Wildfire Consequence model v4 documentation, Sections 4.1, 4.2, and 4.3 please provide substantive answers to OEIS_001-Q025 c. and d.	c. As documented in Section 4.1, the covariates used in the suppression model, which predicts the survival fraction of structures involved in a fire, are Terrain Difficulty Index (TDI), live fuel moisture, and wind speed. Among these, only TDI relates to "access". d. As documented in Section 4.2, the covariates used in the egress model are Access and Functional Needs (AFN) and wind speed.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
221	MGRA	006	MGRA_006	3	No	MGRA_006_Q3	WFC v4 Section 4.1.3.1 states that "The TDI is composite index from 1 to 5 that uses local topography and other factors to determine speed and ease of access from public roads and fire line feasibility for service territory equipment asset locations" a. List all "other factors" that are included other than local topography. b. What are the topographic variables that are included in TDI? c. How are the topographic and other variables combined and weighted to compose the TDI? d. What metrics were used to validate that the TDI accurately "determine[s] speed and ease of access from public roads and fire line feasibility for service territory equipment asset locations"? e. Please provide this validation.	a. The Terrain Difficulty Index (TDI) is a proprietary, quantitative measure developed by Technosylva that is designed to assess how challenging it may be to contain a wildfire, particularly during initial attack operations. It reflects terrain-related factors that influence suppression efforts and the complexity of fuel conditions. TDI supports wildfire response planning by combining multiple indicators into a single, interpretable score. Given the proprietary nature of this information, Technosylva would not disclose the information without a non-disclosure agreement. Please let us know if you would like to meet and confer to discuss this request further. b. Technosylva proprietary inputs and sub-indices relate to suppression and the complexity of fuel conditions. Given the proprietary nature of this information, Technosylva would not disclose the information without a non-disclosure agreement. Please let us know if you would like to meet and confer to discuss this request further. WMP-Discovery 2026-2028_DR_TURN_001-Q003 Page 2 c. The set of sub-indices to calculate the final TDI is Technosylva proprietary within their operational and planning tools. Given the proprietary nature of this information, Technosylva would not disclose the information without a non-disclosure agreement. Please let us know if you would like to meet and confer to discuss this request further. d. Preliminary validation has shown that higher TDI, FBI (Fire Behavior Index), and IAA values correlate with lower initial attack success rates, helping agencies and utilities better anticipate when a fire may exceed available suppression capabilities. e. The methodology described in subpart (d) above is currently undergoing peer review and is expected to be published soon in the International Journal of Wildland Fire.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
222	MGRA	006	MGRA_006	4	No	MGRA_006_Q4	With regard to WFC v4 Table 9: a. Table 9 presents an abridged summary of the model regression results. Please provide the full model regression results. b. P value is shown to be 0 (or less than 0.00005) in Table 9. What is the meaning of this P value? Does this imply a perfect fit? c. In the regression, how many variables were used to fit how many bins of data? d. Please also provide the validation that was done to quantify the explanatory value of TDI and other variables	a. Please see the table below for the requested results. Generalized Linear Model Regression Results ========== ========== coef std err z P>|z| [0.025 0.975] ---------- Intercept -3.3012 0.021 -159.431 0.000 -3.342 -3.261 tdi 0.9263 0.002 508.681 0.000 0.923 0.930 ffm_chamise_1km -0.0207 0.000 -74.746 0.000 -0.021 -0.020 ws_mph_300m 0.0266 0.000 245.897 0.000 0.026 0.027 ========== ========== b. We are reporting standard regression model P-values for coefficients as computed by the machine learning python package "statsmodels". In regression modeling, the P-value for a coefficient quantifies the probability that the Null Hypothesis (that the true value of the coefficient is zero) is true. Small P-values indicate that the coefficient in question is statistically significant (i.e. very unlikely to actually be zero). Small P-values confirm covariance between the explanatory variables and the variable being modeled but do not directly relate to "perfect fit". c. Three variables and a constant term were used to fit structure loss outcomes from 5,299 fires. It is unclear what "bins of data" would refer to in this context. WMP-Discovery 2026-2028_DR_TURN_001-Q004 Page 2 d. The regression model results table provides diagnostics for the statistical significance of the model coefficients. The worked examples in Section 4.1 also provide a sanity check on the range of possible model predictions in a real-world setting.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
223	MGRA	006	MGRA_006	5	No	MGRA_006_Q5	In Section 4.1.2.1 PG&E's model asserts that (, ,) The literature on structure loss in wildfire is extensive and lists a number of variables that influence structure loss. These include housing materials, age of neighborhood, density of neighborhood and separation of houses, proximity of vegetation to the structure, enclosed eves and vents, and others. a. How does PG&E's structure loss model incorporate other variables that are implicit to the structures, maintained landscapes, and neighborhoods? b. Please provide the numerical values that went into Figures 9 and 10. c. Figure 10 implies that for TDI=1 that the probability of structure is very small (counts for loss < 0.3 >> loss > 0.3), and that for TDI=5 probability of structure loss is very large (counts for loss > 0.7 >> loss < 0.7). Does this imply that PG&E's model assumes that home survival fraction is primarily dependent on the availability of firefighting resources? If so, what justification (analysis or citations) does it provide for this assertion?	a. The structure loss fraction model is focused on fire behavior, not community vulnerability. The empirical data on structure losses from historical fires used to train the model is, by definition, inclusive of a wide range of conditions in the built environment. However, given the sensitivity of outcomes to weather and fire behavior extremes, where extreme fire behavior can overwhelm even the best firefighting resources and landscape and building measures, the modeling team did not feel it would be appropriate to report lower consequence, and therefore discourage mitigation, in locations with expected destructive fire behavior but potentially favorable structure spacing or characteristics. As a practical matter, the vast majority of the building stock is untouched by fire building codes and we expect all Wildland Urban Interface (WUI) communities in CA (and beyond) to have structures with characteristics favorable to ignition. We WMP-Discovery 2026-2028_DR_TURN_001-Q005 Page 2 also note that we have consulted experts in the fire research community and have not identified reliable sources of data on housing materials, landscaping vegetation, roof conditions, etc. that cover PG&E's territory. We have found that the literature on structure loss (likely consistent with research referenced in the question) is primarily focused on explaining the survival of specific structures after specific fires, where such data is gathered locally and after the fact – and therefore not suitable to our purposes. The relative vulnerability of specific communities to fire is a topic of ongoing research and model development both inside PG&E and in the wider wildfire modeling community. b. As discussed during a call with MGRA on May 8, 2025, we anticipate responding to this question on May 14, 2025. c. The suppression model is a regression model that quantifies correlations between the survival fraction of structures and the TDI, fuel moisture, and wind speed covariates from the fire footprint. The model provides the best statistical fit to the training data; it does not make assumptions. The model fit indicates that all three major covariates are statistically significant, with the value of the coefficients multiplied by the underlying covariate values determining the size of the contribution to the predicted structure loss for each fire. The TDI coefficient values is larger than the wind speed and fuel moisture coefficients, but TDI values range from 1 to 5,	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
223	MGRA	006	MGRA_006	5(s)	Yes	MGRA_006_Q5(s)	In Section 4.1.2.1 PG&E's model asserts that (, ,) The literature on structure loss in wildfire is extensive and lists a number of variables that influence structure loss. These include housing materials, age of neighborhood, density of neighborhood and separation of houses, proximity of vegetation to the structure, enclosed eves and vents, and others. a. How does PG&E's structure loss model incorporate other variables that are implicit to the structures, maintained landscapes, and neighborhoods? b. Please provide the numerical values that went into Figures 9 and 10. c. Figure 10 implies that for TDI=1 that the probability of structure is very small (counts for loss < 0.3 >> loss > 0.3), and that for TDI=5 probability of structure loss is very large (counts for loss > 0.7 >> loss < 0.7). Does this imply that PG&E's model assumes that home survival fraction is primarily dependent on the availability of firefighting resources? If so, what justification (analysis or citations) does it provide for this assertion?	The calculations in the section of documentation that includes Figures 9 and 10 were included as examples from a development version of the model, notably before weights were added to emphasize model fit against fires with more buildings in their footprints compared to those with fewer buildings, and fit using an earlier version of the fires data set. For these reasons, the data highlighted in the documentation example was not aligned with the values used in the v4 release. The number of fires in the deciles of predicted loss fraction consistent with the v4 model are provided in the table below:	Joseph Mitchell	5/5/2025	5/14/2025	5/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
224	MGRA	006	MGRA_006	6	No	MGRA_006_Q6	The analysis provided estimated TDI values for the Dixie fire. Please provide a TDI for other major fires as well including: a. Eaton (2025) b. Palisades (2025) c. Lahaina (2023)	TDI data was licensed from Technosylva for PG&E's service territory and is proprietary. We do not have access to TDI values for any of the requested fire locations, all of which were outside of PG&E's service territory. We observe that the primary suppression relevant characteristic shared by those fires was their rate of spread, supported by extremely dangerous fuel and wind conditions.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
225	MGRA	006	MGRA_006	7	No	MGRA_006_Q7	Was PG&E's suppression model developed internally or by a third party vendor, and if the latter which vendor?	PG&E's suppression model is a regression model that was developed internally. As discussed in the previous responses in this set of data requests, the TDI covariate was developed by and licensed from Technosylva.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4

226	MGRA	006	MGRA_006	8	No	MGRA_006_Q8	With regard to Table 12 a. Please provide the full model regression results. b. P value is shown to be 0 (or less than 0.00005) in Table 12. What is the meaning of this P value? Does this imply a perfect fit? c. In the regression, how many variables were used to fit how many bins of data? d. Please also provide the validation that was done to quantify the explanatory value of AFN and other variables.	a. The calculations in the section of documentation were included as examples and were not aligned with the values used in the v4 release. The results in the table below, and the discussion that follows, are based on the model fit with coefficients aligned with the released v4 model. Generalized Linear Model Regression Results ========== coef std err z P>|z| [0.025 0.975] ---------- Intercept -7.2095 0.224 -32.156 0.000 -7.649 -6.770 afn_10km_pct 3.0006 0.453 6.621 0.000 2.112 3.889 ws_mph_30dm 0.0133 0.002 6.607 0.000 0.009 0.017 ========== b. We are reporting standard regression model P-values for coefficients as computed by the well-known machine learning python package "statsmodels". In regression modeling, the P-value for a coefficient quantifies the probability that the Null Hypothesis (that the true value of the coefficient is zero) is true. Small P-values indicate that the coefficient in question is statistically significant (i.e. very unlikely to actually be zero). Small P-values confirm covariance between the explanatory variables and the variable being modelled but do not directly relate to "perfect fit". WMP-Discovery 2026-2028_DR_TURN_001-Q008 Page 2 c. The regression uses two variables and an intercept to fit 170 fire outcomes involving fatalities. It is unclear what "bins of data" would refer to in this context. d. The regression model results table provides diagnostics for the statistical significance of the model coefficients. The worked examples in Section 4.2 also provide a sanity check on the range of possible model predictions in a real-world setting.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
227	MGRA	006	MGRA_006	9	No	MGRA_006_Q9	In Section 4.2.3, PG&E advances the hypothesis that AFN fraction is a predictor of fatalities, using the Camp fire as an example with high statistics. a. Figure 12 shows an age distribution for the Camp fire fatalities. Please provide an equivalent age distribution graph for the 50,000 people who evacuated from the Camp fire.	a. We are not aware of a survey of evacuees but we did consult the 2010 census results for Paradise. The age distribution was 4,501 people (17.2%) under the age of 18, 1,858 people (7.1%) aged 18 to 24, 4,822 people (18.4%) aged 25 to 44, 8,466 people (32.3%) aged 45 to 64, and 6,571 people (25.1%) who were 65 years of age or older. The median age was 50.2 years. The median age for the victims of the Camp fire is 72 years. Those numbers in a histogram look like the figure below, which depicts the percentage of the population on the y-axis and age-groups on the x-axis.	Joseph Mitchell	5/5/2025	5/12/2025	5/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_006.zip	0	No	5	Risk Methodology & Assessment	5.4
228	TURN	005	TURN_005	1	No	TURN_005_Q1	Regarding PG&E's attachment "WMP-Discovery2026-2028_DR_TURN_003-Q005Atch01," in Excel please add a column that provides the number of overhead miles for each project listed.	Please see attachment "WMP-Discovery2026-2028_DR_TURN_005-Q001Atch01.xlsx", workbook "Duration Analysis", Column J "OH Miles." A few notes about the data provided: - PG&E has interpreted this request as referring to the original overhead miles that were removed in the subproject and has provided those miles in response. - The primary overhead miles removed and replaced by undergrounding reflect actual overhead miles removed on undergrounding subprojects where data is available. If data is not yet available, we used the adopted1 overhead to undergrounding conversion factor of 1 mile of overhead to 1.25 miles of undergrounding.	A Mireille Fall-Fry	5/8/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_005.zip	1	No	6	Wildfire Mitigation Strategy Development	6.1.3.1
229	TURN	005	TURN_005	2	No	TURN_005_Q2	Regarding TURN-3 PG&E attachment "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch01": a. Please provide a definition of each column header. b. What column represents the total risk score of each circuit segment? c. Does PG&E rank circuit segments for prioritization by highest risk by column "(i)" — "SH Wildfire Risk per PHOH Mile" — or something else? Please explain, including what column or calculation is used to rank circuit segments from highest to lowest risk for PG&E's prioritization of "high risk" miles. d. Does multiplying column "(i)" by "PHOH Miles" (column AY) equal the total risk score for each circuit segment? Please explain.	a. Please see the table below for the definition of each column header. b. The circuit segment total risk score is not shown in any column in this data set. It was not required for the original Cal Advocates data request. c. PG&E ranks circuit segments by the System Hardening composite wildfire risk per primary overhead mile, which is reported as identical values in both columns (i) and (t,2). PG&E orders the wildfire risk per primary overhead mile values from largest to smallest to establish the relative risk rank values. WMP-Discovery 2026-2028_DR_TURN_005-Q002 Page 3 d. Yes, multiplying column (i) or (t,2), the System Hardening wildfire risk per primary overhead mile, times the primary overhead mile length provided in column AY, will generally produce the total wildfire risk sum for a circuit segment. However, there are six circuit segments for which there is no primary overhead mileage and hence the original risk sums will not be recovered. These six segments have only underground primary conductors and a limited amount of secondary overhead conductor miles. Their risk sums are essentially zero.	A Mireille Fall-Fry	5/8/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_005.zip	0	No	5	Risk Methodology & Assessment	5.4
230	TURN	005	TURN_005	3	No	TURN_005_Q3	Regarding the decision tree in Figure PG&E 8.2.1-2 on page 184: a. On the first row, third box, "is the UG NB + OH NB," does "OH NB" include EPSS? Please explain. b. In the first row, why is PSPS and EPSS not evaluated? Please explain. c. Regarding the second row "Begin Hybrid Analysis," what happens if an answer to one of the questions in a yellow box (e.g. "Are there areas identified with High tree strike potential…" is no? Please explain. d. Regarding the second row "Begin Hybrid Analysis," what happens if the answer to all three questions in a yellow box (e.g. "Are there areas identified with High tree strike potential…" is no? Please explain. e. Regarding a "Hybrid" project, is it possible for such a project to contain 99% undergrounding and 1% overhead hardening? Please explain.	a. Yes, the comparison is to OH hardening + EPSS. b. The assumed savings associated with PSPS and EPSS are included as appropriate in the benefit associated with the economic comparison between the UG vs OH alternatives. c. If the answer to one of the questions in a yellow box is "no", then OH hardening + EPSS is assumed to be an acceptable alternative for mitigation for these areas for that reason. d. If the answer to all three questions in a yellow box is "no", then OH hardening + EPSS would be the selected mitigation, and undergrounding would not be proposed/included in the scope. e. Yes, it is possible, although unlikely, that a "hybrid" project could be 99% undergrounding and 1% overhead hardening. In projects where undergrounding is WMP-Discovery 2026-2028_DR_TURN_005-Q003 Page 2 the primary solution, there are often specific construction limitations that make it unfeasible to underground the entire location. Examples include locations where risers near line reclosers or water crossings prevent underground installation. In these cases, alternative solutions, such as bridge attachments or boring, may not be viable either.	A Mireille Fall-Fry	5/8/2025	5/13/2025	5/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_005.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.1
231	OEIS	009	OEIS_009	1(s2)	Yes	OEIS_009_Q1(s2)	Regarding 2026 Risk Reduction for Undergrounding and Covered Conductor Table 8-1 of PG&E's 2026-2028 Base WMP includes risk reduction percentages for 2026 based on its current risk models WDRM v4 and WTRM v2. Given that the year 2026 is part of its current General Rate Case Decision, Energy Safety cannot currently compare its risk reduction as calculated by WDRM v3 and WTRM v1. a. Provide the percentage risk reductions planned for 2026 for the following activities based on WDRM v3 and WTRM v1. i. System Hardening – Undergrounding (GH-04) ii. System Hardening – Transmission Shunt Splices (GH-06) iii. System Hardening – Transmission Conductor Segment Replacement (GH-11) iv. Overhead Hardening and Line Removal – Distribution (GH-12)	Per request from the Office of Energy Infrastructure Safety, we are re-producing the attachments provided with "WMP-Discovery2026-2028_DR_TURN_003-Q001.pdf" for this request. Please note, "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx" is now being produced as "WMP-Discovery2026-2028_DR_OEIS_009-Q001Supp02Atch01CONF.xlsx" and "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch03CONF.xlsx" is now being produced as "WMP-Discovery2026-2028_DR_OEIS_009-Q001Supp02Atch02CONF.xlsx." No changes have been made to these files.	Nathan Poon	5/9/2025	6/6/2025	6/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_009.zip	2	No	5	Risk Methodology & Assessment	5.4
231	OEIS	009	OEIS_009	1(s)	Yes	OEIS_009_Q1(s)	Regarding 2026 Risk Reduction for Undergrounding and Covered Conductor Table 8-1 of PG&E's 2026-2028 Base WMP includes risk reduction percentages for 2026 based on its current risk models WDRM v4 and WTRM v2. Given that the year 2026 is part of its current General Rate Case Decision, Energy Safety cannot currently compare its risk reduction as calculated by WDRM v3 and WTRM v1. a. Provide the percentage risk reductions planned for 2026 for the following activities based on WDRM v3 and WTRM v1. i. System Hardening – Undergrounding (GH-04) ii. System Hardening – Transmission Shunt Splices (GH-06) iii. System Hardening – Transmission Conductor Segment Replacement (GH-11) iv. Overhead Hardening and Line Removal – Distribution (GH-12)	a. i. The v3 risk reduction and risk rank values for the 2026 System Hardening – Undergrounding (GH-04) workplan has been provided in response to data request WMP-Discovery2026-2028_DR_TURN_003-Q001 and associated attachment "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx." Please reference worksheet 'GH-04 Workplan 2026-28', filter column V (End Year) for 2026, and see column P (Risk Rank (V3)), and column Q (Est. Wildfire Risk Reduction (V3)). The response and associated attachment have been attached to this response as "WMP-Discovery2026-2028_DR_OEIS_009-Q001Atch01CONF.zip." ii. Please note that transmission shunt splices are not part of the General Rate Case Decision. Cost recovery for shunt splices occurs through the FERC Transmission Owners Filing. PG&E will supplement this response to provide this information by May 23, 2025. iii. PG&E will supplement this response to provide this information by May 23, 2025. iv. The v3 risk reduction and risk rank values for the 2026 Overhead Hardening and Line Removal – Distribution (GH-12) workplan has been provided in response to data request WMP-Discovery2026-2028_DR_TURN_003-Q001 and associated attachment WMP-Discovery2026-2028_DR_TURN_003-Q001Atch03CONF.xlsx. Please reference worksheet 'GH-12 Workplan 2026-28', filter column V (End Year) for 2026, and see column P (Risk Rank (V3)) and column Q (Est. Wildfire Risk Reduction (V3)). The response and associated attachment have been attached to this response as "WMP-Discovery2026-2028_DR_OEIS_009-Q001Atch01CONF.zip."	Nathan Poon	5/9/2025	5/23/2025	5/23/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_009.zip	0	No	5	Risk Methodology & Assessment	5.4
231	OEIS	009	OEIS_009	1	No	OEIS_009_Q1	Regarding 2026 Risk Reduction for Undergrounding and Covered Conductor Table 8-1 of PG&E's 2026-2028 Base WMP includes risk reduction percentages for 2026 based on its current risk models WDRM v4 and WTRM v2. Given that the year 2026 is part of its current General Rate Case Decision, Energy Safety cannot currently compare its risk reduction as calculated by WDRM v3 and WTRM v1. a. Provide the percentage risk reductions planned for 2026 for the following activities based on WDRM v3 and WTRM v1. i. System Hardening – Undergrounding (GH-04) ii. System Hardening – Transmission Shunt Splices (GH-06) iii. System Hardening – Transmission Conductor Segment Replacement (GH-11)	a. i. The v3 risk reduction and risk rank values for the 2026 System Hardening – Undergrounding (GH-04) workplan has been provided in response to data request WMP-Discovery2026-2028_DR_TURN_003-Q001 and associated attachment "WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx." Please reference worksheet 'GH-04 Workplan 2026-28', filter column V (End Year) for 2026, and see column P (Risk Rank (V3)), and column Q (Est. Wildfire Risk Reduction (V3)). The response and associated attachment have been attached to this response	Nathan Poon	5/9/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_009.zip	1	No	5	Risk Methodology & Assessment	5.4

232	GPI	001	GPI_001	1	No	GPI_001_Q1	(1.1) Please provide documentation detailing the MAVf applied in the WFC model, including the method for how "non-linear, risk adjustment increases the consequences of more extreme events," as referenced in the wildfire-consequence-model-documentation-v4.pdf (at p. 8). (1.2) In regard to wildfire-consequence-model-documentation-v4.pdf, please clarify whether the reported "MAVF" values (e.g. at p. 18, Table 8) and "consequence values using the MAVf function (e.g. at p. 28)" are reported in standard units (e.g. 1 = 1 serious injury) or cost normalized units at the rate of "$1M per risk-adjusted 2023 dollars per unit of MAVF" (e.g. 3.125 = 1 serious injury*$3.125M/ $1M)	a. For the requested information, please refer to PG&E's 2024 RAMP Report (https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy/division/reports/2024-ramp-application-pge051524.pdf), Chapter 2, Section C. Cost-Benefit Approach, starting from page 2-3 through 2-27. MAVf in WFC v4 used earlier versions of the PG&E's 2024 RAMP CBA, with slight differences in the monetized value of safety and reliability. The non-linear scaling is described in pages 2-19 through 2-27 of the RAMP Report. b. MAVf values are in millions risk-adjusted 2023 dollars.	Zoe Harrold	5/9/2025	5/14/2025	5/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-GPI_001.zip	0	No	5	Risk Methodology & Assessment	5.4
233	GPI	001	GPI_001	2(s)	Yes	GPI_001_Q2(s)	WFC model questions: (2.1) In OEIS_001_Q24, OEIS asked (a.iii) "How many "worst weather days" are included within the set used for WFC?" PG&E responded: "PG&E includes 571 worst weather days from March 2003 to Dec 2020." Of the total 571 worst weather days modeled with 24-h Technosylva fire spread simulations, how many simulations are included in the quantification of each CoRE pixel? If a subset of the 571 worst weather day simulations are applied in the WFC for each CoRE pixel, what is the basis for selecting whether a Technosylva worst weather day 24-h simulation is used as a WFC input to calculate CoRE for a given pixel? (2.2) Confirm that the only outputs from 24-h Technosylva fire spread simulations input into the WFC to determine granular CoRE values are Flame Length and Rate of Spread. If other fire spread simulation outputs (e.g. acreage, buildings destroyed, etc.) are included in any aspect of the WFC and final CoRE valuation, please list them and describe the methods used. (2.3) It is our understanding that PG&E previously calibrated Technosylva simulation Flame Length and Rate of Spread "Destructive Fire" thresholds based on 8-h simulations (PG&E 2023-2025 WMP R5, p. 173). Did PG&E analyze the relationship between 24-h Technosylva simulation Flame Length and Rate of Spread and its revised "Predicted Destructive Potential" binned fire classifications? If so, provide the calibration results. (2.4) PG&E validates its use of 24-h versus 8-h Technosylva simulations based on the correlation between simulated historical fires versus actual acres burned (wildfire-consequence model-documentation-v4.pdf, p. 13). Did PG&E complete a similar assessment for simulated historical fires versus actual buildings destroyed? If so, please provide the results. Does PG&E apply the simulated acres burned from 24-h Technosylva simulations in any of its risk quantification models? (2.5) FPI outputs are an input to the WFC Model. FPI fuel data is sourced from Technosylva and is reported as being updated annually (PGE 2026-2028 MWP vol. 1, p. 470). [illegible]	a. i. The v4 WFC model requires all inputs for a pixel to be present to characterize expected consequence at a pixel. The temporal overlap between Technosylva simulations and the FPI model backcast data used as WFC v4 inputs spans 2012 through 2020. Therefore all "worst weather days" spanning 2012-2020, 288 days, were used. ii. Please see the response to subpart (i) above. The temporal overlap between Technosylva simulations and the FPI model backcast data determined the data used. b. We confirm that flame length and rate of spread are the only fire simulation characteristics used as inputs to the WFC. c. i. Yes, PG&E confirmed the same thresholds were valid for both 8 and 24 hour simulations. Because the flame length and rate of spread values used are the maximum values observed during the simulation interval, in many cases they are unchanged between 8 and 24 hour simulations. Even when the 24 hour simulation increased one or both values, the same thresholds were found necessary to achieve "full recall" of historically destructive fires. d. i. The validation on page 13 confirms that the acres burned after 24 hours of simulation better correlate with final acres of historical fires than their 8-hour counterparts, but only after binning the data. For structures destroyed, there is poor correlation. Please note that the acres burned correlation was only clear when the results were binned and averaged. The vast majority of fires do not destroy any structures, so there are fewer fires to aggregate into bins, resulting in inherently noisier relationships. Additionally, the Technosylva wildfire simulation engine does not currently treat buildings as fuels, with structures reported based on fire footprints without accounting for the contribution of [illegible]	Zoe Harrold	5/9/2025	5/20/2025	5/20/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-GPI_001.zip	0	No	5	Risk Methodology & Assessment	5.4
233	GPI	001	GPI_001	2	No	GPI_001_Q2	WFC model questions: (2.1) In OEIS_001_Q24, OEIS asked (a.iii) "How many "worst weather days" are included within the set used for WFC?" PG&E responded: "PG&E includes 571 worst weather days from [illegible]	a. Pre-fire fuels layers were used as input to generate the backcast of the FPI climatology. Specifically, a pre-fire fuels snapshot was created for years 2012-2020. A spring 2021 snapshot was used for 2021, and a spring 2022 snapshot for 2022. [illegible]	Zoe Harrold	5/9/2025	5/14/2025	5/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-GPI_001.zip	0	No	5	Risk Methodology & Assessment	5.4
234	MGRA	007	MGRA_007	1	No	MGRA_007_Q1	Please provide a shapefile or geodatabase containing the Fire Index Area (FIA) used for PG&E's analysis.	Please see "WMP-Discovery2026-2028_DR_MGRA_007-Q001Atch01.zip" for the shapefiles containing the Fire Index Area (FIA) used in PG&E's analysis explained in its response to "WMP-Discovery2026-2028_DR_MGRA_005-Q005.pdf".	Joseph Mitchell	5/12/2025	5/14/2025	5/14/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_007.zip	1	No	10	Situational Awareness and Forecasting	10.6
235	OEIS	010	OEIS_010	1	No	OEIS_010_Q1	Regarding Vegetation Management Quality Control Population and Sample Unit Stats In its response to OEIS-P-WMP_2025-PGE-005, PG&E states that for both Vegetation Management Quality Control Distribution Routine (VM-22D) and Vegetation Management Quality Control Transmission Routine (VM-22T) PG&E "selects [the sample] from a population of Work Packets." On page 410 of its 2026-2028 WMP, PG&E lists the Population/Sample Size for VM-22D and VM-22T as "Inspections."	a. 'Work Packets' are a group of inspected distribution spans and/or transmission locations created by VM Operations. Work Packets are an organizational tool to consolidate inspection records and do not skew the overall population of spans/locations inspected by VM Operations. b. Since the Work Packets are created by VM Operations at the time of their inspection assignments, we do not yet have the total population or sample size for the future years of 2026 to 2028.	Nathan Poon	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_010.zip	0	No	9	Vegetation Management and Inspections	9.11.2
236	OEIS	010	OEIS_010	2	No	OEIS_010_Q2	Regarding Tree Worker Qualifications and Training On pages 419-421 of its 2026-2028 WMP, in Table 9-9, PG&E provides information on [illegible]	Please see the table provided below for the requested information. Please also note that the employee counts listed are current as of May 07, 2025. The certifications, training, and knowledge of the workers are the responsibility of the vendors and are not vetted by PG&E.	Nathan Poon	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_010.zip	0	No	9	Vegetation Management and Inspections	9.13.2
237	SPD	005	SPD_005	1	No	SPD_005_Q1	[illegible] the best attempt to present units planned or completed, total costs and average cost per unit for each mitigation. SPD asked PG&E adjustments to each of these three columns corresponding to what they believe would be the most accurate values. a. Notwithstanding exceptions discussed by PG&E in regards to GH-01, does PG&E generally [illegible]	PG&E generally agrees with SPD's methodology when it comes to expense programs as they can be reviewed in specific fiscal years for units and dollars comparison. For Capital programs, unit cost is derived from the total cost of projects that could span multiple years, and the overall completion of units, not just units completed in one fiscal year.	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6
238	SPD	005	SPD_005	2	No	SPD_005_Q2	PG&E indicates that "Mitigation SA-02 includes both capital and operational expenditures. PG&E has split SA-02 to reflect separate calculations for each of capital and operational expenditures." However, PG&E's response to SPD-001 Question 21 appears to only provide the CapEx portion. Is this an error?	SA-02 refers to line sensors, which may include both original installation and operational expenses. As a result, SA-02 has both capital and operational expenditures. However, only the capital portion has units associated with it, so that was the relevant information provided with this request for unit costs. PG&E's narrative statement that split SA-02 into separate rows was made in error.	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6
239	SPD	005	SPD_005	3	No	SPD_005_Q3	For 2024, the QDR indicates that GM-03's unit of measure is "# of Distribution EC Tags". PG&E's response to SPD-001 Question 21 records a percentage of 73.4%. Explain what this difference means. Why PG&E presented GM-03 as a percentage in its response to to SPD-001 Question 21. a. PG&E states that "Costs for GM-03 are not separated but included in the Activity level ' Equipment maintenance and repair'. Did PG&E report on GM-03 in the QDR in this manner? If not, explain why PG&E updated SPD-001 Question 21 in this way	In PG&E's 2023-25 WMP, PG&E defines the unit of measure for GM-03 (HFTD/HFRA Open Tag Reduction – Distribution Backlog) with two components: (1) the number of EC notifications to be closed each year; and (2) a percentage of risk reduction that would be achieved by closing the tags.1 PG&E acknowledges that it has inconsistently presented these units in past QDRs, but has represented the bipartite nature of this unit of measure definition by providing the number of distribution EC tags for Table 1 of the QDR and the percentage of risk reduction for Table 12. This is also represented in both the 2023 and 2024 Annual Reports on Compliance where we provide both the numbers of tags closed as well as the percentage of risk reduction achieved in Table 3. For 2024, the 73.4% backlog ignition risk reduction corresponds to 53,526 backlog ignition risk tags closed.2 a. PG&E does not separate out costs for GM-03 in the QDR. It is rolled up under the Activity Equipment maintenance and repair.	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6
240	SPD	005	SPD_005	4	No	SPD_005_Q4	PG&E indicates that: "Upon consultation with mitigation owners, PG&E has made corrections to the "Total Cost" and, accordingly, "updated Average Cost per Unit" columns for the following mitigations for 2023: AI-02, AI 04, AI-05, AI-06, AI-07, VM-04." a. SPD reviewed mitigations AI-02, AI-04, AI-05, AI-06, AI-07 based on the units provided in PGE's tabular QDR (Q4, 2023) and the Cost Tracking Template data1 . As noted above, PG&E has made corrections to the average cost per unit of each of these mitigations in its response to SPD-001 Question 21. For instance, for AI-07 SPD calculated a unit cost $0.28 and PG&E calculated a unit cost of $0.14. For each of these five mitigations, explain why PG&E's response to SPD-001 Question 21 exhibits such a large variance? b. SPD presented the Total Cost for VM-04 in 2024 as $309,050,000, which was based on PG&E's response to the Cost Tracking Template data. PG&E corrected this value to be $26,655,530. Explain why PG&E made this correction and what data sources were used to support this correction.	a. This correction was made to the AI initiatives listed as the costs provided previously were inclusive of both HFTD and non-HFTD work. b. This correction was made to correct the data for the identified program. The $309,050,000 previously provided represents the 2024 Original Budget for three utility initiatives: (1) VM-03 (Focused Tree Inspections $216.37M); (2) VM-04 1 PG&E's Supplemental Data Response to SPD_021 (SPD_WSPS_PG&E_2024_011) Q001Supp07. WMP-Discovery 2026-2028_DR_SPD_005-Q004 Page 2 (Tree Removal Inventory $71.77M), and, (3) VM-18 (VM for Operational Mitigations $20.91M). This correction was made to report the actual $26.656M 2024 spend for VM-04 (Tree Removal Inventory). PG&E made these changes to better reflect the budget and costs of the VM-04 program	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6
241	SPD	005	SPD_005	5	No	SPD_005_Q5	PG&E indicates that "With regard to values for 2025, PG&E notes that the values used by SPD reflect forecasts first made in 2022. PG&E has provided updated values reflecting more current forecasts." Why are 2022 forecasts used as late as 2024 Q4? Does Energy Safety provide guidance on updating these forecasts throughout the WMP cycle? See pg. 165 of Energy Safety guidance ", v32".2 a. For each 2025 forecast that PG&E updated in its response to SPD-001 Question 21, list what data sources were used to support this correction.	PG&E had planned to provide an updated 2025 forecast in the Q1 2025 QDR, however, with the elimination of the financial table in the new quarterly template, PG&E did not provide an updated Table 11 with financial forecast. Per the guidelines and template from Energy Safety, 2025 forecasts were not required.	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6
242	SPD	005	SPD_005	6	No	SPD_005_Q6	For 2023, SPD was not expecting any variance in the units relative to the latest tabular QDR (2023, Q4). For example, for GM-06 during 2023 SPD presented 720 units, but PG&E corrected this to 482 units. a. Explain the variance in units for 2023 for each mitigation initiative that PG&E corrected in its response to SPD-001 Question 21. i. List what sources were used to support each of these corrections.	With regard to AI-05, PG&E has determined that the updated unit count of 1,749 was an error. The correct unit count is that presented by SPD. 1,786. PG&E will submit an amendment to its response to WMP-Discovery2026-2028_DR_SPD_001-Q021. With regard to AI-07, PG&E has determined that the updated unit count of 274,000 was an error and inadvertently included aerial inspection units that were not part of AI-07 in 2023. PG&E will submit an amendment to its response to WMP-Discovery2026-2028_DR_SPD_001-Q021. The unit counts provided in the QDRs are correct. In our previous data request response, we inadvertently underreported the total number of units. We reported 482 units for GM-06 in 2023, as well as incorrectly reported 400 units for GM-06 in 2024. However, these units were associated with PG&E's controller retrofit program under GM-06, but did not include all units installed under GM-06. The correct unit counts for 2023 and 2024 for GM-06 are 720 and 705, respectively, as described in our QDRs. Further, we determined that the reported total cost values in our previous data request response for GM-06 inadvertently included only costs for the controller retrofit program. GM-06 includes installation of DCD settings under three circumstances: controller retrofit; substation relay replacement, and; installation of DCD WMP-Discovery 2026-2028_DR_SPD_005-Q006 Page 2 settings during other work, such as replacement of a device as part of a pole replacement. Of the three, only DCD installation under the controller retrofit and substation relay replacement programs have unit costs. The unit cost for DCD settings installation as part of other work is $0. PG&E's prior data request response included costs only for the controller retrofit program, and not for DCD units installed under substation relay replacement. PG&E will amend its prior data request response to correct the unit and cost values for GM-06 accordingly. With regard to GH-05, GM-02, and VM-01, PG&E provided updated values derived from its 2023 Annual Report on Compliance (ARC). There may be variance as between PG&E's Q4 QDRs and a given year's ARC due to the data being provided at a different point in time as records from the previous year are finalized.	Eddie Schmitt	5/13/2025	5/16/2025	5/16/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_005.zip	0	No	3	Overview of WMP	3.6

243	OEIS	011	OEIS_011	1	No	OEIS_011_Q1	In sections 8.2.10.5 (page 219) and 8.4.12.1 (page 287) of its 2026-2028 Base WMP, PG&E describes its non-exempt expulsion fuse removal/replacement program. a. In the second paragraph of section 8.2.10.5 on page 219, PG&E states that it will replace additional "non-exempt surge arrestors" should they be found. Explain the difference between these "non-exempt surge arrestors" and the "non-exempt expulsion fuses" described in this section. b. PG&E states that it plans to complete the "remaining known population" of non-exempt expulsion fuse removals in 2025. Does the "known population" refer to: i) the target for non-exempt expulsion fuse removals from the 2023-2025 WMP (GH-10), ii) the full population of non-exempt expulsion fuses in PG&E's service territory, iii) a filtered subset of ii) above (e.g., only line-protection-related fuses in the HFTD/HFRA), or iv) a different population. If iii) or iv), explain how the population was defined and filtered, and what methodology or criteria were used to exclude other known non-exempt fuses. c. After PG&E completes its planned removals and replacements of non-exempt expulsion fuses in 2025, how many non-exempt expulsion fuses will remain in PG&E's HFTD/HFRA? i. Of the remaining non-exempt fuses, how many are intended for "line protection" versus "transformer protection?" ii. Of the remaining non-exempt fuses, how many are solid blade disconnects, universal fuse, open link fuse, or other type? d. Does PG&E plan to replace all non-exempt fuses in the HFTD/HFRA by 2028? If not, explain the rationale and provide the criteria used to determine which non-exempt fuses will not be replaced.	a. This is a typographical error. The statement should have been written to say: "Should we find additional non-exempt expulsion fuses; we will promptly replace them." The statement should not have included mention of surge arrestors. b. PG&E initially queried the EDGIS database in 2022 to identify the known population of non-exempt line protection fuses in HFTD areas. This original population was used to set non-exempt line protection fuse replacement targets in the 2023-2025 WMP. Subsequently, annually, as we create the following year's work plan, we have refreshed the EDGIS query to identify the updated known population of non-exempt line protection fuses. We use the refreshed known population of non-exempt line protection fuses to create the replacement work plans and ensure that all known non-exempt line protection fuses have either been remediated or are included in the 2025 work plan. c. PG&E will complete the identified population of its non-exempt expulsion fuses that were part of this WMP commitment, which include all known non-exempt line protection fuses in HFTD areas described in part b above. PG&E is aware that there may be additional non-exempt expulsion fuses in HFTD areas. Please see subpart (d) for our risk-based approach to addressing non-exempt expulsion fuses. i. All known non-exempt line protection fuses in HFTD areas will be remediated by the end of 2025. ii. Solid blade disconnects are considered switches, not fuses. There are approximately 1,400 solid blade disconnects deployed as part of this WMP commitment. d. At this time, PG&E does not plan to programmatically replace non-exempt fuses associated with equipment, as the program was developed in 2019 with a focus on the replacement of known non-exempt line protection fuses at that time. As PG&E reviewed the effectiveness of this program in reducing ignitions, it was revealed there was only one CPUC reportable ignition associated with a non-exempt fuse for the period from 2021 to 2024. Given that we patrol our assets in HFTD areas annually to determine vegetation clearing under all poles in HFTD where there is any non-exempt equipment on the pole in conformance with PRC 4292, PG&E elected to not expand the program. In addition to the pole clearing measure to mitigate against this ignition risk, we opportunistically replace all non-exempt equipment with exempt equipment when performing system hardening, as specified in our Electric Design Manual TD-3001M.	Nathan Poon	5/16/2025	5/28/2025	5/28/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_011.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.10.5
243	SPD	006	SPD_006	1	No	SPD_006_Q1	The following questions are all related to PG&E's first response to SPD-PGE-WMP2026-SPD-004 Question 5. a. In the 2024 RAMP Tranche, PG&E has listed 630 circuit segments as "#NA". Provide an Excel workbook that lists the WDRM v.4 Circuit Segment Name for each of the 630 circuit segments in the first column. The second column should explain why this circuit segment was listed as #NA, such as this circuit segment was split from a larger circuit segment in WDRM v.3 due to the addition of a recloser. The third column should list the name of the previous circuit segment as it was used in WDRM v.3 and presented in PGE_2023_WMP_R0_Section_642_Atch01.xlsx. If this is a newly constructed circuit segment, the response in the third column must be "New". 2026-2028 Base WMP WDRM v.4 Circuit Segment Name Explanation for #NA 2024 RAMP WDRM v.3 Circuit Segment Name CAMP EVERS 2106737512 b. Explain why PG&E in its 2026-2028 Base WMP did not include a file similar to PGE_2023_WMP_R0_Section_642_Atch01.xlsx in its submission. i. For each mitigation listed below, explain why it is now impossible for PG&E to utilize the mitigation by circuit mile (as it was in PGE_2023_WMP_R0_Section_642_Atch01.xlsx): a) Expulsion Fuse Replacement b) Surge Arrestor Replacement c) Aerial Inspection d) Ground Inspection e) Non-Pole Backlog f) Tree Removal g) Down Conductor Detection (DCD) h) Line Sensors i) Pole Backing j) Pole Clearing ii. For each mitigation listed above, explain why PG&E was able to complete the corresponding "% of Segment" field in the TopRisk_Table Worksheet of PGE_2023_WMP_R0_Section_642_Atch01.xlsx.1 c. For the years 2023-2025, PG&E states that it is unable to determine actual expenditure and present value cost of specific work done on a circuit segment for each of the mitigations listed in Question 1.b.i., but PG&E can provide the average cost to complete one unit of the mitigation program. For each of the mitigations listed in Question 1.b.i., provide an explanation for why PG&E is unable to determine the actual expenditure and present	a. Pursuant to agreement with SPD, PG&E will provide this response on June 5, 2025. b. Pursuant to agreement with SPD, PG&E will provide this response on May 28, 2025. c. Pursuant to agreement with SPD, PG&E will provide this response on May 28, 2025. d. Pursuant to agreement with SPD, PG&E will provide this response on May 28, 2025. e. In Figure PG&E-5-2-5, the MAVI intermediate result as depicted in the procedural schematic is the delivery of the MAVI by EORM for the completing the development of the WFC v4 model. i. Please see PG&E's responses to parts (a), (b), (c), and (d), below, as well as PG&E's WDRM documentation suite, which includes: "Wildfire Distribution Risk Model Version 4(WDRM v4) Documentation", "Distribution Event Probability Model for WDRM v4(Distribution Event Probability Model)", "Wildfire Distribution Risk Model Version 4(WDRM v4) Model Training and Validation", "Wildfire Distribution Risk Model Version 4(WDRM v4) Model Scoring", "Wildfire Distribution Risk Model Version 4(WDRM v4) Model Calibration", "Wildfire Distribution Risk Model Version 4(WDRM v4) Model Evaluation", and "Wildfire Distribution Risk Model Version 4(WDRM v4) Model Assumptions".	Eddie Schmitt	5/19/2025	6/2/2025	5/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	5	Risk Methodology & Assessment	5.5.2
243	SPD	006	SPD_006	1(a)	Yes	SPD_006_Q1(a)	The following questions are all related to PG&E's first response to SPD-PGE-WMP2026-SPD-004 Question 5. a. In the 2024 RAMP Tranche, PG&E has listed 630 circuit segments as "#NA". Provide an Excel workbook that lists the WDRM v.4 Circuit Segment Name for each of the 630 circuit segments in the first column. The second column should explain why this circuit segment was listed as #NA, such as this circuit segment was split from a larger circuit segment in WDRM v.3 due to the addition of a recloser. The third column should list the name of the previous circuit segment as it was used in WDRM v.3 and presented in PGE_2023_WMP_R0_Section_642_Atch01.xlsx. If this is a newly constructed circuit segment, the response in the third column must be "New". 2026-2028 Base WMP WDRM v.4 Circuit Segment Name Explanation for #NA 2024 RAMP WDRM v.3 Circuit Segment Name CAMP EVERS 2106737512 b. Explain why PG&E in its 2026-2028 Base WMP did not include a file similar to PGE_2023_WMP_R0_Section_642_Atch01.xlsx in its submission.	PG&E provided the requested data in Table E-4 on the risk reduction activities for the top-risk circuits. PG&E was not required to update the file submitted for the 2023–2025 WMP cycle. i. PG&E utilizes each of the mitigations listed in Question 1(b)(i) by a measure other than circuit mile and it is not possible to meaningfully convert PG&E's units into circuit miles. When PG&E submitted PGE_2023_WMP_R0_Section_642_Atch01.xlsx with its 2023-2025 Base WMP, PG&E was similarly unable to unitize these mitigations by circuit mile. ii. The listed mitigations were not unitized by circuit mile in PGE_2023_WMP_R0_Section_642_Atch01.xlsx to the 2023-2025 Base WMP. PG&E provided data in the "% of Segment" field based on forecast estimates of the proportion of work possible to be performed and forecast estimates of the work performed so to be performed on a given segment. For	Eddie Schmitt	5/19/2025	5/28/2025	5/28/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	5	Risk Methodology & Assessment	5.5.2
243	SPD	006	SPD_006	1(a)	Yes	SPD_006_Q1(a)	The following questions are all related to PG&E's first response to SPD-PGE-WMP2026-SPD-004 Question 5. a. In the 2024 RAMP Tranche, PG&E has listed 630 circuit segments as "#NA". Provide an Excel workbook that lists the WDRM v.4 Circuit Segment Name for each of the 630 circuit segments in the first column. The second column should explain why this circuit segment was listed as #NA, such as this circuit segment was split from a larger circuit segment in WDRM v.3 due to the addition of a recloser. The third column should list the name of the previous circuit segment as it was used in WDRM v.3 and presented in PGE_2023_WMP_R0_Section_642_Atch01.xlsx. If this is a newly constructed circuit segment, the response in the third column must be "New". 2026-2028 Base WMP WDRM v.4 Circuit Segment Name Explanation for #NA 2024 RAMP WDRM v.3 Circuit Segment Name CAMP EVERS 2106737512 b. Explain why PG&E in its 2026-2028 Base WMP did not include a file similar to PGE_2023_WMP_R0_Section_642_Atch01.xlsx in its submission. i. For each mitigation listed below, explain why it is now impossible for PG&E to utilize the mitigation by circuit mile (as it was in PGE_2023_WMP_R0_Section_642_Atch01.xlsx): a) Expulsion Fuse Replacement b) Surge Arrestor Replacement c) Aerial Inspection d) Ground Inspection e) Non-Pole Backlog f) Tree Removal g) Down Conductor Detection (DCD) h) Line Sensors i) Pole Backing j) Pole Clearing ii. For each mitigation listed above, explain why PG&E was able to complete the corresponding "% of Segment" field in the TopRisk_Table Worksheet of PGE_2023_WMP_R0_Section_642_Atch01.xlsx.1 c. For the years 2023-2025, PG&E states that it is unable to determine actual expenditure and present value cost of specific work done on a circuit segment for each of the mitigations listed in Question 1.b.i., but PG&E can provide the average cost to complete one unit of the mitigation program. For each of the mitigations listed in Question 1.b.i., provide an explanation for why PG&E is unable to determine the actual expenditure and present	Please note we only produced an attachment as part of this amendment	Eddie Schmitt	5/19/2025	6/6/2025	6/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	1	No	5	Risk Methodology & Assessment	5.5.2
243	SPD	006	SPD_006	1(c2)	Yes	SPD_006_Q1(c2)	The following questions are all related to PG&E's first response to SPD-PGE-WMP2026-SPD-004 Question 5. a. In the 2024 RAMP Tranche, PG&E has listed 630 circuit segments as "#NA". Provide an Excel workbook that lists the WDRM v.4 Circuit Segment Name for each of the 630 circuit segments in the first column. The second column should explain why this circuit segment was listed as #NA, such as this circuit segment was split from a larger circuit segment in WDRM v.3 due to the addition of a recloser. The third column should list the name of the previous circuit segment as it was used in WDRM v.3 and presented in PGE_2023_WMP_R0_Section_642_Atch01.xlsx. If this is a newly constructed circuit segment, the response in the third column must be "New". 2026-2028 Base WMP WDRM v.4 Circuit Segment Name Explanation for #NA 2024 RAMP WDRM v.3 Circuit Segment Name CAMP EVERS 2106737512 b. Explain why PG&E in its 2026-2028 Base WMP did not include a file similar to PGE_2023_WMP_R0_Section_642_Atch01.xlsx in its submission. i. For each mitigation listed below, explain why it is now impossible for PG&E to utilize the mitigation by circuit mile (as it was in PGE_2023_WMP_R0_Section_642_Atch01.xlsx): a) Expulsion Fuse Replacement b) Surge Arrestor Replacement c) Aerial Inspection d) Ground Inspection e) Non-Pole Backlog f) Tree Removal g) Down Conductor Detection (DCD) h) Line Sensors i) Pole Backing j) Pole Clearing ii. For each mitigation listed above, explain why PG&E was able to complete the corresponding "% of Segment" field in the TopRisk_Table Worksheet of PGE_2023_WMP_R0_Section_642_Atch01.xlsx.1 c. For the years 2023-2025, PG&E states that it is unable to determine actual expenditure and present value cost of specific work done on a circuit segment for each of the mitigations listed in Question 1.b.i., but PG&E can provide the average cost to complete one unit of the mitigation program. For each of the mitigations listed in Question 1.b.i., provide an explanation for why PG&E is unable to determine the actual expenditure and present	Please see below for an explanation for why PG&E is unable to determine the actual expenditure and, consequently, present value cost of specific work done on a circuit segment: c. Expulsion Fuse Replacement: While each expulsion fuse replacement job is charged to a separate PM order, divisions, at their discretion and for ease of accounting, may charge the entire amount of material stock (i.e. fuses) needed for their region to a single PM order. Disaggregation of bundled material costs would entail assumptions and estimates that would prevent final determination of "actual" cost. • Surge Arrestor Replacement: While each Surge Arrester job is charged to a separate PM order, divisions, at their discretion and for ease of accounting, may charge the entire amount of material stock (i.e. surge arrestors) needed for their region to a single PM order. Disaggregation of bundled material costs would entail assumptions and estimates that would prevent final determination of "actual" cost. • Aerial Inspection: PG&E's aerial inspections are billed to PM orders on a map-by-map basis and the cost to inspect one specific unit is not able to be disaggregated from the total. WMP-Discovery2026-2028_DR_SPD_006-Q001Supp02 Page 5 • Ground Inspection: PG&E's ground inspections are billed to PM orders on a map-by-map basis and the cost to inspect one specific unit is not able to be disaggregated from the total. • Non-Pole Backlog: Electric corrective notifications may be charged to a single PM order per notification, or may be bundled together with many other notifications in one PM order. • Tree Removal: PG&E's tree removal program records costs in one of two ways: unit cost, and under "time and materials." "Time and materials" cost cannot be linked to specific underlying work, which prevents PG&E from providing an "actual" expenditure at the circuit segment level. • Down Conductor Detection (DCD): PG&E's DCD program involves the installation of software on devices in the field. DCD "units" may be installed in one of three ways: (1) through PG&E's controller retrofit program; (2) through PG&E's substation relay replacement program, and; (3) in the course of other work in the field (e.g. a pole replacement that includes replacement of devices). With regard to units installed via the controller retrofit program and substation relay program, while each unit is counted in a separate PM order, the entire amount of	Eddie Schmitt	5/19/2025	6/2/2025	6/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	5	Risk Methodology & Assessment	5.5.2
243	SPD	006	SPD_006	1(c3)	Yes	SPD_006_Q1(c3)	The following questions are all related to PG&E's first response to SPD-PGE-WMP2026-SPD-004 Question 5. a. In the 2024 RAMP Tranche, PG&E has listed 630 circuit segments as "#NA". Provide an Excel workbook that lists the WDRM v.4 Circuit Segment Name for each of the 630 circuit segments in the first column. The second column should explain why this circuit segment was listed as #NA, such as this circuit segment was split from a larger circuit segment in WDRM v.3 due to the addition of a recloser. The third column should list the name of the previous circuit segment as it was used in WDRM v.3 and presented in PGE_2023_WMP_R0_Section_642_Atch01.xlsx. If this is a newly constructed circuit segment, the response in the third column must be "New". 2026-2028 Base WMP WDRM v.4 Circuit Segment Name Explanation for #NA 2024 RAMP WDRM v.3 Circuit Segment Name CAMP EVERS 2106737512 b. Explain why PG&E in its 2026-2028 Base WMP did not include a file similar to PGE_2023_WMP_R0_Section_642_Atch01.xlsx in its submission. i. For each mitigation listed below, explain why it is now impossible for PG&E to utilize the mitigation by circuit mile (as it was in PGE_2023_WMP_R0_Section_642_Atch01.xlsx): a) Expulsion Fuse Replacement b) Surge Arrestor Replacement c) Aerial Inspection d) Ground Inspection e) Non-Pole Backlog f) Tree Removal g) Down Conductor Detection (DCD) h) Line Sensors i) Pole Backing j) Pole Clearing ii. For each mitigation listed above, explain why PG&E was able to complete the corresponding "% of Segment" field in the TopRisk_Table Worksheet of PGE_2023_WMP_R0_Section_642_Atch01.xlsx.1 c. For the years 2023-2025, PG&E states that it is unable to determine actual expenditure and present value cost of specific work done on a circuit segment for each of the mitigations listed in Question 1.b.i., but PG&E can provide the average cost to complete one unit of the mitigation program. For each of the mitigations listed in Question 1.b.i., provide an explanation for why PG&E is unable to determine the actual expenditure and present	a. Please see attachment "WMP-Discovery2026-2028_DR_SPD_006-Q001Supp03Atch01.xlsx" for an explanation of the 630 #NA WDRM v4 Circuit Segments. The #NA Explanations Key is as follows: merge Two or more v3 circuit segments were combined, either partially or in total, to create a new circuit segment. new additions A circuit segment initially identified as "new construction" was determined to be either replacement construction or a new conductor added to an existing v3 circuit segment. new construction A circuit segment that is either entirely new construction or a newly rebuilt replacement circuit segment. other length changed Circuit segment grew or shrank substantially, due to splits, mergers, or removal of downstream interruptive devices. renamed Circuit segment where the only change was the circuit feeder name or the ID of the interruptive device that heads the segment. split Circuit segment resulted from the split of a v3 circuit segment. split/merged Circuit segment resulted from both split and merged conductors from multiple v3 circuit segments. WMP-Discovery2026-2028_DR_SPD_006-Q001Supp03 Page 5 The methodology and tooling for relating circuit segments between model versions and explaining the change is in the process of being matured. The explanations and matching circuit segments in the attachment are subject to change as the tooling is enhanced and more rigorously tested. ii. iv. Please see attachment "WMP-Discovery2026-2028_DR_SPD_006-Q001Supp03Atch02CONF.pdf" for a calculation description for the CORNING 110185152 circuit segment.	Eddie Schmitt	4/30/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	2	No	5	Risk Methodology & Assessment	5.5.2
244	SPD	006	SPD_006	2	No	SPD_006_Q2	Following up on PG&E's response to WMP-Discovery2026-2028_DR_MGRA_005 Question 4, provide a technical report that explains the following topics related to Gridscope: a. Description and specifications of the sensors used in Gridscope b. Description of how Gridscope sensors provide real-time monitoring to enhance grid reliability and safety. c. Description of how Gridscope sensors collect asset performance data i. Description of how the performance data collected by Gridscope is used to manage outages in real-time. ii. Description of how the performance data collected by Gridscope is used to plan future reliability programs. d. Description of how many distribution poles on average can be installed with Gridscope technology within a given work day. e. Description of the costs associated with installing Gridscope on the number of distribution poles in PG&E's answer to 2.d. Provide all documents that PG&E has in its possession related to the effectiveness and cost of Gridscope.	a. The current Gridscope product has been deployed in a pilot capacity. It's current capabilities include sensing vibration, acceleration, inclination, electric field voltage, infrared readings, temperature, barometric pressure, particulate matter, humidity, audio and imaging. b. Gridscope sensors have been mounted on every other pole to monitor the pole they are attached to and the adjacent pole. It senses the electromagnetic field, vibration, WMP-Discovery2026-2028_DR_SPD_006-Q002 Page 2 pole tilt, and acoustics for changes, faults or interactions that occur at a location. It also "learns" its environment and only reports events that are out of the ordinary, limiting false positives. The devices either communicate via cell, relay to cell or via link to a pole mounted gateway device (which can communicate over cell or satellite). When an interaction occurs, the information is sent to the cloud and Gridware AI interprets the information. A condition is determined to be an outage when an interaction occurs at the same time a loss of power is sensed. If there is no power loss, the interaction is considered to be a potential hazard. c. i. Upon receipt of an alert of an outage or a hazard from a Gridscope sensor, PG&E dispatches a Troubleshooter to go to in the field to either identify the cause of the outage or verify if a hazard exists. The ability of the Gridscope sensor to accurately identify interaction locations enables faster response to an event. ii. Gridscope devices have been deployed in pilot mode and are currently used for outage/hazard response only. d. Based on pilot implementation experience, PG&E estimates that, on average, a crew can install 40 to 50 devices per day depending on accessibility to the locations. e. During pilot phase, PG&E contracted out Gridscope installs to the vendor, the details of which are confidential. Effectiveness – Please see "WMP-Discovery2026-2028_DR_SPD_006-Q002Atch01CONF.xlsx" for all alert information from January 1, 2024 to May 2025. Cost – PG&E has been evaluating Gridscope technology on a pilot agreement with the vendor. We are in the process of negotiating a master services agreement for future deployments.	Eddie Schmitt	5/19/2025	5/22/2025	5/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	1	No	10	Situational Awareness and Forecasting	10.3.1
245	SPD	006	SPD_006	3	No	SPD_006_Q3	In PG&E's 2026 Annual-WMP Template Workbook submitted to Energy Safety on April 30 2025, in column L of Table 11, PG&E listed "2022 WMP", "2023 WMP" and "refer to 8.4" as the most recent proceeding to review this program. a. Explain what these three responses mean. b. Were the costs of the initiative reviewed in each of these three responses. i. If so, provide evidence of the review of the costs for this initiative. ii. If not, explain where the costs for these initiatives have been reviewed. If the costs for these initiatives have not been reviewed, explain why.	a. PG&E misstated some of the proceedings in Column L of Table 11. PG&E understands that "2022 WMP", "2023 WMP" and "refer to 8.4" are not valid proceedings. b. No, the most recent proceeding to review costs for non-Transmission-related initiatives is PG&E's 2023 General Rate Case (GRC). i. Not applicable. ii. The CPUC issued a Final Decision (D.23-11-069) for PG&E's 2023 GRC on November 17, 2023. This Decision discusses PG&E's forecast capital expenditures for 2023-2025 and forecast expenses for 2023. Specifically,	Eddie Schmitt	5/19/2025	5/28/2025	5/28/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	3	Overview of WMP	3.6

245	SPD	006	SPD_006	4	No	SPD_006_Q4	In its response to SPD-004 Question 27b PG&E states "Cost-related feasibility factors are incorporated into cost assumptions as a quantifiable cost modifier, which are then included in the estimated unit cost of the proposed construction." a. Provide the quantifiable cost modifier for each of the seven "primary examples of feasibility constraints" listed in Question 27. b. Explain how PG&E determined the value for each of the quantifiable cost modifiers listed in Question 27.	a. The primary examples of feasibility constraints listed in Question 27b are not an exhaustive list of cost adders that could be applied to a project during scoping. As we proceed through scoping, we may identify additional cost adders or constraints that could influence how we model the expected cost. The cost at the scoping stage is considered an Association for the Advancement of Cost Engineering (AACE) Class 5 estimate, which is based on limited project definition and serves as a preliminary assessment with a potential accuracy range of -50% to +100%. Class 5 estimates are used for strategic planning, evaluating project viability, and comparing different project options. Please refer to "WMP-Discovery2026-2028_DR_SPD_006-Q004Atch01CONF.xlsx" for a breakdown of cost adders and constraints, including their associated amounts. These costs encompass items related to the feasibility constraints listed in Question	Eddie Schmitt	5/19/2025	6/2/2025	6/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	1	No	8	Grid Design, Operations, and Maintenance	8.2.1
246	SPD	006	SPD_006	5	No	SPD_006_Q5	In a meeting on May 9th to discuss the Wildfire Benefit Cost Analysis (WBCA) Tool, SPD understood from PG&E that a limited number of circuit segments had been evaluated according to the System Hardening Project Scoping Decision Tree and Process found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP. Per page 182 of the 2026-2028 WMP SPD understands that the decision trees will inform mitigation selection beginning in 2027. a. Provide the total number of circuit segments where PG&E has already applied the decision tree for mitigation work in 2027 and 2028. b. Provide the total number of circuit segments where PG&E intends to apply the decision tree for work done in 2027 and 2028.	a. As of May 29, 2025, a total of 28 circuit segments have been reviewed against the System Hardening Project Scoping Decision Tree and Process found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP and progressed through scoping. Due to size or complexity, not all of these segments will be included in the 2027 workplans. Circuit segments for the 2028 workplan have not yet been evaluated using these decision trees. b. PG&E plans to use the System Hardening Project Scoping Decision Tree and Process found in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP for an additional 35 circuit segments for consideration in the 2027 workplan. Circuit segments for 2028 have not yet been evaluated using these Decision Trees.	Eddie Schmitt	5/19/2025	6/2/2025	6/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	3	Overview of WMP	3.6
247	SPD	006	SPD_006	6	No	SPD_006_Q6	In a meeting on May 9th to discuss the Wildfire Benefit Cost Analysis (WBCA) Tool, PG&E informed SPD that the baseline value of risk used to calculate CBR is different in the 2024 RAMP and the WBCA Tool. a. Provide a detailed step by step explanation of how CBR is calculated for the 2024 RAMP and WBCA Tool. This should include an example with a table that is similar Table PG&E-8.2.1.2-2 in the 2026-2028 Base WMP but should continue through to the entire CBR calculation. i. In the narrative answer to this question highlight the differences in the baseline value of risk used in each approach. Explain any other differences.	a. Pursuant to agreement with SPD, PG&E will provide this response on May 28, 2025. b. Historically, the near permanent mitigation of wildfire risk through infrastructure upgrades has been the focus of most system hardening initiatives. Outage programs, such as EPSS and PSPS, are operational mitigations that reduce wildfire risk at the expense of reliability risk. However, to maintain focus on only the infrastructure upgrades, neither the wildfire risk reduction nor the reliability risk	Eddie Schmitt	5/19/2025	5/22/2025	5/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	3	Overview of WMP	3.6
247	SPD	006	SPD_006	6(s)	Yes	SPD_006_Q6(s)	In a meeting on May 9th to discuss the Wildfire Benefit Cost Analysis (WBCA) Tool, PG&E informed SPD that the baseline value of risk used to calculate CBR is different in the 2024 RAMP and the WBCA Tool. a. Provide a detailed step by step explanation of how CBR is calculated for the 2024 RAMP and WBCA Tool. This should include an example with a table that is similar Table PG&E-8.2.1.2-2 in the 2026-2028 Base WMP but should continue through to the entire CBR calculation. i. In the narrative answer to this question highlight the differences in the baseline value of risk used in each approach. Explain any other differences. b. Explain why PG&E decided to use a baseline value of risk to calculate the CBR in the WBCA Tool that was	Q006Supp01Atch01.xlsx" for a simplified example CBR calculation using WBCA methodology in similar format to Table PG&E-8.2.1.2-2 on the "WBCA Example" sheet and a CBR calculation example using the 2024 RAMP methodology on the "2024 RAMP Example" sheet. The values and assumptions used in the "WBCA Example" sheet of the attachment are an illustrative example only, as the WBCA is still in development and subject to change. The attachment provides the detailed CBR steps. For the RAMP CBR the	Eddie Schmitt	5/19/2025	5/28/2025	5/28/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	1	No	3	Overview of WMP	3.6
248	SPD	006	SPD_006	7	No	SPD_006_Q7	In SPD-PGE-S8884-017 Question 1b., PG&E stated that the WBCA model uses Capital Costs, O&M Costs, and risk reduction inputs to evaluate alternative mitigations at the circuit segment-level. In SPD-PGE-S8884-017 Question 1g., PG&E also stated that the "key evaluation metrics of the WBCA model are the CBRs and Net Benefits for each circuit segment for certain system hardening mitigation alternatives". In Figure PG&E 8.2.1-2, CBR and Net Benefits are necessary to determine before PG&E can use the Decision-Tree in Figure PG&E 8.2.1-2 in the 2026-2028 Base WMP to determine a system hardening mitigation at a given CPZ. Explain whether or not this means that PG&E must have Capital Costs, O&M Costs and risk reduction inputs at the circuit segment level before PG&E can determine which system hardening mitigation will be selected at a given CPZ.	The Capital Costs, O&M Costs, and risk reduction inputs are necessary to calculate the CBR and Net Benefit values for individual circuit segments during the scoping process as reflected in Figure PG&E 8.2.1-2. b. PG&E has developed estimated O&M expenditures at the circuit segment-level as an input to the WBCA model for system hardening mitigations, including undergrounding, overhead hardening, and remote grids to account for ongoing WMP-Discovery2026-2028_DR_SPD_006-Q007 Page 2 maintenance	Eddie Schmitt	5/19/2025	5/22/2025	5/22/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_006.zip	0	No	3	Overview of WMP	3.6
249	OEIS	012	OEIS_012	1	No	OEIS_012_Q1	On April 18, 2025, PG&E submitted substantive errata for its 2026-2028 Base WMP. On May 16, 2025, PG&E submitted non-substantive errata for its 2026-2028 Base WMP. In both errata, PG&E made updates to Table 3-3: Summary of Projected WMP Expenditures and stated the updates were made "to refine forecast in alignment with upcoming General Rate Case." a. Explain the forecast refinements that were made for the April 18, 2025, errata. b. Explain the forecast refinements that were made for the May 16, 2025, errata.	(April 4, 2025) and PG&E's 2027 General Rate Case (May 15, 2025). PG&E aimed to align forecasted projected expenditures reported in Table 11 of the Annual-WMP Template Workbook_vr1 with forecasts for the upcoming GRC. However, PG&E continued to refine its forecast for the GRC beyond the due dates for both the Final Submission of the WMP on April 4th and the Substantive Errata due on April 18th, resulting in the changes reported in both the Substantive and Non-Substantive Errata.	Nathan Poon	5/23/2025	6/5/2025	5/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_012.zip	1	No	3	Overview of WMP	3.6
250	OEIS	012	OEIS_012	2	No	OEIS_012_Q2	In its 2026-2028 WMP, Section 9.7.3 "IVM Scheduling," PG&E states that, "For TIVM, previously worked ROWs are reassessed every 2-5 years" (p. 386). In response to data request OEIS-P-WMP_2025-PGE-001, question 16, PG&E stated "[w]ith the availability of LiDAR data, vegetation height and density conditions are analyzed each year." On page 385, PG&E references Utility Standard: TD-7111S. In section 6 "Annual Planning," the standard states that "work plans are created annually" and reiterates that "ROWS are reassessed every 2 to 5 years." In the same standard, PG&E states, "Thresholds for implementing TIVM are considered when incompatible vegetation exceeds 3 feet in height or exceeds 50% ground coverage within the managed area." These various statements seem to contradict each other, with vegetation data assessed and	year's work plan for Transmission IVM (TIVM). b. PG&E has an annual Transmission IVM program. TIVM ROW maintenance is dependent on annual resource availability along with how well-established the community of compatible vegetation is in a ROW. Considering these two key factors and others cited in the WMP, the TIVM ROW cadence may vary. c. "Previously worked ROWs" are those where significant program or project specific vegetation maintenance was performed in a ROW to meet NERC FAC-003 requirements or where other ROW clearing/widening occurred typically as part of previous Transmission ROW reclamation or ROW Expansion program efforts. "Previously worked ROWs also include those that have had ongoing TIVM maintenance.	Nathan Poon	5/23/2025	5/29/2025	5/29/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_012.zip	0	No	9	Vegetation Management and Inspections	9
251	OEIS	012	OEIS_012	3	No	OEIS_012_Q3	Q03. Regarding Table 6-4 In response to data request OEIS-P-WMP_2025-PGE-008, question 2, subpart (b), PG&E provided an updated version of Table 6-4 from its 2026-2028 Base WMP that included risk density. a. Provide a new version of Table 6-4 with an updated risk ranking of circuit segments based on risk per mile, as used for prioritization of projects. The circuit segments within the new table should not be the same as those currently within Table 6-4, which are ranked based on overall risk scores. The updated table should include the following additional columns: i. Total mileage for the circuit segment ii. 2026 planned undergrounding (circuit mileage) iii. 2027 planned undergrounding (circuit mileage) iv. 2028 planned undergrounding (circuit mileage) v. 2026 planned covered conductor (circuit mileage) vi. 2027 planned covered conductor (circuit mileage) vii. 2028 planned covered conductor (circuit mileage) viii. 2026 planned line removals (circuit mileage) ix. 2027 planned line removals (circuit mileage) x. 2028 planned line removals (circuit mileage) xi. HFRA designation (Tier 2, Tier 3, non-HFTD HFRA, or non-HFRA)	Please see attachment "WMP-Discovery2026-2028_DR_OEIS_012-Q003Atch01.xlsx" for the requested information. This revised version of Table 6-4 consists of the 275 circuit segments that make up the top 20% of overall utility risk per primary overhead mile. Please note that total mileage is interpreted to mean total primary overhead miles and is included in Column C.	Nathan Poon	5/23/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_012.zip	1	No	5	Risk Methodology & Assessment	5.5.2
252	SPD	007	SPD_007	1	No	SPD_007_Q1	The following questions are all related to PG&E's estimated Mitigation Effectiveness. a. Table PG&E-8.2.1-3 shows the blended average effectiveness for system hardening scenarios. The table is titled "Ignition Mitigation Effectiveness" but SPD understands from footnote (a) and review of "WMP-Discovery2026-2028_DR_SPD_001-Q010Atch02.xlsx" that the blended average effectiveness reported are based off outage data instead of ignition data. SPD also understands that PG&E does not use the mitigation effectiveness values from Table PG&E-8.2.1-3 when calculating the risk mitigated for each circuit segment from various mitigation programs and instead uses the mitigation effectiveness estimate for each specific ignition driver multiplied by the calculated risk for each circuit segment for each driver from the WDRM v4 model. 1 SPD used the driver mitigation effectiveness from ACI 25J and applied those values to the circuit segment ignition driver risk from WDRM v4 to establish the three cases presented in the table below: (1) all circuits segments in the WDRM v4, (2) all circuits segments in the HFTD in the WDRM v4, (3) the top 5% riskiest circuit segments.2 SPD found the values in Table PG&E-8.2.1-3 appears to overestimate the risk reduced compared to the calculated risk reduction which PG&E uses in its risk calculations for covered conductor and underground primary. Mitigation Effectiveness Summary Area where Mit. Effect. is Calculated WDRM SH-Risk (natural units) Residual Risk (natural units) Residual Risk (%) Mitigation Effectiveness (%) CC UG Primary UG All CC UG Primary UG All CC UG Primary UG All Total 1097	a. The values provided in Table 8.2.1-3 are blended average effectiveness values using outages as a proxy for ignitions. Limited ignition data is available for hardened assets and therefore we do not have sufficient data to use ignition data as the basis for our mitigation effectiveness analysis. Because we do not have sufficient ignition data, PG&E uses outage data as a reasonable proxy because it is abundantly available and allows for a statistically significant analysis. The unique percentage of risk reduced by these mitigations when applied to a specific circuit segment, or group of segments, will vary above or below the nominal values in the table. WMP-Discovery 2026-2028_DR_SPD_007-Q001 Page 7 - PG&E interprets SPD's calculations to represent mitigation effectiveness as a function of risk reduction based on the risk drivers at the circuit segment level, then calculating an average of those results. - In WMP Table 8.2.1-3, PG&E reports the Blended Average Effectiveness values to portray an average effectiveness of each mitigation in preventing ignitions, using abundant historic outages as a proxy to support a more statistically significant study than can be performed using historic ignitions. PG&E stands by our analysis results as accurate average effectiveness values. - The difference between the approaches above are: o We plan on employing a mitigation method that is calculated to be, on average, 98% effective at reducing the potential of an ignition at the undergrounded location. o The estimated risk reduction to be achieved in any given location is based on the risk drivers at that specific location, and the amount of risk that exists at that location (independent of the Blended Average Effectiveness). b. PG&E uses outages as a proxy for ignitions since there is abundant data available from thousands of different types of failure events, each with the potential to cause an ignition, to support a statistically significant analysis. c. The primary objective of the WDRM v4 is to predict wildfire risk associated with the distribution system. The WDRM does not calculate mitigation effectiveness. Further, the WDRM v4 is a set of machine learning (ML) models, and it is not appropriate to extract causal information from the predictive models. The models predict future values based on historical event data.	Eddie Schmitt	6/2/2025	6/12/2025	6/12/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	No	5	Risk Methodology & Assessment	5.4
253	SPD	007	SPD_007	2	No	SPD_007_Q2	Does PG&E's Pr(I|O) model used as part of its WDRM v4 vary spatially or are the values presented in TABLE ACI-PG&E-25U-01-1 uniformly applied to all assets?	The p(o|i) model that contributes to WDRM v4 varies spatially throughout the distribution service territory. Table ACI-PG&E-25U-01-1 illustrates an improvement that was made to the p(o|i) model in support of WDRM v4. Whereas WDRM v3 considered each asset and pixel sub-model independently, the lack of training data complicated model training for those sub-models with very low ignition counts. Thus model-groups were made to increase ignition counts for the training set of sub-models that had similar ignition characteristics. For WDRM v4, each sub-model's p(o|i) outcome considers both model group attributes and individual sub-model attributes that vary spatially over the distribution service territory. A detailed description of the p(o|i) model is provided in Section 3.6 of the "Distribution Event Probability Models v4 Documentation", which is part of the WDRM v4 documentation suite provided with the 2026 – 2028 WMP submission.	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	Yes	5	Risk Methodology & Assessment	5.4
254	SPD	007	SPD_007	3	No	SPD_007_Q3	For lines where the wildfire risk is mitigated by undergrounding the primary lines, does PG&E have criteria for PSPS or expect to use PSPS on these lines? Explain a. What role does the remaining risk from overhead hardened secondary lines play in the decision to continue to use PSPS on circuit segments where the primary lines have been undergrounded (assuming no upstream lines are subject to PSPS)? Explain.	The purpose of PSPS is to ensure that primary overhead lines are de-energized when there is a significant weather risk from an offshore wind event. As such, PSPS criteria is primarily influenced by the weather rather than the inherent wildfire risk alone. Primary underground lines are not targeted in the PG&E PSPS process. However, underground lines may become de-energized due to criteria being met upstream or downstream of the undergrounded circuit segment. a. Secondary lines, whether hardened or unhardened, do not impact the decision to initiate a PSPS event. Only primary lines influence the scope of the PSPS event	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	Yes	6	Wildfire Mitigation Strategy Development	6.1.3.1
255	SPD	007	SPD_007	4	No	SPD_007_Q4	SPD understood that PG&E was planning to change its replacement criteria for poles intrusively inspected to be primarily based off a calculated safety factor rather than the calculated remaining strength. SPD understood that one of the criteria for pole replacement after an intrusive inspection would be if the remaining strength calculated was less than 25 percent. SPD understood this change would come in 2025, but the WMP only states that PG&E is evaluating a transition. Provide an update on the proposed change and currently anticipated criteria for pole replacement or reinforcement based on this change.	PG&E is currently working through the process mapping and data exchanges for transitioning from remaining strength to safety factor. As part of that process, we are evaluating the necessary system updates (Inspect Application and/or SAP) and working with our IT partners on solutions. In addition, we will be piloting the process to ensure timely and efficient pole safety factor assessment, prior to officially transitioning our rejection criteria to safety factor from remaining strength. Additionally, as a further part of this process, we are continuing to evaluate the appropriate thresholds. We have not committed to the 25% remaining strength, as we are still analyzing what should be the appropriate threshold	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	Yes	8	Grid Design, Operations, and Maintenance	8.3.11

256	SPD	007	SPD_007	5	No	SPD_007_Q5	In part c of "WMP-Discovery2026-2028_DR_SPD_003-Q009.pdf," PG&E stated the estimated risk reduction was approximate for WDRM v4 because the circuit segments may not match up. Question 9 of SPD-PGE-WMP2026-003 requested risk reduction information for work from 2023-2026 using WDRM v4; meaning that work on a circuit segment could have been performed in 2023. PG&E's response to Question 9 would be logical if WDRM v4 was based off a snapshot of 2025 circuit segments because some of the undergrounding work in question was performed on circuit segments in 2023 and 2024. However, SPD understands that the circuit segments in WDRM v4 are based off a Jan 2023 snapshot of the circuit segments. Since these two timeframes are essentially the same, why would the risk values provided by WDRM v4 risk model not be representative of the risk reduced by projects in 2023, 2024, 2025 and 2026?	PG&E's historic workplans are recorded based on circuit segment names rather than geospatial asset data. In the 2023-2026 period, most of the work constructed was planned using a prior version of the WDRM, and cannot be accurately represented using WDRM v4B. As stated in PG&E's response to part c of WMP-Discovery2026-2028_DR_SPD_003-Q009, actual circuit segmentation varies over time and there is no guarantee that a project originally targeted on a circuit segment will still lie within the bounds of that same circuit segment's namesake in the updated risk model. Said another way, PG&E's grid topology is not static and can be affected by increased or reduced sectionalization, line removal, line addition, such as new business installations, or other changes. For example, the circuit segment labeled Hoopa 1101CB contained 39.24 miles of primary overhead according to the GIS snapshot utilized in WDRM v3; however, the circuit segment labeled Hoopa 1101CB in WDRM v4 contains only 0.02 primary overhead miles. Conversely, the circuit segment labeled Molino 1103CB contained only 8.78 miles of primary overhead according to the GIS snapshot utilized in WDRM v3; however, the circuit segment labeled Molino 1103CB in WDRM v4 contains 31.05 primary overhead miles. The risk reduction achieved by mitigation of either of the aforementioned circuit segments would vary significantly if assessed based on WDRM v3 versus v4.	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	Yes	5	Risk Methodology & Assessment	5.4
257	SPD	007	SPD_007	6	No	SPD_007_Q6	In "WMP-Discovery2026-2028_DR_SPD_003-Q014.pdf," PG&E states that "Quality Assurance and Quality Controls assessments do NOT include verification of the height and distance to the conductor of each strike vegetation point specified for removal, and each vegetation strike point noted as an inventory tree." SPD understands this to mean that these programs do not review each and every strike vegetation point specified for removal and each and every vegetation strike point noted as an inventory tree that PG&E creates as part of its Vegetation Management program. However, if a Quality Assurance or Quality Control assessment is performed, and a tree specified for removal is reviewed as part of one of these assessments, do these assessments: a. verify the height and distance to the conductor of the strike vegetation point specified for removal? b. confirm it is actually a strike tree? c. Separately, if these assessments review a vegetation strike point noted as an inventory tree, do these programs: i. verify the height and distance to the conductor of the strike vegetation point specified for removal? ii. confirm the tree is actually a strike tree?	a. No, the QA or QC assessment does not verify height and distance to the conductor of the strike vegetation point specified for removal by VM Operations inspector. b. No, the QA or QC assessment does not confirm the tree is actually a strike tree. c. Responses: i. No, QA or QC assessment reviews do not verify the height and distance to the conductor of the strike vegetation point specified for removal by the VM Operations inspector. ii. QA or QC assessment does not review a vegetation strike point specified for removal by the VM Operations inspector and therefore, the assessments do not confirm whether or not the tree is actually a strike tree. For trees that have not been specified for removal by the VM Operations inspector, if QA or QC determines that a tree is defective and likely to fail within the maintenance cycle, QA or QC would then verify whether it is a strike tree and, if so, report a deficiency finding to VM Operations.	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	0	Yes	9	Vegetation Management and Inspections	9
258	SPD	007	SPD_007	7	No	SPD_007_Q7	PG&E-8.2.1-2 in the 2026-2028 Base WMP presents one step in the Hybrid Cost Benefit Analysis that states "Input CPI/UG alternative scope mileage and unit cost assumptions into Foundry WPC Feedback Loop Tool". a. Provide a description of the Foundry WPC Feedback Loop Tool. b. Provide a description of any functions or formulas used within the Foundry WPC Feedback Loop Tool. c. Provide an example of a circuit segment where the Foundry WPC Feedback Loop Tool was used to determine the ratio of OH and UG that meets the CBR and Net Benefit requirements. For that example circuit segment, list all of the inputs that were submitted to the Foundry WPC Feedback Loop Tool as well as what the final ratio of OH and UG was for that circuit segment. d. Provide any documentation that exists on the Foundry WPC Feedback Loop Tool.	Note, the Foundry WPC Feedback Loop tool has been initiated and is in the final stages of development in Foundry, however it is not yet ready for use. In the meantime, we are using a preliminary version of this tool in Excel. a. The Foundry WPC Feedback Loop Tool will dynamically calculate the Cost Benefit Ratio (CBR) values for each proposed mitigation scenario on a given circuit segment as the scenarios are evaluated through the scoping process. For example, the WBCA will calculate initial CBR values for a given circuit segment for each mitigation type (100% Underground, 100% Overhead Hardening with EPSS and DCD, and Hybrid Scenario). The WPC Feedback Loop tool will then be used to re-calculate the CBR values using WBCA inputs along with more detailed mitigation scenarios for specific mileage and updated capital cost assumptions. b. The description of the data functions and formulas to calculate the CBRs for each mitigation plan scenario on the circuit segment are included in attachment "WMP Discovery2026-2028_DR_SPD_007-Q007Atch01CONF.xlsb", which is the excel version of the WPC Feedback Loop tool. c. Attachment "WMP-Discovery2026-2028_DR_SPD_007-Q007Atch01CONF.xlsb" includes an example circuit segment, French Gulch 11022902, that runs through the WPC Feedback Loop. The "Main" worksheet shows the circuit segment being run through the Feedback Loop tool, and the "Administration" workbook provides the circuit segment data and risk parameters. French Gulch 11022902 was first compared with a purely OH and a purely UG solution. The UG solution was not selected because despite having a CBR above 1 and within 50% of OH (1.35 > 0.5 × 2.25) (see cells E137 and F137), its Net Benefit ($28.48M) was lower than OH solution ($43.96M) (See cells E135 and F135). This result led to an analysis of the Hybrid alternative based on the criteria outlined in the System Hardening Project Scoping Decision Tree and Process (Figures 8.2.1-1-3), which was driven by tree fall-in-risk, a small amount of ingress/egress risk from two highway crossings, and a shift from the OH alternative for the end-of line customer where the UG option required significant relocation. When compared to the OH option, the Hybrid alternative had a greater CBR (2.43 > 2.25) (see cells G137 and F137) and Net Benefit ($49.97M > $43.96M)) (see cells G135 and F135).	Eddie Schmitt	6/2/2025	6/5/2025	6/5/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_007.zip	1	Yes	8	Grid Design, Operations, and Maintenance	8.2.1
259	OEIS	013	OEIS_013	1	No	OEIS_013_Q1	On page 363 of its WMP, PG&E states that it is "in the process of evaluating which component(s) of the [Focused Tree Inspection (FTI) and Tree Removal Inventory (TRI)] scope will be incorporated into the Distribution Routine Patrol Program. In response to Energy Safety's data request 001, question 09, subpart c, PG&E stated that it "expects to determine which, if any, component(s) of FTI and TRI will be incorporated into the Distribution Routine and/or Hazard Patrol programs by the end of 2025." a. Define "component(s)" as used in this context. b. For FTI: i. Provide a list of all components (as defined in a, above) comprising the program. ii. Provide a list of all data fields collected and indicate which data fields are currently collected under Distribution Routine Patrol. c. For TRI: i. Provide a list of all components (as defined in a, above) comprising the program. ii. Provide a list of all data fields collected and indicate which data fields are currently collected under Distribution Routine Patrol.	a. PG&E's evaluation of the programs entails a holistic assessment of the processes involved in each program, which may include but is not limited to analysis of the relevant data fields to be included in the consolidated programs. For purposes of responses to subparts (b) and (c) below, we have provided the only data fields that are collected for each program. b. FTI: i. Please see the data fields provided in response subpart (b)(ii) below as these are the components collected during inspection on each program. ii. Please refer to attachment "WMP-Discovery2026-2028_DR_OEIS_013-Q001Atch01.xlsx" for a list of all data fields collected under FTI and Distribution Routine Patrol. The worksheet labeled "TRA in OneVM" contains the TRAQ questions answered on the FTI program. The worksheet labeled "OneVM" contains the prescription data fields entered by an inspector during Routine Distribution and FTI Inspections. Please note that not all fields are mandatory. c. TRI: i. Please see the data fields provided in response subpart (c)(ii) below as these are the components collected during inspection on each program. ii. Please refer to attachment "WMP-Discovery2026-2028_DR_OEIS_013-Q001Atch01.xlsx" for a list of all data fields collected under TRI and Distribution Routine Patrol. The worksheets labeled "TRI" and "OneVM" contain the prescription data fields entered by an inspector during TRI and Routine Distribution program inspections respectively. Please note that not all fields are mandatory	Nathan Poon	6/3/2025	6/6/2025	6/6/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_013.zip	1	No	9	Vegetation Management and Inspections	9.2.1.6
260	OEIS	014	OEIS_014	1	No	OEIS_014_Q1	Regarding PG&E's Response to OEIS-P-WMP_2025-PG&E-013, Question 1. In subpart a to PG&E's response to OEIS-P-WMP_2025-PG&E-013, PG&E stated "PG&E's evaluation of the programs [FTI and TRI] entails a holistic assessment of the processes involved in each program". a. Provide a list of the processes involved in FTI. Include a brief description of each process. Indicate which processes are currently performed under Distribution Routine Patrol. b. Provide a list of the processes involved in TRI. Include a brief description of each process. Indicate which processes are currently performed under Distribution Routine Patrol.	a. FTI currently includes the processes listed in the item bullets below. Please see also "WMP-Discovery2026-2028_DR_OEIS_014-Q001Atch01CONF.pdf." The subbullets indicate which of these FTI processes are currently performed under the Distribution Routine Patrol program. • Qualification – FTI inspections are performed by International ISA Tree Risk Assessment Qualification (TRAQ)-certified resources o TRAQ certification is not required to perform a Distribution Routine Patrol inspection. However, all inspectors must complete the required PG&E Academy trainings, as outlined in the Distribution Routine Patrol procedure, and a subset of those inspectors are TRAQ certified. • Inspection – FTI requires a Level 2 inspection of all strike trees o Distribution Routine Patrol first performs a Level 1 inspection; and, if vegetation meets any of the conditions described in the Hazard Trees/Vegetation Clearance section of the "California Power Line Fire Prevention Guide", then the VMI must perform a Level 2 inspection of the strike tree. WMP-Discovery 2026-2028_DR_OEIS_014-Q001 Page 2 • Record – FTI creates records for all strike trees in the system of record o Distribution Routine Patrol creates a record for a tree requiring work or adds a prescription to an existing tree in the system of record. • Document – FTI utilizes a Basic Tree Risk Assessment Form (referred to as TRAQ form) for any tree requiring work o Distribution Routine Patrol does not require, but does provide the optionality, to utilize the TRAQ Form for any tree requiring work. The components available in One VM for Distribution Routine Patrol inspections were included in "WMP-Discovery2026-2028_DR_OEIS_013-Q001Atch01.xlsx". • Quality – QC is performed on 100% of FTI work. o For Distribution Routine Patrol, QC is based on a random sample set. b. The TRI program addresses existing vegetation points, as outlined in "WMPDiscovery2026-2028_DR_OEIS_014-Q001Atch02CONF.pdf." For those existing vegetation points:	Nathan Poon	6/10/2025	6/13/2025	6/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_014.zip	2	No	9	Vegetation Management and Inspections	9.2.1.6
261	SPD	004	SPD_004	39(s2)	Yes	SPD_004_Q39(s2)	For Table 6-3 in the 2026-2028 Base WMP, PG&E provided an "Activity-Effectiveness-Wildfire Risk' value for each activity listed. However, for six of these activities PG&E did not provide Cost Benefit Ratios.3 a. Provide the Cost-Benefit Ratios for each of these activities as is required by D.22-12-027. b. If these calculations of CBR vary from what was submitted in PG&E's 2024 RAMP Application, explain how much they vary and why.4 c. Complete Table 6-3 for all activities listed in this WMP. Add the Initiative Activity Tracking ID as a column in the completed Table. Present this completed version of Table 6-3 in an Excel spreadsheet.	c. PG&E included all of the activities that have a quantified risk reduction value in Table 6-3. Other mitigation progra	Eddie Schmitt	4/30/2025	5/30/2025	5/30/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	6	Wildfire Mitigation Strategy Development	6
Pre Discovery 01	TURN	001	TURN_001	1	No	TURN_001_Q1	Please provide a contemporaneous copy of the pre-submission, and all supporting materials, submitted to the Office of Energy Infrastructure Safety on March 7, 2025.	PG&E objects to this request because the requested information is confidential. Additionally, the document that TURN is seeking is an unfinished draft and will not facilitate TURN's ability to make an informed public comment. Furthermore, this request improperly seeks to conduct discovery outside of the Wildfire Mitigation Plan (WMP) review period, which begins for PG&E on April 4, 2025. See Energy Safety Policy Division Guidelines, dated February 24, 2025, at page 7. We will be happy to provide TURN with its 2026-2028 WMP on April 4, 2025, when it is	A Mireille Fall-Fry	2/24/2025	3/7/2025	2/28/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_001.zip	0	No	N/A	N/A	N/A
Pre Discovery 01	TURN	001	TURN_001	1(s)	Yes	TURN_001_Q1(s)	Please provide a contemporaneous copy of the pre-submission, and all supporting materials, submitted to the Office of Energy Infrastructure Safety on March 7, 2025.	Pursuant to PG&E's agreement with TURN and the Non-Disclosure Agreement executed on March 7, 2025, and notwithstanding or waiving our objections, please see "WMP-Discovery2026-2028_DR_TURN_001-Q001Supp01Atch01CONF.zip," for our Wildfire Mitigation Plan (WMP) pre-submission that was provided to Energy Safety. Please note that this is not our final WMP submission and may be subject to revisions before the final WMP is submitted on April 4, 2025. Please note that this is not our final WMP submission and may be subject to revision before the final WMP is submitted on April 4, 2025. Please note that we have designated this entire submission as confidential to align with Energy Safety's pre-submission process and guidelines which stipulate that the pre submission documents are only for Energy Safety's use in performing a pre-submission check and not for authorizing a subsequent public release of WMP content.	A Mireille Fall-Fry	2/24/2025	3/7/2025	3/7/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-TURN_001.zip	1	No	N/A	N/A	N/A
Pre Discovery 02	CALPA	001	CALPA_001	1	No	CALPA_001_Q1	Please provide a copy of each WMP-related document, submission, or report you submit to the Office of Energy Infrastructure Safety (Energy Safety) in 2026 that is related to your 2026-2028 WMP or WMP quarterly reports, unless the document is publicly available through Energy Safety's dockets. This request is limited to materials, data files, geodatabases, and documents that are provided to Energy Safety to provide additional details or context concerning information or statements in your WMP (and any subsequent revisions or change orders affecting your WMP). Provide each document to Cal Advocates within one business day of the document's submittal to Energy Safety. (If you have submitted a document to Energy Safety prior to this data request, please provide within 10 business days from the issuance of this data request.)	In addition to all general objections, PG&E specifically objects to this request on the grounds that it is unduly burdensome. PG&E further objects to this request as the information requested is vague, ambiguous, and overbroad. Lastly, PG&E objects to this request on the grounds that it seeks to impose a continuing response obligation on the responding party. Continuing discovery obligations are not permitted under California law. Bikes v. Exxon Mobil Corp., 124 Cal.App.4th 1315, 1328 (2004); Code Civ. Proc. § 2030.060(g). Notwithstanding and without waiving these objections, PG&E responds as follows. We will do our best to provide the requested information within the requested timeframe, or as soon as possible thereafter. However, please note that due to the timing and voluminous nature of our submissions to Energy Safety, it may not always be possible to provide the information sought within the requested timeframe. In these instances, we will provide the requested information as soon as it is reasonably possible. Additionally, with the exception of confidential and spatial data, please note that we post our WMP-related submissions on our website, www.pge.com/wildfiremitigationplan, on the same business day that the documents are provided to Energy Safety. WMP-Discovery2026-2028_DR_CalAdvocates_001-Q001 Page 2 Lastly, PG&E objects to the portion of this request that instructs the following: "[i]f you have submitted a document to Energy Safety prior to this data request, please provide within 10 business days from the issuance of this data request." This request is vague, ambiguous, overbroad, and unduly burdensome. This request is not limited in time or scope and requests every single document provided by PG&E to Energy Safety	Holly Wehrman	3/5/2025	3/10/2025	3/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-CalAdvocates_001.zip	0	No	N/A	N/A	N/A

Pre Discovery 03	CALPA	001	CALPA_001	2	No	CALPA_001_Q2	Please provide a copy of your WMP pre-submission within three business days of its submission to Energy Safety.	Please see "WMP-Discovery2026-2028_DR_CalAdvocates_001-Q002Atch01CONF.zip" for our Wildfire Mitigation Plan (WMP) pre-submission to Energy Safety. Please note, that this is not our final WMP submission and may be subject to revision before the final WMP is submitted in April 2025. Please note, we have designated this entire submission as confidential to align with Energy Safety's pre-submission process and guidelines which stipulate that the pre submission documents are not to be made public.	Holly Wehrman	3/5/2025	3/10/2025	3/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-CalAdvocates_001.zip	1	No	N/A	N/A	N/A
Pre Discovery 04	MGRA	001	MGRA_001	1	No	MGRA_001_Q1	Please provide for Asset Point data for Camera, Fuse, Support Structure, and Weather Station.	In response to this request, PG&E is providing Camera and Weather Station data, as delivered in our 2024 Quarterly OEIS GIS Data Guidelines Submissions. PG&E is also providing non-confidential data from the Support Structure feature class. PG&E is not WMP-Discovery2026-2028_DR_MGRA_001-Q001 Page 2 providing data for the Fuse feature class as this data is confidential critical energy infrastructure information (CEII). Please see attachment "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip" for the data provided in response to the data request.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	1	No	N/A	GIS	N/A
Pre Discovery 05	MGRA	001	MGRA_001	2	No	MGRA_001_Q2	Provide Asset Line data for Transmission Line (as permitted as non-confidential), Primary Distribution Line, and Secondary Distribution Line.	In response to this request, PG&E is providing non-confidential data for the Primary and Secondary Distribution Line Feature Classes, as delivered in our 2024 OEIS GIS Data Guidelines Submissions. Please see "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip". PG&E is not providing the Transmission Line feature class because it is confidential CEII. PG&E refers MGRA to review externally available datasets. Specifically, the California Energy Commission's (CEC) "California Electric Transmission Lines" dataset.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
Pre Discovery 06	MGRA	001	MGRA_001	3	No	MGRA_001_Q3	Provide PSPS Event data. Include Event Log, Event Line, Event Polygon data. Please exclude customer meter data. Provide all PSPS Event Asset Damage data. Data should include time, duration	In response to this request, PG&E is providing non-confidential data for the PSPS Event Line, PSPS Event Log, PSPS Event Polygon, PSPS Event Conductor Damage Detail, PSPS Event Damage Point, and PSPS Event Support Structure Damage Detail feature Classes, as delivered in our 2024 OEIS GIS Data Guidelines Submissions. Please see "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip". Please note, PSPS events took place during Q3 and Q4 2024 only.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
Pre Discovery 07	MGRA	001	MGRA_001	4	No	MGRA_001_Q4	Provide Risk Event Point data, including Wire Down, Ignition, Transmission unplanned outage (as classified non-confidential), Distribution Unplanned Outage data, Distribution Vegetation Caused Unplanned Outage, Risk Event Asset Log. Attributes should include location, time, and cause information.	In response to this request, PG&E is providing non-confidential data for the Wire Down, Ignition, and Unplanned Outage feature classes, as delivered in our 2024 OEIS GIS Data Guidelines Submissions. Please see "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip". The Office of Energy Infrastructure Safety changed their schemas in version 3.0 of the Data Guidelines released December 14, 2022, to no longer include Transmission Unplanned Outage, Distribution Unplanned Outage, Distribution Vegetation Caused Unplanned Outage, and Risk Event Asset Log feature classes, but rather consolidated these previous outage feature classes into a single Unplanned Outage feature class1. PG&E adopts and reports out against the required Data Guidelines as required to by Energy Safety. Please note, we have included the requested cause data in the referenced attachment.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
Pre Discovery 08	MGRA	001	MGRA_001	5	No	MGRA_001_Q5	Under Initiatives, please provide Grid Hardening data, including Hardening Log, Hardening Point, and Hardening Line data. Inspection data is not requested at this time.	In response to this request, PG&E is providing non-confidential data for the Grid Hardening Point and Grid Hardening Line feature classes, as delivered in our 2024 OEIS GIS Data Guidelines Submissions. Please see "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip". The Office of Energy Infrastructure and Safety changed their schema for version 3.0 of the Data Guidelines (released December 14, 2022) which removed the Grid Hardening Log feature class.1 PG&E adopts and reports out against the required Data Guidelines as required to by Energy Safety.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
Pre Discovery 09	MGRA	001	MGRA_001	6	No	MGRA_001_Q6	Under Other Required Data, please provide Red Flag Warning Day polygon data including dates and duration.	In response to this request, PG&E is providing the Red Flag Warning Day polygon feature class, as delivered in our 2024 OEIS GIS Data Guidelines Submissions. Please see "WMP-Discovery2026-2028_DR_MGRA_001-Q001Atch01.zip". Please see RedFlagWarningIssueDateTime field for the dates and the start time. Please note, duration is not a field included in Energy Safety's schema found in the Data Guidelines	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
Pre Discovery 10	MGRA	001	MGRA_001	7	No	MGRA_001_Q7	Please provide a layer indicating calculated circuit-level risk using the methodology presented in the WMP. a. If independent probability and consequence layers exist, please provide these independently as well.	The method described in our WMP to aggregate model results is conducted to produce a circuit segment level risk value, but it is not used to produce a circuit level risk value. However, the geospatial representation of circuit segments that would be provided in response to this data request involves the identification of critical energy infrastructure information (CEII), which we are required by law to maintain as confidential and cannot produce without the requesting party agreeing to protect the information through a non disclosure agreement. In an effort to reach a middle ground on this issue, in previous years, in response to this request, we provided the requesting party with risk information at the circuit segment level in Excel format that does not include geospatial information. Please see attachment "WMP-Discovery2026-2028_DR_MGRA_001-Q007Atch01.xlsx" for that same information as it relates to our current WMP.	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	1	No	N/A	GIS	N/A
Pre Discovery 11	MGRA	001	MGRA_001	8	No	MGRA_001_Q8	If PG&E maintains that providing specific data in response to the above requests would violate confidentiality as it has asserted it please provide a justification for each of the asserted violations. Likewise, if requested data cannot be provided for other reasons please provide justifications. Please expedite response to this data request to the extent required by applicable OEIS process documents.	Each individual response in this request identifies information that is being excluded on confidentiality grounds, if any, and the reason for the exclusion. CEII is defined as follows, in accordance with the definition created by the Federal government: CEII is specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure (physical or virtual) that: 1. Relates details about the production, generation, transmission, or distribution of energy; 2. Could be useful to a person planning an attack on critical infrastructure; 3. Is exempt from mandatory disclosure under the Freedom of Information Act; and 4. Gives strategic information beyond the location of the critical infrastructure.1	Joseph Mitchell	3/17/2025	4/25/2025	4/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-MGRA_001.zip	0	No	N/A	GIS	N/A
262	SPD	004	SPD_004	1(s)	Yes	SPD_004_Q1(s)	List the locations in the 2026-2028 Base WMP where PG&E's risk scaling function has been applied to the calculation of a value or risk, consequence, risk reduction, or CBR. a. If the values are in a figure, list the Figure number. b. If the values are in a table, list the Table Number. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence and the page number. d. SPD is aware that PG&E used a risk scaling function in its RAMP A.24-05-008. For each of a-c, describe if the risk scaling function used is the same as that described in the RAMP. If it is different, describe how the risk scaling function is different.	Upon review, we determined that Table 8-1, included in our prior response to subpart (b), below, does not utilize a risk scaling function.	Eddie Schmitt	4/30/2025	5/30/2025	6/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	0	No	5	Risk Methodology & Assessment	5
263	SPD	004	SPD_004	2(s)	Yes	SPD_004_Q2(s)	n an Administrative Law Judge Ruling dated April 22 2025 in the PG&E 2024 RAMP Proceeding (A.24-05-008), PG&E was directed to conduct a parallel risk evaluation using a risk-neutral, linear scaling function in preparation for PG&E's 2027 GRC Rate Case. For each of the locations listed in 1a.-1c. provide a new calculation without applying PG&E's risk scaling function. a. If the values are in a figure, recreate the figure without the scaling function applied to the calculation that generated the value(s) in the figure. b. If the values are in a table, recreate the table without the scaling function applied to the calculation that generated the value(s) in the table. c. If the values are in the text of the 2026-2028 Base WMP, provide the sentence with the new value that was generated without the scaling function being applied to the calculation.	Please see below for risk-neutral versions of the figures, tables, and text values identified in PG&E's response to Question No. 1, below. a. The following figures are regenerated without a risk scaling function on the April 2025 vintage models for the 2026 Baseline: • Figure 6-1 Projected Overall Service Territory Risk 1 April 2025 vintage models are the models that were used in the 2027 GRC Application. WMP-Discovery 2026-2028_DR_SPD_004-Q002Supp01 Page 2 b. The following tables are regenerated without a risk scaling function: • Table 6-4 Summary of Risk Reduction for Top Risk Circuits: Please see attachment "WMP-Discovery2026-2028_DR_SPD_004-Q002Supp01Atch01.pdf."	Eddie Schmitt	4/30/2025	5/30/2025	6/13/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5
264	OEIS	015	OEIS_015	1	No	OEIS_015_Q1	Q01. Regarding Idle Transmission Power Lines With reference to PG&E's response to Question 18 in Data Request OEIS-P-WMP_2025-PG&E-001: a. PG&E states that it "has three idle transmission lines totaling 2.25 miles in HFTD and HFRA" and that it "is evaluating induction mitigation options to reduce the risk of the line becoming energized through induction." i. Provide PG&E's latest findings or studies on whether idle transmission lines present a potential induction risk that could result in unintended energization. ii. Describe any procedures, policies, or future planned projects to mitigate the ignition risk of idle transmission lines that PG&E is considering. b. PG&E states that "only one of the three lines has sections that could become energized through induction." i. Specifically for this transmission line, provide PG&E's findings.	a. i. Studies on de-energized idle transmission lines are pending and not yet complete. ii. PG&E can apply segmenting, grounding or conductor removal to mitigate ignition risk. Our studies will inform the scope for how these three mitigations can be applied on de-energized idle transmission lines. b. i. We determined that the section of this line in HFRA can be mitigated through segmenting. This will mitigate induction driven risk in HFRA. The rest of the line is still under study.	Nathan Poon	6/20/2025	6/25/2025	6/25/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_015.zip	0	No	8	Grid Design, Operations, and Maintenance	8.2.9.1
265	SPD	004	SPD_004	4(s3)	Yes	SPD_004_Q4(s3)	Fill in the data requested in the attached workbook titled "Decision Tree Results by Circuit Segment.xlsx". This workbook is modeled upon the PGE_2023_WMP_R0_Section_8A2_Atch01.xlsx workbook that was submitted with the PG&E 2023-2025 Base WMP and the PG&E response to a CalAdvocates Data Request that included the workbook titled WMP-Discovery2023-2025_DR_CalAdvocates_041-Q005Atch01.xlsx. a. Follow the Field Descriptions in the "Instruction" spreadsheet to complete the corresponding cells in the "Primary", "S&S" and "DistTotal" spreadsheets. b. Responses in the "Primary" spreadsheet must be limited to the primary lines found on the corresponding "Circuit Segment Name" listed in Column A. c. Responses in the "S&S" spreadsheet must be limited to the secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. d. Responses in the "DistTotal" spreadsheet must include both the primary, secondary and service lines found on the corresponding "Circuit Segment Name" listed in Column A. e. If any of the data requested in this dataset workbook would be impacted by the Administrative Law Judge Ruling described in Questions 1 and 3, provide a second version of this dataset using a risk-neutral, linear scaling function and using the disaggregated approach to reliability cost calculation recommended in the SPD Evaluation Report.	PG&E is providing the following data in attachment: "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp03Atch01.xlsx," in the worksheet labeled "Primary:" • WDRM v4 fields • Tranches • Decision Trees WMP-Discovery 2026-2028_DR_SPD_004-Q005Supp03 Page 2 • Miles of Expulsion Fuse Replacement • Miles of Surge Arrestor Replacement • Miles of Aerial inspection • Miles of Ground Inspection • Miles of Non-Pole Backlog • Miles of DCD • Miles of Line Sensors • Miles of Pole Backlog • Total Expenditure of Expulsion Fuse Replacement Completed in Year • Total Expenditure of Surge Arrestor Replacement Completed in Year • Total Expenditure of Aerial Inspections Completed in Year •	Eddie Schmitt	4/30/2025	6/27/2025	6/27/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.5.2

266	SPD	004	SPD_004	5(s3)	Yes	SPD_004_QS(s3)	In Section 4.1.2.1 PG&E's model asserts that ( ) The literature on structure loss in wildfire is extensive and lists a number of variables that influence the likelihood of structure loss. These include housing materials, age of neighborhood, density of neighborhood and separation of houses, proximity of vegetation to the structure, enclosed eves and vents, and others. a. How does PG&E's structure loss model incorporate other variables that are implicit to the structures, maintained landscapes, and neighborhoods? b. Please provide the numerical values that went into Figures 9 and 10. c. Figure 10 implies that for TDI=1 that the probability of structure is very small (counts for loss < 0.3 >> loss > 0.3), and that for TDI=5 probability of structure loss is very large (counts for loss > 0.7 >> loss < 0.7). Does this imply that PG&E's model assumes that home survival fraction is primarily dependent on the availability of firefighting resources? If so, what justification (analysis or citations) does it provide for this assertion?	PG&E is providing the following data in attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp03Atch01.xlsx," in the worksheet labeled "Primary:" • WDRM v4 fields • Tranches • Decision Trees • Miles of Expulsion Fuse Replacement • Miles of Surge Arrestor Replacement • Miles of Aerial Inspection • Miles of Ground Inspection • Miles of Non-Pole Backlog • Miles of DCD • Miles of Line Sensors • Miles of Pole Backlog • Total Expenditure of Expulsion Fuse Replacement Completed in Year • Total Expenditure of Surge Arrestor Replacement Completed in Year • Total Expenditure of Aerial Inspections Completed in Year • Total Expenditure of Ground Inspection Completed in Year • Total Expenditure of Down Conductor Detection (DCD) Completed in Year • Total Expenditure of Line Sensors Completed in Year • Present Value Cost of OH Completed in Year • Present Value Cost of UG Completed in Year • Present Value Cost of Line Removal Completed in Year • Present Value Cost of System Hardening Completed in Year • Present Value Cost of Expulsion Fuse Replacement Completed in Year • Present Value Cost of Surge Arrestor Replacement Completed in Year • Present Value Cost of Aerial Inspections Completed in Year • Present Value Cost of Ground Inspections Completed in Year • Present Value Cost of Tree Removal Completed in Year • Present Value Cost of DCD Completed in Year • Present Value Cost of Line Sensors Completed in Year • Present Value Cost of Pole Clearino Completed in Year	Joseph Mitchell	5/5/2025	6/27/2025	6/27/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.4
267	SPD	004	SPD_004	5(s4)	Yes	SPD_004_QS(s4)	In Section 4.1.2.1 PG&E's model asserts that ( ) The literature on structure loss in wildfire is extensive and lists a number of variables that influence the likelihood of structure loss. These include housing materials, age of neighborhood, density of neighborhood and separation of houses, proximity of vegetation to the structure, enclosed eves and vents, and others. a. How does PG&E's structure loss model incorporate other variables that are implicit to the structures, maintained landscapes, and neighborhoods? b. Please provide the numerical values that went into Figures 9 and 10. c. Figure 10 implies that for TDI=1 that the probability of structure is very small (counts for loss < 0.3 >> loss > 0.3), and that for TDI=5 probability of structure loss is very large (counts for loss > 0.7 >> loss < 0.7). Does this imply that PG&E's model assumes that home survival fraction is primarily dependent on the availability of firefighting resources? If so, what justification (analysis or citations) does it provide for this assertion?	PG&E is providing the following data in attachment "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp04Atch01.xlsx," in the worksheet labeled "Primary:" • Risk Reduction Achieved by OH in Year; • Risk Reduction Achieved by UG in Year; • Risk Reduction Achieved by Line Removal in Year; WMP-Discovery 2026-2028 DR_SPD_004-Q005Supp04 Page 2 • Risk Reduction Achieved by System Hardening in Year. Additionally, please note that PG&E has determined that 2025 values in the "Total Expenditure" fields for OH, UG, Line Removal, and System Hardening were inadvertently not represented in thousands. PG&E provides amended values with this response. All financial data is represented in thousands ($000s).	Joseph Mitchell	5/5/2025	7/2/2025	7/2/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.4
268	SPD	004	SPD_004	5(s5)	Yes	SPD_004_QS(s5)	In Section 4.1.2.1 PG&E's model asserts that ( ) The literature on structure loss in wildfire is extensive and lists a number of variables that influence the likelihood of structure loss. These include housing materials, age of neighborhood, density of neighborhood and separation of houses, proximity of vegetation to the structure, enclosed eves and vents, and others. a. How does PG&E's structure loss model incorporate other variables that are implicit to the structures, maintained landscapes, and neighborhoods? b. Please provide the numerical values that went into Figures 9 and 10. c. Figure 10 implies that for TDI=1 that the probability of structure is very small (counts for loss < 0.3 >> loss > 0.3), and that for TDI=5 probability of structure loss is very large (counts for loss > 0.7 >> loss < 0.7). Does this imply that PG&E's model assumes that home survival fraction is primarily dependent on the availability of firefighting resources? If so, what justification (analysis or citations) does it provide for this assertion?	The following response pertains to the information provided in "WMP-Discovery2026-2028_DR_SPD_004-Q005Supp05Atch01.xlsx." For the CBRs provided in the "Primary" tab, Columns SZ – TW, please note: 1. PG&E is using a single escalation factor (consisting of nominal discount and inflation rates) for all costs in the CBR calculation for all projects from 2023 through 2028. Escalating costs to a different base year to align with each of the different project years would require us to build a new tool for each year. Building a new tool for each year would be burdensome given that we expect there would be only a minor difference in the CBR using the single escalation factor compared to using a year specific escalation factor since the CBR is mostly influenced by risk and cost. 2. Most undergrounding system hardening projects take approximately three to four years to complete and include pre-construction, construction and project close out activities. Pre-construction work includes scoping and surveying, design, permitting, materials acquisition and vegetation work. Construction includes both civil and electrical activities such as digging trenches, installing conduit, and pulling cable through the conduit. Project close-out includes paving, restoration, mapping and finalizing project documentation. The costs incurred for undergrounding work do not necessarily correlate with the miles installed. For example, no miles are installed during pre-construction even though costs are incurred for designing, permitting and material acquisition. Therefore, the annual CBRs we are asked to provide in this data request are not necessarily reflective of the work that is occurring. For example, during pre-construction PG&E will incur costs to purchase materials but will not reduce risk because we won't be relocating primary lines underground and the CBR will reflect costs incurred with no benefits achieved even though we are performing work that is necessary for the undergrounding project. 3. PG&E is using the risk values from WDRM v4 as the basis for the CBRs provided in this data response even though certain projects were selected and planned based on earlier versions of the Wildfire Distribution Risk Model. There are often changes to circuit segments from one version of the WDRM to the next. For example, a circuit segment from WDRM v3 may be split into two circuit segments	Joseph Mitchell	5/5/2025	7/15/2025	7/15/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_004.zip	1	No	5	Risk Methodology & Assessment	5.4
269	SPD	008	SPD_008	1	No	SPD_008_Q1	On June 20, 2025, PG&E served a Compliance Filing in response to an April 22, 2025 ALJ ruling in A.24-05-008 requiring PG&E to disaggregate its approach generating a monetized value of electric reliability using the Interruption Cost Estimator (ICE) calculator. In its Compliance Filing, PG&E stated that "PG&E has addressed the ALJ ruling requirement using the ICE 2.0 calculator rather than the ICE 1.0 calculator." PG&E also presented eight workpapers in Appendices A and B. Appendix A included the Excel file named "Appendix A1_PG&E 2027 GRC Risk Values with Electric Reliability Scenarios.xlsx" with a spreadsheet called "PG&E 2027GRC Risk Values". Explain what are the values associated with Column's F and N (i.e. the "ICE 1.0 disaggregated" values) in spreadsheet "PG&E 2027GRC Risk Values" and what approach was used to generate those values. a. Is the approach used to generate the values described as "ICE 1.0 disaggregated" the same as the approach used to generate the values in the RM-RMCBR-14 PG&E 2024 RAMP Risk Values_ICECalcAdj_by_Event (add DUNG0).xlsx workbook that PG&E submitted with its supplemental response to the RAMP-2024_DR_SPD_002 data request on July 31, 2024? i. If not, explain what approach was used to generate the "ICE 1.0 disaggregated" values in PG&E 2027GRC Risk Values. ii. If not, explain why PG&E did not use the approach recommended by the SPD evaluation report as requested in the ALJ Ruling from April 22, 2025. b. List each of the monetized value(s) of electric reliability that PG&E generated using the ICE Calculator that then led to results in Columns E, F, G and H in the "PG&E 2027GRC Risk Values" spreadsheet. This should be presented in $/CMI. i. Explain how PG&E generated each of these values with reference to the offline ICE models used by PG&E.	PG&E objects to this request because it is not related to the WMP proceeding and exceeds the scope of that proceeding. This request would be more appropriately served as non-case discovery or in a different regulatory proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows. "Electric Reliability (ICE 1.0 disaggregated)" values in Column F of sheet "PG&E 2027GRC Risk Values" in file Appendix A1 are the electric reliability risk values calculated using disaggregated approach based on ICE 1.0 results. Specifically, the disaggregated approach used tranche-level values of electric reliability attribute ($/CMI), which were derived from ICE 1.0 $/CMI values for residential and non-residential customers obtained using inputs consistent with $3.33/CMI used in monetizing electric reliability risk in PG&E's 2027 GRC filing. Please see below table for the ICE 1.0 VoS values. Sector ICE 1.0 $/CMI Residential 0.05 Non-Residential 29.17 All 3.33* Notes: $3.33/CMI is used in monetizing electric reliability risk in PG&E's 2027 GRC filing	Edwin Schmitt	06/23/205	7/3/2025	7/3/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_008.zip	0	No			
270	SPD	008	SPD_008	2	No	SPD_008_Q2	Provide copies of the four (or more) offline ICE models that PG&E used to generate the values listed in Question 1b. This should be equivalent to RM-RMCBR-9 Module_1-Estimate_Interruption_Costs_w PGE Input.xlsx that was submitted with the 2024 RAMP or the ICE 2.0-Estimate_Interruption_Costs_2025-04-29.xlsx available from Lawerence Berkeley National Lab by request.1 All formulas must remain in the document so that SPD Staff can review how PG&E arrived at the monetized value of electric reliability. a. Provide a copy of the PG&E data that informed each of the offline models described in Question 2. This should be equivalent to RM-RMCBR-9 PG&E Data for ICE Calculator.xlsx that was submitted with PG&E's 2024 RAMP Application.	PG&E objects to this request because it is not related to the WMP proceeding and exceeds the scope of that proceeding. This request would be more appropriately served as non-case discovery or in a different regulatory proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows. Lawrence Berkeley National Laboratories (LBNL) has established that PG&E is not permitted to share offline ICE 2.0 models outside of the organization. The offline ICE 2.0 model may be requested from LBNL though it is not required to replicate the dollars per customer-minutes-interrupted ($/CMI) values that PG&E generated using ICE 2.0 as there is an online interface available at icecalculator.com. PG&E also offers to meet directly with Safety Policy Division and walk through the offline ICE 2.0 calculator used in support of the ALJ Compliance Filing in A.24-05-008. However, PG&E's $/CMI values may also be generated through the online ICE 2.0 calculator using the inputs provided in Appendix B_ICE10 to ICE20 Input Comparison.xlsx file of the Compliance Filing. With respect to the ICE 1.0 models, 2027 GRC Exhibit (PG&E-2) WP 1-04_Module_1-Estimate_Interruption_Costs_w PGE Input 2025.xlsm was used for both aggregated and disaggregated approach. a. The customer counts and usage per customer used in ICE 1.0 for the 2027 General Rate Case (GRC) filing are based on recorded 2024 customer data, as provided in the February 24, 2025, version of PG&E's 2025 Rates Forecast. With respect to the inputs used for ICE 1.0 model, please see 2027 GRC Exhibit (PG&E-2) WP 1-05_PG&E Data for ICE Calculator 2025.xlsx. For ICE 2.0, customer counts as of May 8, 2025, were sourced from PG&E's internal live customer dataset, while usage per customer figures were drawn from the same 2025 Rates Forecast. The percentages of manufacturing and health care customers were derived from actual recorded consumption data spanning 2022 through 2024. Estimates for the percentage of customers with Backup Generators (BUG) and those Working From Home (WFH) are based on PG&E-specific customer surveys developed and administered by LBNL and Resource Innovations (LBNL's subcontractor) for the ICE 2.0 calculator.	Edwin Schmitt	06/23/205	7/3/2025	7/3/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_008.zip	0	No			

271	SPD	008	SPD_008	3	No	SPD_008_Q3	Recreate the "Tranche-Outcome_Analysis" spreadsheet from RM-RMCBR-14 PG&E 2024 RAMP Risk Values_(CECalcAdj_by_Event (add DUNGO).xlsx for each of the four approaches to electric reliability presented in the "PG&E 2027GRC Risk Values" spreadsheet: a. ICE 1.0 aggregated (Column E) b. ICE 1.0 disaggregated (Column F) c. ICE 2.0 aggregated (Column G) d. ICE 2.0 disaggregated (Column H)	PG&E objects to this request because it is not related to the WMP proceeding and exceeds the scope of that proceeding. This request would be more appropriately served as non-case discovery or in a different regulatory proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows. For the 2027 General Rate Case (GRC) filing, PG&E utilized an overall aggregated dollar-per-Customer Minute Interruption ($/CMI) value calculated using ICE 1.0, which was the most recent version of ICE calculator available at the time of analysis for the 2027 GRC filing. On June 20, to comply with the ALJ ruling, PG&E provided analysis results with disaggregated approach, utilizing the locational difference on composition of customers by sector (i.e., residential vs non-residential) by which $/CMI values are different per ICE 2.0 Calculator. PG&E notes that the previous analysis in the RM-RMCBR-14 PG&E 2024 RAMP Risk Values_(CECalcAdj_by_Event (add DUNGO).xlsx referred in this DR was performed as a response to the DR (SPD-PGE-2024RAMP_DR_002) by 1) deriving blended $/CMI by four geographic tier (HFTD Tier 2, HFTD Tier 3, Non-HFTD EPSS Capable, Non-HFTD Non-EPSS Capable) based on the mix of customers and $/CMI by customer sector, and then 2) taking the sum of the four blended $/CMI, weighted by the allocation factor of a tranche-outcome CMI to the geographic tier. The attachment WMP-Discovery2026-2028_DR_SPD_008-Q003Atch01.xlsx includes the requested analysis in the "Tranche-Outcome_Analysis" spreadsheet for each of the four approaches to electric reliability whose results were also presented in "PG&E 2027GRC Risk Values" attachment in the June 20 filing. The attachment WMPDiscovery2026-2028_DR_SPD_008-Q003Atch01.xlsx includes the requested analysis in the "Tranche-Outcome_Analysis" spreadsheet for each of the four approaches to electric reliability whose results are presented in "PG&E 2027GRC Risk Values" attachment in the June 20 filing. Specifically, a. ICE 1.0 aggregated is in Column F of "Tranche-Outcome_Analysis (ICE1)' tab b. ICE 1.0 disaggregated is in Column J of "Tranche-Outcome_Analysis (ICE1)' tab c. ICE 2.0 aggregated is in Column F of "Tranche-Outcome_Analysis (ICE2)' tab d. ICE 2.0 disaggregated is in Column J of "Tranche-Outcome_Analysis (ICE2)' tab	Edwin Schmitt	06/23/205	7/3/2025	7/3/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_008.zip	1	No			
272	SPD	008	SPD_008	4	No	SPD_008_Q4	In a supplemental response to SPD-PGE-WMP2026-004 Question 4, PG&E stated that it has responded to the data request by "applying the ICE 2.0 disaggregated values ($0.08/CMI for residential, $23.11/CMI for nonresidential)". In its Compliance Filing in its 2027 GRC, PG&E stated "PG&E continues to stand by our 2027 GRC risk analysis using a system-wide, aggregated electric reliability value, developed based on the best judgment and analysis available at the time of GRC filing." a. Confirm that by "aggregated electric reliability value" PG&E is referring to the "ICE 1.0 aggregated" values that were submitted with both the WMP and the initially 2027 GRC Application. b. Is PG&E considering using the ICE 2.0 calculator in a future WMP update? Explain. c. Is PG&E considering using the ICE 2.0 calculator in a future EUP submission to Energy Safety? Explain. d. If the answer to 4a. is yes and either 4b. or 4c. is yes, explain why PG&E stands by its "aggregated electric reliability value" using ICE 1.0 in its 2027 GRC filing. i. Is PG&E concerned that standing behind one value in the 2027 GRC filing but standing behind another value in a future WMP update or future EUP submission would generate confusion? Explain.	PG&E objects to this request because it is not related to the WMP proceeding and exceeds the scope of that proceeding. This request would be more appropriately served as non-case discovery or in a different regulatory proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows. a. Yes, "aggregated electric reliability value" refers to the "ICE 1.0 aggregated" values that were submitted with both the WMP and the initially 2027 GRC Application. b. PG&E is inclined to use the ICE 2.0 or more recent ICE calculator in updates to the WMP filing to benefit from the significant improvement in data and analysis employed by ICE 2.0 compared with ICE 1.0 calculator, and to comply with the Risk-Based Decision-Making Framework Rulemaking (R.20-07-013) (ROF OIR)1. c. PG&E intends to incorporate a disaggregated ICE 2.0 methodology for the forthcoming EUP filing. As indicated in EUP_SPD-PGE-SB884-018_DRCPUC_D001_REM.pdf and EUP_SPD-PGE-SB884-017.pdf, PG&E is in the final stages of developing its Wildfire Benefit Cost Analysis (WBCA) too l— where this methodology will be implemented—and can share more information in July. d. Since the initial inception and first RAMP filings, PG&E, in partnership with the CPUC, the other IOUs, and Intervening Parties, has endeavored to constantly drive improvement in the Risk Framework. PG&E's 2027 GRC filing is based on available analysis and data that could be reasonably included. Electric reliability analysis is therefore based on ICE 1.0, and not ICE 2.0 that only became available a few weeks prior to the filing deadline. Models, data, and risk analysis are always subject to changes based on newly available information, and the GRC cannot be constantly updated. For example, further updates to ICE 2.0 are expected in 2025. ICE 2.0 currently does not consider PG&E (and other CA IOU) customer survey data. Thus, when LBNL releases updates to ICE 2.0, the values will be different from the results produced now. Regarding the disaggregated approach ordered by the ruling, as explained in PG&E's June 20 compliance filing, that approach requires further consideration in the Rulemaking proceeding. The disaggregated approach raises numerous issues, including the potential consequence of treating customers differently based on economic status, location, and other factors. For example, another method of performing the analysis assigns decreased priority for	Edwin Schmitt	6/23/2025	7/3/2025	7/3/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_008.zip	0	No			
273	SPD	009	SPD_009	1	No	SPD_009_Q1	In PG&E's third supplemental response to Question 5 of SPD-PGE-WMP2026-004, PG&E stated the following: With regard to the "Miles of" fields provided with this response, please note that, consistent with PG&E's prior responses, PG&E is providing units, rather than miles. Further, please note that there are units associated with circuit segments that are not present in the requested list of circuit segments, therefore that data is not included in this response. a. Explain why circuit segments that include units of a mitigation presented in the 2026-2028 Base WMP are not included in the requested list of circuit segments. b. Provide an updated version of WMP-Discovery2026-2028_DR_SPD_004-Q005Supp03Atch01.xlsx or any subsequent version of this dataset that includes all of the circuit segments referenced in Question 1a.	a. Fine circuit segments in the provided template are from WiDRM v4. There are circuit segments that include units of mitigation in the 2026-2028 Base WMP that are only in WDRM versions preceding v4. As stated in Supplemental 01 response to Question 5 of SPD-PGE-WMP2026-004 (May 30, 2025), PG&E only reported units for those circuit segments in the provided template. The information reported in the provided template may not fully represent System Hardening and Rebuild work in its entirety because the provided circuit segment list is based on WDRM v4. There are miles and costs associated to circuit segments that are not present in the provided template, therefore that data is not included in this response. b. Circuit segments that were not in the provided template but have forecasted units of mitigation in the 2026-2028 Base WMP are listed below in Table 1. This table also shows which of the preceding WDRM versions each of these circuit segments are part of, and that they are not included in v4. Table 1: 2026-2028 Base WMP Circuit Segments not in WDRM v4 Circuit Segment In WDRM v2 in WDRM v3 In WDRM v4 CURTIS 170356972 Yes Yes No MARIPOSA 210135244 Yes No No UPPER LAKE 11011276 Yes Yes No DUNBAR 1103534 Yes No No PARADISE 110636042 Yes	Edwin Schmitt	7/3/2025	7/10/2025	7/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_009.zip	1	No	Risk Methodology & Assessment	5.4
274	SPD	009	SPD_009	2	No	SPD_009_Q2	PG&E's third supplemental response to Question 5 of SPD-PGE-WMP2026-004 included the dataset labeled WMP-Discovery2026-2028_DR_SPD_004-Q005Supp03Atch01.xlsx. In the "Primary" spreadsheet under the WDRM v.4 portion of the dataset all of the "Post-Mitigated" fields (Columns AB-AF) have now been given N/A or "See written response" values. a. Explain why PG&E has included an N/A for some circuit segments. b. Explain why PG&E has included "See written response" for some circuit segments. c. Explain why PG&E's third supplemental response to Question 5 of SPD-PGE-WMP2026-004 did not inform SPD that it would fill in these fields with N/A or "See written response". d. Explain why PG&E is able to present Wildfire Risk Reduction for Undergrounding and Overhead Hardening according to WDRM v.4, v. 3 and v.2 in response to Question 1 of TURN-PG&E-3, but PG&E is unable to provide the "Post-Mitigated" fields from Question 5 of SPD-PGE-WMP2026-004.1 i. PG&E's original response to Question of SPD-PGE-WMP2026-004 stated that WDRM v.4 "cannot be used to quantify mitigation effectiveness". Explain how PG&E used WDRM v.4, v.3 and v.2 to calculate Wildfire Risk Reduction in response to Question 1 of TURN-PG&E-3. ii. Provide the datasets and workpapers used to calculate the fields "Est. Wildfire Risk Reduction (v4)" "Est. Wildfire Risk Reduction (V3)" and "Est. Wildfire Risk Reduction (V2)" in the workpapers titled WMP-Discovery2026-2028_DR_TURN_003-Q001Atch02CONF.xlsx and WMP-Discovery2026-2028_DR_TURN_003-Q001Atch03CONF.xlsx. Include all excel formulas within the dataset and workpapers to ensure Staff can follow how PG&E arrived at the final calculation for these three fields for each circuit segment. e. In response to Question 1g. of SPD- PGE-WMP2026-SPD-006 about the "Post-Mitigated" fields, PG&E stated the following: "PG&E believes we can provide the requested values through use of the preliminary version of the WBCA tool, dependent on completion of mapping of mitigation activities to the given list of circuit segments." Explain when PG&E will provide SPD with the data for the "Post-Mitigated" fields using a preliminary version of the WBCA tool. i. If PG&E has determined that it cannot provide SPD with the data for the "Post-Mitigated" fields using a preliminary version of the WBCA tool, explain why it cannot. ii. If PG&E has determined that it cannot provide SPD with the data for the "Post-Mitigated" fields using a preliminary version of the WBCA tool, explain when PG&E made this determination. iii. If PG&E has determined that it cannot provide SPD with the data for the "Post-Mitigated" fields using a preliminary version of the WBCA tool, then as was already requested in Question 1.g.ii. of SPD- PGE-WMP2026-SPD-006 describe a solution for providing SPD with the "Post-Mitigated" fields for each circuit segment.	a. For these columns, "N/A" and "See written response" are meant to convey the same information and should be considered synonymous. As described in PG&E's third supplemental response to Question 5 of SPD-PGE-WMP2026-004 (pages 11-12), the reason that these fields are impossible to report as requested is because "WDRM v4 model was developed as a predictive model and cannot be used to quantify mitigation effectiveness". b. See response to subpart a. c. PG&E's third supplemental response to Question 5 of SPD-PGE-WMP2026-004 intended to describe the values in these fields in the table on pages 11-12. d. Please see the following responses for clarification on Wildfire Risk Reduction and the "Post-Mitigated" fields: i. PG&E did not use WDRM v2, v3, or v4 to calculate Wildfire Risk Reductions in response to Question 1 of TURN-PG&E-3. As previously described in PG&E's response to WMP-Discovery2026-2028_DR_SPD_007-Q001, "The primary objective of the WDRM v4 is to predict wildfire risk associated with the distribution system. The WDRM does not calculate mitigation effectiveness. Further, the WDRM vl is a set of machine learning (ML) models, and it is not appropriate to extract causal information from the predictive models. The models predict future values based on historical event data." The same is true for WDRM v2 and WDRM v3. ii. Calculations were completed in an internal code repository (Risk Reduction Model) and cannot be provided in excel format. e. The ability to calculate post-mitigated values in the WBCA tool is not yet finalized This capability is expected to be available by August 4th. However, the tool is being developed to allow for detailed scoping of a single project at a time, rather than bulk entry of thousands of historic sub-projects. To provide the requested post-mitigated values for these historic projects would require additional weeks of manual entry. i. PG&E has not determined that this analysis cannot be done, but that it is unduly burdensome. The tool is being developed to allow for detailed scoping of a single project at a time, rather than bulk entry of thousands of historic sub-projects. To provide the requested post-mitigated values for these historic projects would require weeks of manual entry. ii. PG&E has not determined that this analysis cannot be done, but that it is unduly burdensome. With the data currently available, PG&E is able to perform individual circuit segment analysis. iii. See response to subparts ei and ei. PG&E welcomes a meeting with SPD staff to discuss this issue in greater detail and to provide information in a timely manner to SPD.	Edwin Schmitt	7/3/2025	7/10/2025	7/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_009.zip		No	Risk Methodology & Assessment	5.4
275	SPD	009	SPD_009	3	No	SPD_009_Q3	In PG&E's first supplemental response to Question 5 of SPD-PGE-WMP2026-004 it included a table of forecasted 2026-2028 costs for system hardening mitigations. PG&E also stated that comparing the reported expenditures and the reported miles will not yield an accurate unit cost because a project's costs may be spread across multiple years. a. Explain how PG&E estimated the forecasted 2026-2028 costs for the three system hardening mitigations. b. Provide all workpapers PG&E used to estimate the forecasted 2026-2028 costs for the three system hardening mitigations c. Provide the unit cost for each of the three system hardening mitigations that PG&E used to estimate this forecast. d. Provide all workpapers that PG&E uses to generate a unit cost for each of the three system hardening mitigations that PG&E used to estimate this forecast. i. Provide all historical datasets used to estimate the unit cost of each of the three system hardening mitigations. e. In its response to Question 4a. of SPD-PGE-WMP2026-006, PG&E provided SPD with a list of cost adders and constraints and their associated amounts.2 In response to Question 4b., PG&E stated: "PG&E's project management team established these estimated values based on a review of historical project costs, which are captured and maintained upon project completion." Provide the most recent dataset(s) of historical data that PG&E used to generate the values for each cost adder or constraint listed in WMP-Discovery2026-2028_DR_SPD_006-Q004Atch01CONF.xlsx. i. All formulas should be kept within the dataset so that staff can trace how PG&E arrived at the final values for each cost adder or constraint.	a. Forecasted capital costs are a function of forecasted miles are estimated unit costs. The forecasted miles for a given mitigation type and given year are multiplied by the estimated unit cost for that same mitigation type and year (see response to subpart b for an example). For example, in "WMP-Discovery2026- 2028_DR_SPD_009-Q003Atch01.xlsx" PG&E planned to complete 214 miles of undergrounding (Cell D4) at the unit cost of $3.26 million/mile (Cell D11) for the total estimated cost of $697 million (Cell D17): 214 miles x $3.26 million/mile = $697 million total estimated cost. The capital costs for a system hardening subproject (overhead hardening, undergrounding, and line removal) are incurred over its full lifecycle (e.g., approximately three to four years for undergrounding). Therefore, the costs associated to a single subproject are spread across multiple years as it progresses through preconstruction, construction, and post-construction. This is illustrated in the Multi-Year Capital Cost section of "WMP-Discovery2026- 2028_DR_SPD_009-Q003Atch01.xlsx" (C26:I46). b. Please see attachment "WMP-Discovery2026-2028_DR_SPD_009-Q003Atch01.xlsx": • Miles for each mitigation type is provided by year in section A (C3:I8) • Unit cost for each mitigation type is provided by year in section B (C10:I14) • Annual Capital Cost for each mitigation type is calculated by year in section AxB (C16:I21) c. Please see attachment "WMP-Discovery2026-2028_DR_SPD_009-Q003Atch01.xlsx": • Unit cost for each mitigation type is provided by year in section B (C10:I14) d. Worksheet 'Subpart A and B' of attachment "WMP-Discovery2026-2028_DR_SPD_009-Q003Atch02.xlsx"2 shows the historic average unit costs for undergrounding (2018-2024) and overhead hardening (2018-2024). These historic unit costs are the basis for the 2026-2028 WMP unit costs we used to generate the forecast costs for the undergrounding and overhead hardening unit costs. The 2024 unit cost for undergrounding was $3.2 million/mile and is comparable to the $3.26 million/mile WMP unit cost. The details of Undergrounding subprojects completed from 2018 to 2024 can be found on worksheet 'Subpart C' of the attachment. The 2024 unit cost for overhead hardening was $0.9 million/mile and is comparable to the $1.09 million/mile WMP unit cost. The details of Overhead Hardening subprojects completed from 2018 to 2024 can be found on worksheet 'Subpart D' of the attachment. For line removal, PG&E uses estimates for line removal mileage per project and cost per remote grid informed by project costs from 2021-2024. (see PG&E's 2027 GRC Exhibit PG&E-4, Chapter 7, WP 7-14 and WP 7-11, line 4) The unit costs for Butte undergrounding are based on the projects planned for 2026 and 2027 as opposed to historic unit costs. PG&E uses project specific forecasts for Butte undergrounding work because there are very	Edwin Schmitt	7/3/2025	7/10/2025	7/10/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-SPD_009.zip	2	No	5	Risk Methodology & Assessment	5.5.2

276	SPD	009	SPD_009	4	No	SPD_009_Q4	In response to Question 23 of SPD-PGE-WMP2026-004, PG&E stated that the Decision-Trees in Figures PG&E-8.2.1-1, PG&E-8.2.1-2, and PG&E-8.2.1-3 in the 2026-2028 Base WMP are in fact one single decision-tree connected together and that there are five results from the decision tree: (1) do not implement system hardening; (2) implement a 100% overhead hardening solution; (3) implement a 100% undergrounding solution; (4) implement a hybrid hardening solution where portions of a line are undergrounded and other portions are overhead hardened; and (5) implement a line removal with remote grid solution. a. Provide an example circuit segment from each of the five results. For each of the five circuit segments, provide a step-by-step explanation of each decision that PG&E needed to make and each analysis PG&E needed to conduct in order to arrive at the final result for said circuit segment. i. At each step in the explanation of the five circuit segments, provide the level of accuracy of the cost estimate at that point in the process. PG&E should reference the Association for the Advancement of Cost Engineering (AACE) scale for understanding the accuracy of the cost estimate at a given point within the decision tree. b. Explain PG&E's rational for allowing the decision-tree to include result #1, which is to not implement system hardening. c. For result #4, explain what is meant by "portions of a line". i. Explain how the "portions of a line" are determined by PG&E. d. Is there another decision tree for determining whether the line removal with remote grid solution would be an economical solution? i. If so, provide that decision tree and a narrative of how it operates. ii. If not, explain why not and explain how PG&E determines that line removal with remote grid solution is an economical solution.		Edwin Schmitt	7/3/2025	7/21/2025				No	5	Risk Methodology & Assessment	5.2.2.2
277	OEIS	016	OEIS_016		No	OEIS_016_Q	Q01. Regarding unplanned distribution system outages from Jan 1, 2023, to Dec 31, 2024 a. Provide a list and description of each distinct cause code attributed to an unplanned distribution outage1 from Jan 1, 2023, to Dec 31, 2024. b. Provide the average number of distribution poles in PG&E's High, Severe, and Extreme plat maps (as defined in section 8.1.3 of its 2023-2025 WMP) from Jan 1, 2023, to Dec 31, 2024. c. Provide the total number of unplanned distribution outages in PG&E's High, Severe, and Extreme plat maps from Jan 1, 2023, to Dec 31, 2024. d. Provide the number of unplanned distribution outages in PG&E's High, Severe, and Extreme plat maps caused by vegetation contact from Jan 1, 2023, to Dec 31, 2024. i. As a subset, provide the number of unplanned distribution outages caused by vegetation contact during major event days. e. Provide the number of unplanned distribution outages in PG&E's High, Severe, and Extreme plat maps caused by equipment failure from Jan 1, 2023, to Dec 31, 2024. i. As a subset, provide the number of unplanned distribution outages caused by equipment failure during major event days. f. In an Excel file attachment(s), provide the data PG&E used to determine the number of outages in tabular form	a. Please see attachment "WMP-Discovery2026-2028_DR_OEIS_016-Q001Atch01.xlsx" for the requested information. b. Pursuant to our correspondence, we are working on providing the requested information and will respond to this subpart no later than July 18, 2025. c. Pursuant to our correspondence, we are working on providing the requested information and will respond to this subpart no later than July 18, 2025. d. Pursuant to our correspondence, we are working on providing the requested information and will respond to this subpart no later than July 18, 2025. i. Please see Worksheet "SO Counts by Basic Cause" in attachment "WMPDiscovery2026-2028_DR_OEIS_016-Q001Atch01.xlsx" for the number of unplanned distribution outages caused by vegetation contact during major event days. e. Pursuant to our correspondence, we are working on providing the requested information and will respond to this subpart no later than July 18, 2025. i. Please see Worksheet "SO Counts by Basic Cause" in attachment "WMPDiscovery2026-2028_DR_OEIS_016-Q001Atch01.xlsx." for the number of unplanned distribution outages caused by equipment failure during major event days. f. Please see attachment "WMP-Discovery2026-2028_DR_OEIS_016-Q001Atch01.xlsx" for the requested information.	Nathan Poon	7/8/2025	7/11/2025	7/11/2025	https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/2026-2028-OEIS_016.zip	0	No	8		8.1.3
278	OEIS	017	OEIS_017	1	No	OEIS_017_Q1	a.Complete the table below regarding PG&E's pole clearing work in State Resource Areas (SRAs) located within the HFTD from 2022 to 2024. b.Complete the table below regarding PG&E's pole clearing work in Local Resource Areas (LRAs) located within the HFTD from 2022 to 2024. c.Complete the table below regarding PG&E's pole clearing work in Federal Responsibility Areas (FRAs) located within the HFTD from 2022 to 2024.		Nathan Poon	7/15/2025	7/18/2025								