Link to Discovery Responses: https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan-discovery-data-requests.page																	
Count	**Party Name**	**Data Set**	**Data Request**	**Question No.**	**Question ID**	**Question Text**	**Responses**	**Requestor**	**Date Rec'd**	**Final Due Date**	**Date Sent**	**Links**	**Number of Atchs**	**NDA Required**	**WMP Section**	**Category**	**Subcategory**
1	CalPA	Set WMP-07	CalPA_Set WMP-07	1	CalPA_Set WMP-07_Q1	In the review of PG&E's WDRM v3 by Energy & Environmental Economics, Inc. ("E3 Review"), the authors note: "There were also several refreshes to PG&E asset data, now current to 2022-01- 01, and inclusion of updated internally sourced meteorology datasets." 3 a) Please confirm that no asset data collected after January 1, 2022 was used in the WDRM v3. b) If asset data collected after January 1, 2022 was used in PG&E's WDRM v3, please specify the date(s) on which any such data was collected. c) Please confirm that "asset data" in parts a) and b) is geospatial (GIS) data from the operational system of record. If not, please state the origin of the asset data.	a) All distribution asset data utilized in the Wildfire Distribution Risk Model (WDRM) v3 were extracted from PG&E's EDGIS system on January 1, 2022, with the exception of the transformer data which was extracted from EDGIS on February 2, 2022. b) See answer to part a. c) See answer to part a.	Joshua Borkowski	3/27/2023	3/30/2023	3/30/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_007.zip	0	N/A	6.2	Risk Methodology and Assessment	Risk Analysis Framework
2	CalPA	Set WMP-07	CalPA_Set WMP-07	2	CalPA_Set WMP-07_Q2	Page 15 of the E3 Review includes a list of components included in the WDRM v3. 4 a) Please confirm the date that the WDRM v3 was finalized. b) If the final list of components is different than what is listed in the E3 review, please provide an updated and accurate list of components that are used as inputs in PG&E's WDRM v3. c) For any inputs included in your response to Question 2(b) that do not appear on Page 15 of the E3 review, please provide the latest date on which each input was updated. d) If any dates given in response to Question 2(c) are different from those given in question 1(b), please explain why they are different.	a) The Wildfire Distribution Risk Model (WDRM) v3 was finalized by approval at the Wildfire Risk Governance Steering Committee (WRGSC) on April 13, 2022. b) The 8 asset groups listed on page 15 of the E3 Review are included in the WDRM v3 but are grouped into the sub-models listed in Figure 5 Sub-model Predictive Performance Measures on page 21 of the E3 Review document. Not applicable, please see response to 2b. d) Not applicable, please see response to 2c.	Joshua Borkowski	3/27/2023	3/30/2023	3/30/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_007.zip	0	N/A	6.2	Risk Methodology and Assessment	Risk Analysis Framework
3	CalPA	Set WMP-07	CalPA_Set WMP-07	3	CalPA_Set WMP-07_Q3	a) Please confirm the date that the WRDM v4 was finalized. If it has not been finalized, please provide an estimateddate on which it will be finalized. b) Please provide a current list of components that are used as inputs in v4 of the WDRM model. c) Please state the date of PG&E asset data used in v4 of the WDRM model. If there are multiple dates, include the most recent date for any asset data used in the model, and any date(s) on which the data used in the model was collected. d) Please confirm that "asset data" in part c) is geospatial (GIS) data from the operational system of record. If not, please state the origin(s) of the asset data.	a) The Wildfire Distribution Risk Model (WDRM) v4 has not been finalized. Model review and approval is scheduled for Q2 2023. b) The list of equipment components in the WDRM v4 has not been finalized at this time. c) The asset data for the WDRM v4 was extracted from PG&E's EDGIS on January 1, 2023. d) Please see the response to 3c.	Joshua Borkowski	3/27/2023	3/30/2023	3/30/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_007.zip	0	N/A	6.2	Risk Methodology and Assessment	Risk Analysis Framework
4	MGRA	Data Request No. 1	MGRA_Data Request No. 1	1	MGRA_Data Request No. 1_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 the Q4 2022 OEIS GIS Data Standard Submission. PG&E is also providing non-confidential data from the Support Structure feature class. PG&E is not providing data for the Fuse feature class as this data is confidential critical energy infrastructure information (CEII).	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	1	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
4	MGRA	Data Request No. 1	MGRA_Data Request No. 1	1 SUPP	MGRA_Data Request No. 1_Q1 SUPP	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 the Q4 2022 OEIS GIS Data Standard Submission. PG&E is also providing non-confidential data from the Support Structure feature class. PG&E is not providing data for the Fuse feature class as this data is confidential critical energy infrastructure information (CEII).	Joseph Mitchell	3/29/2023	4/13/2023			4	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
5	MGRA	Data Request No. 1	MGRA_Data Request No. 1	2	MGRA_Data Request No. 1_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. PG&E is not providing the Transmission Line feature class because it is confidential CEII.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
5	MGRA	Data Request No. 1	MGRA_Data Request No. 1	2 SUPP	MGRA_Data Request No. 1_Q2 SUPP	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. PG&E is not providing the Transmission Line feature class because it is confidential CEII.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
6	MGRA	Data Request No. 1	MGRA_Data Request No. 1	3	MGRA_Data Request No. 1_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 including photos	In response to this request, PG&E is unable to provide PSPS Event data, PSPS Event Damages data, and PSPS Damage photos since there were no PSPS Events that took place throughout 2022	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
6	MGRA	Data Request No. 1	MGRA_Data Request No. 1	3 SUPP	MGRA_Data Request No. 1_Q3 SUPP	Provide PSPS Event data. Include Event Log, Event Line, Event Polygon data. Please exclude customer meter data. Provide all PSPS Event Asset Damage data including photos	In response to this request, PG&E is unable to provide PSPS Event data, PSPS Event Damages data, and PSPS Damage photos since there were no PSPS Events that took place throughout 2022	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
7	MGRA	Data Request No. 1	MGRA_Data Request No. 1	4	MGRA_Data Request No. 1_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	In response to this request, PG&E is providing non-confidential data for the Wire Down, Ignition, Transmission Unplanned Outage, Distribution Unplanned Outage, Distribution Vegetation Caused Unplanned Outage, and Risk Event Asset Log feature classes and related table.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
7	MGRA	Data Request No. 1	MGRA_Data Request No. 1	4 SUPP	MGRA_Data Request No. 1_Q4 SUPP	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	In response to this request, PG&E is providing non-confidential data for the Wire Down, Ignition, Transmission Unplanned Outage, Distribution Unplanned Outage, Distribution Vegetation Caused Unplanned Outage, and Risk Event Asset Log feature classes and related table.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
8	MGRA	Data Request No. 1	MGRA_Data Request No. 1	5	MGRA_Data Request No. 1_Q5	Provide photo data for Risk Events.	PG&E does not have any non-confidential or non-privileged data to provide in response to this request. The photos provided in this feature class may be subject to attorney client privilege or the work product doctrine and may be subject to an ongoing investigation. Additionally, PG&E risk event photos are confidential CEII because they reveal physical facility and critical infrastructure locations.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation

8	MGRA	Data Request No. 1	MGRA_Data Request No. 1	5 SUPP	MGRA_Data Request No. 1_Q5 SUPP	Provide photo data for Risk Events.	PG&E does not have any non-confidential or non-privileged data to provide in response to this request. The photos provided in this feature class may be subject to attorney client privilege or the work product doctrine and may be subject to an ongoing investigation. Additionally, PG&E risk event photos are confidential CEII because they reveal physical facility and critical infrastructure locations.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
9	MGRA	Data Request No. 1	MGRA_Data Request No. 1	6	MGRA_Data Request No. 1_Q6	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 System Hardening, Butte County Rebuild, and 10K Undergrounding WMP initiative programs that were included in the Grid Hardening Log, Grid Hardening Point, and Grid Hardening Line feature classes and related table. Additional initiative projects reported in these feature classes includes data on where PG&E's fuse replacements, switch replacements, surge arrester replacements, and SCADA enabled work has been performed, and where future work is planned to take place. These are confidential CEII because they reveal physical facility and critical infrastructure locations. As such, have been removed from the response.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
9	MGRA	Data Request No. 1	MGRA_Data Request No. 1	6 SUPP	MGRA_Data Request No. 1_Q6 SUPP	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 System Hardening, Butte County Rebuild, and 10K Undergrounding WMP initiative programs that were included in the Grid Hardening Log, Grid Hardening Point, and Grid Hardening Line feature classes and related table. Additional initiative projects reported in these feature classes includes data on where PG&E's fuse replacements, switch replacements, surge arrester replacements, and SCADA enabled work has been performed, and where future work is planned to take place. These are confidential CEII because they reveal physical facility and critical infrastructure locations. As such, have been removed from the response.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
10	MGRA	Data Request No. 1	MGRA_Data Request No. 1	7	MGRA_Data Request No. 1_Q7	Under Initiatives, please provide Other Initiative data for point, line, polygon features and the Other Initiative Log.	In response to this request, PG&E is providing WMP initiative program data for the Weather Station Installation and Optimization and Camera Installation that were included in the Other Initiative Log and Other Initiative Point related table and feature class. Additional WMP initiative projects reported in this feature class and related table includes data on where PG&E's Line Sensor Installations, Distribution Fault Anticipation, EPSS Reliability Improvements and Early Fault Detection Sensors work have been performed, and where future work is planned to take place. These items are confidential CEII because they reveal physical facility and critical infrastructure locations.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
10	MGRA	Data Request No. 1	MGRA_Data Request No. 1	7 SUPP	MGRA_Data Request No. 1_Q7 SUPP	Under Initiatives, please provide Other Initiative data for point, line, polygon features and the Other Initiative Log.	In response to this request, PG&E is providing WMP initiative program data for the Weather Station Installation and Optimization and Camera Installation that were included in the Other Initiative Log and Other Initiative Point related table and feature class. Additional WMP initiative projects reported in this feature class and related table includes data on where PG&E's Line Sensor Installations, Distribution Fault Anticipation, EPSS Reliability Improvements and Early Fault Detection Sensors work have been performed, and where future work is planned to take place. These items are confidential CEII because they reveal physical facility and critical infrastructure locations.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
11	MGRA	Data Request No. 1	MGRA_Data Request No. 1	8	MGRA_Data Request No. 1_Q8	Under Other Required Data, please provide Red Flag Warning Day polygon data.	PG&E is providing the Red Flag Warning Day polygon data, as requested by MGRA.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
11	MGRA	Data Request No. 1	MGRA_Data Request No. 1	8 SUPP	MGRA_Data Request No. 1_Q8 SUPP	Under Other Required Data, please provide Red Flag Warning Day polygon data.	PG&E is providing the Red Flag Warning Day polygon data, as requested by MGRA.	Joseph Mitchell	3/29/2023	4/13/2023			0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
12	MGRA	Data Request No. 1	MGRA_Data Request No. 1	9	MGRA_Data Request No. 1_Q9	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 the 2023 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 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.	Joseph Mitchell	3/29/2023	4/10/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/MGRA_001.zip	0	N/A	6.4	Risk Methodology and Assessment	Risk Analysis Results and Presentation
13	CalPA	Set WMP-08	CalPA_Set WMP-08	1	CalPA_Set WMP-08_Q1	PG&E's WMP states: The EVM Program concluded at the end of 2022. PG&E will continue to strengthen our other existing VM programs. PG&E is transitioning the maintenance of enhanced clearances that were achieved in EVM to Routine VM patrols. We established routine maintenance requirements for electric distribution circuits where EVM scope clearances have been performed (in HFTD designated areas) and passed by work verification.4 a) Please describe how PG&E intends to strengthen its other existing VM programs as stated above. b) Does PG&E intend to achieve 'enhanced clearances' in areas where they have not already been achieved through EVM, or is PG&E only intending to maintain existing enhanced clearances? c) If PG&E will pursue the achievement of enhanced clearances in new locations, please provide PG&E's strategy and methodology for the following: i. Deciding which circuits and/or locations need enhanced clearances ii. Deciding which trees to trim in a given project location iii. Deciding the desired clearance distances iv. Setting the schedule and sequence of enhanced clearance projects d) If PG&E only intends to maintain existing enhanced clearances, please explain why.	a) 1) PG&E is extending the minimum clearance recommendations of 12 feet in HFTD (per G.O. 95 Rule 35, Appendix E) to 12 feet within HFRA. 2) There is an anticipated increase of tree removals vs trims as it is the first course of action recommended at time of listing per the Distribution Vegetation Inspection Procedure (DRIP). Funding has been provided to account for increased removals. 3) There are tighter controls through reports and monitoring of work completion timelines. b) PG&E will maintain clearances where EVM work occurred. PG&E will also be prescribing a minimum radial clearance of 12 feet throughout the system within HFTD and HFRA. Two new programs, Vegetation Management for Operational Mitigation (VMOM) and Focused Tree Inspection, are likely to result in individual trees that warrant enhanced clearance where EVM was not implemented. These programs inform clearances based on available outage data and trends, as well as site and tree specific conditions. While not called out as a uniform scope, clearances in portions of these targeted circuit segments may have similarities to EVM. c) 1) Adopting the recommendation of 12 feet minimum clearance (in HFTD/HFRA), at time of trim 2) Deciding which locations need enhanced clearance through VMOM execution and FTI Pilots. i. Based on specific AOC outage analysis of species and failure types when available. ii. Based on analysis of outage data and trends by AOC. Additionally, any tree which is within MDR, will be within the MDR before next work completion cycle or is showing signs of imminent failure before next work completion cycle. iii. Minimum of 12 feet of clearance or enough clearance to mitigate potential impacts to facilities if tree (whole or portion of) failure were to occur. iv. PG&E prioritizes enhanced clearance projects according to the Wildfire Distribution Risk Model (WDRM) and attempts to complete work in order of highest to lowest risk whenever possible, however, operational factors including but not limited to access issues due to snow or weather, environmental limited operating periods, and agency restrictions among others may lead to a lower ranked project being completed ahead of a higher ranked project.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.6	Vegetation Management Inspections	Discontinued Programs

14	CalPA	Set WMP-08	CalPA_Set WMP-08	2	CalPA_Set WMP-08_Q2	Regarding the new "Tree Removal Inventory Program" described in section 8.2.2.2.4 of PG&E's WMP, PG&E states: This is a new transitional program for 2023 stemming from the conclusion of the EVM program. This program is intended to work down trees previously identified. PG&E estimates that our EVM inventory included more than 300,000 trees at the end of 2022. Under the Tree Removal Inventory program, we remove or re-inspect trees identified in the EVM program. Based on this on-going re-inspection and evaluation work, we will develop annual risk-ranked work plans and mitigate the highest risk-ranked circuit segments or CPZs first. We plan to address all trees in the inventory in a multi-year program.5 a) Please explain what is meant by the term "transitional" in the first sentence. b) Does PG&E intend to identify new trees for the sort of work identified in this inventory? c) If the answer to part (b) is yes, please provide PG&E's methodology and strategy for doing so. d) If the answer to part (b) is no, please explain why. e) If the answer to part (b) is no, please explain how PG&E intends to achieve comparable risk reduction outcomes to those previously provided by its EVM program. f) What is the nature of the abovementioned "on-going re-inspection and evaluation work"? g) Please state the frequency of the "on-going reinspection and evaluation work". h) How many years will the abovementioned "multi-year program" last? i) After the "multi-year program" ends, will PG&E cease to have a tree inventory? j) If the answer to part (i) is yes, please explain how PG&E intends to address vegetation in high-risk areas going forward. k) If the answer to part (i) is no, please explain how the tree inventory will be maintained and used going forward. l) When it is stated that "PG&E estimates that our EVM inventory included more than 300,000 trees at the end of 2022," please explain why this number is an estimate rather than a precise number.	a) For this program the use of 'Transitional' represents the program transition from EVM to our new Tree Inventory Program, which will focus on working down the risk associated with the remaining 385K. These units were identified under EVM guidelines and will be over a period of time based on resolution of constraints or other factors that hindered completion of work. b) Yes, but not under the Tree Removal Inventory Program, which is focused on removing risk from previously listed trees with a removal prescription as part of the EVM program. Two new programs, Vegetation for Operational Mitigations (VMOM) and Focus Tree Inspections (FTI) will identify new trees for the sort of work identified in this inventory. Additionally, if any priority trees are discovered while completing the TRI scope of work, they would be listed for work consistent with all other VM programs. c) 1) For VMOM, PG&E utilized VM EPSS-enabled outage data, historical VM outage data, and customer outage impact data. 2) For FTI, Areas of Concern (AOCs) were identified through a cross-functional effort utilizing county-based regional reviews to create polygons which are geographic areas. Initial polygon development utilized WDRMv3 consequence scores, Public Safety Specialist circuit-based evaluations, expertise, 30-year lookback of meteorology data, and analysis, identified PSPS Lookback Polygons, PSPS Vegetation Damage locations, vegetation caused ignition data, and vegetation caused outage data. The process is intended to be performed annually to identify where trends, models, or emerging available data indicated higher likelihood of tree caused damage or outages. d) N/A e) N/A f) The on-going re-inspection and evaluation work will focus on the remaining 209K trees that were identified for removal at the conclusion of EVM that had a TAT result other than ABATE. g) The 2023 Tree Inventory Program scope of work is targeting the re-inspection of approximately 28K trees that had a TAT result other than ABATE. Once re-inspected if it is determined that a tree does not need removal the tree will be inspected annually going forward during the Routine Maintenance and Second Patrol inspections.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
15	CalPA	Set WMP-08	CalPA_Set WMP-08	3	CalPA_Set WMP-08_Q3	Regarding the new "VM for Operational Mitigations" described in section 8.2.2.2.3 of PG&E's WMP, PG&E states: This is a new transitional program for 2023 stemming from the conclusion of the EVM program. This program is intended to help reduce outages and potential ignitions using a risk-informed, targeted plan to mitigate potential vegetation contacts based on historic vegetation outages on EPSS-enabled circuits. PG&E will initially focus on mitigating potential vegetation contacts in CPZs that have experienced vegetation caused outages. Scope of Work will be developed by using EPSS and historical outage data and vegetation failure from the WDRM v3 risk model. EPSS-enabled devices vegetation outages extent of condition inspections may generate additional tree work. a) Please explain what is meant by the term "transitional" in the first sentence. b) Please explain what is meant by the sentence "EPSS-enabled devices vegetation outages extent of condition inspections may generate additional tree work." c) When will PG&E develop initial the scope of work for this program? d) How frequently will PG&E update the scope of work for this program (e.g., annually or quarterly)? e) Please explain PG&E's methodology for developing the scope of work for this program. f) Please explain how PG&E will use EPSS data to contribute to the scope of work for this program. g) Please explain how PG&E will use historical outage data to contribute to the scope of work for this program. h) Please explain how PG&E will use "vegetation failure from the WDRM v3 risk model" to contribute to the scope of work for this program.	a) Our wildfire mitigation capabilities have continued to evolve and mature since 2019. With the conclusion of Enhanced Vegetation Management (EVM) at the end of 2022, we continue to evolve our Vegetation Management program. The use of 'transitional' for this program represents the evolution of the Vegetation Management program through the introduction of a new program, Vegetation Management for Operational Mitigations (VMOM) program, which is intended to reduce the impacts of more frequent outages caused by the increased sensitivity of EPSS enabled devices. b) As part of this program an extent of condition inspection is conducted when the cause of an EPSS enabled outage is determined to be vegetation related. An extent of condition inspection evaluates five spans in all directions from the location of the outage looking for additional trees that may pose a similar risk as the tree that caused the outage. The sentence 'EPSS-enabled devices vegetation outages extent of condition inspections may generate addition tree work' is related to any additional trees that may be identified under this inspection. c) The 2023 VMOM Scope of work has been developed and approved on February 23, 2023. d) PG&E will develop the scope of work on an annual or as needed basis which will bepresented for consideration, review, and approval through our Wildfire Risk Governance Steering Committee. e) PG&E utilized VM EPSS-enabled outage data, historical VM outage data, and customer outage impact data. f) PG&E will utilize EPSS Outages Extent of Condition (EOC) patrols to identify and generate additional tree work throughout the year. Additionally, EPSS outage data will be utilized in the scope of work development for the following year. g) PG&E utilized historical vegetation caused outage data as well as EPSS enabled outage data provided by the EPSS PMO team to refine our CPZ targets for the VMOM program. h) The Wildfire Data Risk Model (WDRM) v3 was utilized to prioritize 9 CPZs for the VMOM	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.3	Vegetation Management Inspections	VM for Operational Mitigations
16	CalPA	Set WMP-08	CalPA_Set WMP-08	4	CalPA_Set WMP-08_Q4	Regarding the new "Focused Tree Inspections" described in section 8.2.2.2.5 of PG&E's WMP, PG&E states: This is a new transitional program for 2023 stemming from the conclusion of the EVM program. PG&E is developing AOCs to better focus VM efforts to address high risk areas that have experienced higher volumes of vegetation damage during PSPS events, outages, and/or ignitions. We have conducted a county-by-county review with regional SMEs and used this information to develop polygons where focused vegetation inspections can be evaluated to determine appropriate counties to prioritize pilot(s). Focused Tree Inspection plans will be piloted in at least one area. The pilot will develop and implement guidelines that inform inspections. a) Please explain what is meant by the word "transitional" in the first sentence. b) Does "AOCs" stand for "Areas of Concern" in this instance? If not, then please define it. c) Please describe PG&E's methodology for developing the abovementioned polygons. d) How does PG&E determine where focused vegetation inspections can be evaluated? e) How does PG&E determine which counties are appropriate to prioritize for pilots? f) How will PG&E determine in which county or counties to execute a pilot or pilots? g) Please describe the following aspects of the pilot or pilots: i. Scope of work ii. Budget iii. Duration iv. Goals and objectives v. Success metrics h) Please describe the following regarding the guidelines that PG&E will develop based on the pilot(s), as mentioned above: i. The expected content of the guidelines ii. How PG&E expects the guidelines to inform inspections iii. When PG&E expects to develop such guidelines i) Please describe the steps that PG&E expects a "focused tree inspection" to include. j) Please compare the planned "focused tree inspections" to the tree inspections previously	a) Similar to TRI and VMOM programs, the Focus Tree Inspection (FTI) program has been developed following the conclusion of EVM in 2022. For this program "Transitional" is used to recognize similar targeted efforts to reduce risk formerly associated with EVM that go beyond compliance mandated clearances. All three programs are intended to further reduce vegetation related outages and ignitions. The FTI program was built in response to RN-22-09 which compelled benchmarking the use of predictive and risk modeling in VM with SCE and SDG&E. As a result, PG&E has developed data and SME informed "Areas of Concern" (AOC) to pilot enhanced targeted inspections where the analysis indicates increased risk of vegetation failures in high-risk areas. Similar to EVM, the piloting of this program has been prioritized using information from the Wildfire Distribution Risk Model (WDRM). Pilots will begin in Q2 2023 in four AOC. The results and learnings from the pilots will inform the development and monitoring of a broader program as a transitional measure intended to reduce VM outages. b) Yes c) AOCs were identified through a cross-functional effort utilizing county-based regional reviews to create polygons which are geographic areas. Initial polygon development utilized Public Safety Specialist circuit-based evaluations, 30-year lookback of meteorology data, PSPS Lookback Polygons, PSPS Vegetation Damage locations, vegetation caused ignition data, and vegetation caused outage data. The process is intended to be performed annually to identify where trends, models, or emerging available data indicate higher likelihood of tree caused damage or outages. d) The FTI program will be piloted in four regional AOCs beginning in Q2 2023. These regional pilot areas and the resulting inspections will be evaluated and monitored to inform refinements to the program prior to larger-scale implementation. The program will rely upon ongoing evaluation to refine AOC areas and inspection scope based on these evaluations predominately informed by outage analysis. e) Pilot AOCs are prioritized using WDRMv3. The four pilot AOCs selected for 2023 incorporated additional reviews from the VM Execution Operational Team to select appropriate regional areas to inform the programs development. f) Please refer to response e). Butte, Calaveras, El Dorado, and Nana counties were	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
17	CalPA	Set WMP-08	CalPA_Set WMP-08	5	CalPA_Set WMP-08_Q5	PG&E states on p. 539 of its WMP: PG&E is restructuring our VM Program starting in 2023. Based on recent data and analysis, the risk reduction of the EVM Program is less than the risk reduction from the EPSS program that was introduced in 2021.8 a) Please describe the abovementioned "data and analysis" that shows that "the risk reduction of the EVM program is less than the risk reduction from the EPSS program". b) Please provide any available workpapers, reports, or other documents that support the statement quoted above.	a) PG&E introduced the comparison of risk reduction and Risk Spend Efficiency (RSE) of EPSS vs EVM in the 2022 WMP and 2023 GRC Supplemental Filing in February 2022. This comparison is described in the 2023 GRC, Exhibit 3 Chapter 4 page 3-2 through 3-7. The updated wildfire mitigation strategy is summarized in Table 3-4 on page 3-39, as the risk reduction relative to spend between EVM and EPSS is substantially in EPSS's favor. b) Please reference the following workpapers: • 2022 WMP o 2022 WMP Data Table 12 - '2022-02-25_PGE_2022_WMP Update_R0_Section 7.3.a_Atch01', initiative 7.3.5.15 and 7.3.6.8 o EVM RSE Workpaper - '2022-02-25_PGE_2022_WMP-Update_R0_Section 7.3.a_Atch06-R1' o EPSS RSE Workpaper - '2022-02-25_PGE_2022_WMP-Update_R0_Section 7.3.a_Atch07' • 2023 GRC Supplemental Filing o ED_001 – 'EO-WLDFR-3_RSE Input File.xlsm' 8 PG&E's WMP, p. 539	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.3.4	Vegetation Management and Inspections	Fall-In Mitigation

18	CalPA	Set WMP-08	CalPA_Set WMP-08	6	CalPA_Set WMP-08_Q6	PG&E states on p. 539 of its WMP: Additional Operational Mitigations such as PVD and DCD will also help to mitigate risk previously prescribed to EVM. As a result, PG&E concluded the EVM Program at the end of 2022. a) Does “PVD” stand for “Partial Voltage Detection” in this instance? Please define if not. b) Does “DCD” stand for “Downed Conductor Detection” in this instance? Please define if not. c) How has PG&E determined that PVD will help to mitigate risk that PG&E previously sought to mitigate with EVM? d) Which particular risks will PVD help mitigate that PG&E previously sought to mitigate with EVM? e) Please provide any available documentation and analysis showing that PVD will help to mitigate risks that PG&E previously sought to mitigate with EVM. f) How has PG&E determined that DCD will help to mitigate risk that PG&E previously sought to mitigate with EVM? g) Which particular risks will DCD help mitigate that PG&E previously sought to mitigate with EVM? h) Please provide any available documentation and analysis showing that DCD will help to mitigate risks that PG&E previously sought to mitigate with EVM.	a) Yes, “PVD” refers to Partial Voltage Detection. b) Yes, “DCD” refers to Downed Conductor Detection. c) Partial Voltage Detection (and subsequent force outs of the nearest upstream SCADA capable device) are part of a “defense in depth” strategy that supplements the already highly effective baseline Enhanced Powerline Safety Settings (EPSS). In particular, Partial Voltage Force Out actions and DCD both mitigate high impedance faults, which are very difficult to detect for traditional protection schemes. In 2022, 36 Partial Voltage detections and Force Outs occurred. In 11 of 36 force outs, hazards were identified that could have caused an ignition. These hazards included wire down and/or vegetation contact. d) As indicated in response c, PVD is a mitigation measure for high impedance faults, which can occur when vegetation contacts a powerline or a downed conductor. PVD is also able to provide detection for transformer backfeed high impedance faults. e) PVD increases the ability to mitigate high impedance fault conditions, which can occur following vegetation contact with a powerline. These benefits have the potential to add extra protection or complement EPSS. PG&E determined that EPSS mitigates risk which PG&E previously sought to mitigate with EVM and sees PVD as part of a defense and depth strategy to supplement EPSS. PG&E did not separately compare PVD to EVM. f) DCD is part of a “defense in depth” protection strategy that will become an added component of the already highly effective EPSS. DCD mitigates high impedance ground faults, which are very difficult to detect for traditional protection schemes. DCD detects and de-energizes faults as low as 1 amp primary ground current and trips in 1 second as compared to the existing Sensitive Ground Fault detection, which trips at a minimum of 15 amps, typically in 15 seconds. PG&E has performed lab testing which has shown DCD is able to detect and de-energize downed conductors reducing ignition risk where installed. g) DCD is an automated protection element that is expected to mitigate high impedance ground faults. h) DCD also increases the ability to mitigate high impedance ground fault conditions, which can occur following vegetation contact with a powerline. These benefits have the potential to add extra protection or complement EPSS. PG&E determined that EPSS mitigates risk which PG&E previously sought to mitigate with EVM and sees DCD as	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.3.4	Vegetation Management and Inspections	Fall-In Mitigation
19	CalPA	Set WMP-08	CalPA_Set WMP-08	7	CalPA_Set WMP-08_Q7	On pp. 314-316 of PG&E’s WMP, PG&E divides its operational mitigations into four different groups. Group 2 includes “Inspections and maintenance programs where we exceed compliance requirements until permanent mitigations are deployed and/or we implement new technologies so that we no longer need to exceed compliance requirements.” For the following Group 2 mitigations, please state the criteria by which PG&E will determine that it no longer needs to exceed compliance requirements, and state the basis for such a determination: a) Equipment Maintenance and Repair b) Pole Clearing Program c) Utility Defensible Space Program d) Wood Management e) Substation Defensible Space f) Focused Tree Inspections g) Transmission Integrated VM	PG&E does not currently have specific criteria for the listed mitigations, though certain permanent mitigations (e.g. distribution undergrounding) may reduce risk to a point where exceeding compliance is no longer needed. Continued analysis of ignitions, inspection finds, technology implementation results, etc. will inform the level of interim mitigation needed. We will continue to implement the Group 2 mitigations based on risk or benefit information.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	7.2.3	e Mitigation Strategy Develo	Interim Mitigation Initiatives
20	CalPA	Set WMP-08	CalPA_Set WMP-08	8	CalPA_Set WMP-08_Q8	On pp. 314-316 of PG&E’s WMP, PG&E divides its operational mitigations into four different groups. Group 2 includes “Inspections and maintenance programs where we exceed compliance requirements until permanent mitigations are deployed and/or we implement new technologies so that we no longer need to exceed compliance requirements.” For each of the following Group 2 mitigations, please state whether PG&E intends to discontinue the program/initiative once permanent mitigations are deployed or new technologies are implemented: a) Equipment Maintenance and Repair b) Pole Clearing Program c) Utility Defensible Space Program d) Wood Management e) Substation Defensible Space f) Focused Tree Inspections g) Transmission Integrated VM h) Emergency Response VM	At this time PG&E does not intend to discontinue any of the programs/initiatives listed in Group 2 mitigation. The programs/initiatives are designed and implemented to ensure that PG&E maintains compliance with state and federal regulations, as well as mitigate portions of the system that may be exposed to wildfire risk that cannot be managed through our control programs pending the implementation of System Resilience mitigations. In the future, for programs/initiatives that exceed compliance, PG&E may determine to stay at compliance requirements based on risk or benefit information.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	7.2.3	e Mitigation Strategy Develo	Interim Mitigation Initiatives
21	CalPA	Set WMP-08	CalPA_Set WMP-08	9	CalPA_Set WMP-08_Q9	Regarding the new “Tree Removal Inventory Program” described in section 8.2.2.2.4 of PG&E’s WMP, PG&E states: “PG&E estimates that our EVM inventory included more than 300,000 trees at the end of 2022.” Table 8-14, PG&E’s VM Targets, p. 502, states that PG&E will remove approximately 60,000 trees identified from the legacy EVM program through the end of 2025.11 a) Are the 60,000 trees “identified from the legacy EVM program” a subset of the trees in PG&E’s EVM inventory? b) If the answer to part (a) is yes, how will PG&E mitigate the risk posed by the approximately 240,000 trees from the EVM inventory that will not be removed during the period from 2023-2025? c) If the answer to part (a) is no, please explain the difference between the 60,000 trees to be addressed through 2025, and the more than 300,000 trees in the EVM inventory.	a) Yes, the 60K trees come from the group of approximately 385K EVM trees remaining. We plan to work down the risk associated with the 385K trees starting with 15K trees in 2023, 20K trees in 2024, and 25K trees in 2025, which results in 60K trees being worked through 2025. b) PG&E has operational mitigations including EPSS enablement in place. Additionally, PG&E conducts and will continue to conduct annual Routine and Second Patrol of these areas and address any Priority 1 or 2 hazardous tree conditions accordingly. c) N/A 10 PG&E’s WMP, p. 528. 11 15,000 trees in 2023, 20,000 trees in 2024, and 25,000 trees in 2025.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
22	CalPA	Set WMP-08	CalPA_Set WMP-08	10	CalPA_Set WMP-08_Q10	Per Table 8-12, Vegetation Management Implementation Objectives, PG&E’s Focused Tree nspection Program is currently under development. By the end of 2025, PG&E plans to “Fully implement AOC cross-functional team to implement guidelines across all AOCs.” Given that PG&E’s EVM program has been discontinued, and that its Focused Tree Inspection Program has not yet been fully developed, how will PG&E assess the risk of tree fall-ins during the period from 2023-2025?	PG&E will continue to assess the risk of tree fall-ins during the period from 2023-2025 through the Distribution Routine and Second Patrol programs accordingly. The identification of hazardous or other emergent priority trees is embedded into all VM tree trimming and mitigation programs, as well as the resulting work verification and quality programs. In addition to the Focused Tree Inspection Program, PG&E has also introduced the Tree Removal Inventory (TRI) and Vegetation Management for Operational Mitigation programs which will also be implemented to assess the risk of tree fall-ins during the same period in targeted portions of the service territory.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
23	CalPA	Set WMP-08	CalPA_Set WMP-08	11	CalPA_Set WMP-08_Q11	Table 8-14, PG&E’s VM Targets, states that PG&E will collect LiDAR data on its Transmission System (17,500 circuit miles). Table 5-2, Electrical Infrastructure, states that PG&E has a total of 18,111 circuit miles of overhead transmission lines. a) Does PG&E plan to not collect LiDAR data on approximately 600 overhead circuit miles of transmission? b) If the answer to part (a) is yes, please explain why. c) If the answer to part (a) is no, please explain why Table 8-14 shows a LiDAR target that is smaller than the size of PG&E’s overhead transmission system.	a) No, PG&E will collect LiDAR data on all overhead Transmission circuit miles. b) N/A c) The difference between LiDAR Transmission inspections mapped on ETGIS and our LiDAR vendor’s data is due largely to parallel circuits and some geometry differences; miles are confirmed against circuit location and length from the LiDAR data. It is common to see a difference between ETGIS and LiDAR survey data. When our LiDAR vendor indicates their completed miles on 100% of PG&E Transmission circuit miles, we use the ETGIS miles. PG&E continues to use ETGIS values as this is our asset data.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.1.1	Vegetation Management Inspections	Routine Transmission NERC and Non-NERC
24	CalPA	Set WMP-08	CalPA_Set WMP-08	12	CalPA_Set WMP-08_Q12	Table 8-14, PG&E’s VM Targets, states that “Each of the 3 programs (Routine Distribution, Routine Transmission and Pole Clearing) must achieve a 95% quality verification audit results pass rate.” Please describe the actions PG&E will take during the 2023-2025 period if a program does not achieve a 95% pass rate on quality verification audits.	Should a program fall below a 95% pass rate, catch back plans will be developed in partnership with VM execution to mitigate for specific cause of deficient rate.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.5	Vegetation Management and Inspections	Quality Assurance/Quality Control

25	CalPA	Set WMP-08	CalPA_Set WMP-08	13	CalPA_Set WMP-08_Q13	Table 8-18-1, Vegetation Management QV Program, lists the following audit pass results for 2022 VM work: Distribution: 91.3% Transmission: 94.2% Vegetation Control Pole Clearing: 90.3% a) Please describe any actions PG&E has taken or plans to take to improve the Distribution VM audit results pass rate from 91.3% in 2022 to 95% in 2023. Please include the timeline for completing those actions. b) Please describe any actions PG&E has taken or plans to take to improve the Transmission VM audit results pass rate from 94.2% in 2022 to 95% in 2023. Please include the timeline for completing those actions. c) Please describe any actions PG&E has taken or plans to take to improve the Pole Clearing VM audit results pass rate from 90.3% in 2022 to 95% in 2023. Please include the timeline for completing those actions.	a) Improved quality verticals have been established for 2023, allowing for greater insight into overall VM work product throughput and risk identification/mitigation. Clear definitions of acceptance criteria, sampling methodology, population eligibility, and pass rate calculations were established and communicated across the VM organization prior to beginning 2023 audits. b) Improved quality verticals have been established for 2023, allowing for greater insight into overall VM work product throughput and risk identification/mitigation. Clear definitions of acceptance criteria, sampling methodology, population eligibility, and pass rate calculations were established and communicated across the VM organization prior to beginning 2023 audits. c) Improved quality verticals have been established for 2023, allowing for greater insight into overall VM work product throughput and risk identification/mitigation. Clear definitions of acceptance criteria, sampling methodology, population eligibility, and pass rate calculations were established and communicated across the VM organization prior to	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.5.1	Vegetation Management and Inspections	Quality Assurance and Quality Verification
26	CalPA	Set WMP-08	CalPA_Set WMP-08	14	CalPA_Set WMP-08_Q14	Regarding the "Distribution Second Patrol" described in section 8.2.2.2.2 of PG&E's WMP, PG&E states: "PG&E has implemented a plan to complete the identified dead/dying tree work within 180 days for HFTD areas and within 365 days for non-HFTD areas." a) What specific steps, actions, or measures are included in the plan noted in the quote above – in other words, what specific steps is PG&E taking to ensure that dead/dying tree work will be completed within the stated timeframes? b) How did PG&E determine that 180 days was an appropriate and prudent timeframe for completing dead/dying tree work in HFTD areas? c) Does PG&E plan to complete identified dead/dying tree work within 180 days in HFTD areas for its Distribution Routine Patrol (section 8.2.2.2.1)? d) If the answer to part (c) is no, please explain why not. e) What is PG&E's expected time to complete dead/dying tree work identified during its Distribution Routine Patrol?	a) To ensure that dead/dying tree work is completed with 180 days in HFTD and 365 days in non-HFTD, PG&E VM has developed a process to report out in Daily Operating Reviews and Weekly Operating reviews at multiple functional levels -including VM leadership and VM execution - the status of dead and dying trees and their timelines and timeliness status. This measure ensures visibility and accountability at the regional level. b) In addition to managing to complete work between Routine and Second Patrol work-cycles, the timeframe to complete dead/dying tree work within HFTD areas was based on GO 95 Rule 18 priority level 2, for corrective actions of conditions within Tier 3 to be completed within 6 months (180 days) of identification. c) Yes, PG&E does plan to address identified dead/dying trees in the stated timeframes in HFTD and non-HFTD in Distribution Routine Patrol. d) N/A. See c. above. e) The timeframe to complete dead/dying tree work identified during Distribution Routine Patrol is 180 days in HFTD and 365 days in non-HFTD	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.2.2	Vegetation Management and Inspections	Distribution Second Patrol
27	CalPA	Set WMP-08	CalPA_Set WMP-08	15	CalPA_Set WMP-08_Q15	Regarding the "Defensible Space Inspection" described in section 8.2.2.3.1 of PG&E's WMP, PG&E states: "Landowner related issues continue to prevent PG&E from achieving 100 percent defensible space completion status at locations where substation defensible space zones extend into privately owned property." a) Where substation defensible space zones extend into privately owned property, what is PG&E's process for completing defensible space inspections? b) What actions does PG&E plan to take during the 2023-2025 WMP period to address landowner related issues in order to achieve the highest possible defensible space completion status?	a) When defensible space zones extend onto private property, outreach to such landowners is made in advance to obtain permission to enter and conduct inspection. If access is granted, the inspection is executed with fuel reduction and PRC 4291 compliance prescription determined. If access is denied and found to be without applicable easements, other land rights or valid entry agreements, the inspection record will reflect a "refusal" and documented for future reference as PG&E does not have the right to conduct defensible space inspections on property not owned by the Company. b) Annual defensible space inspections do serve as an opportunity to re-engage prior refusal landowners. Changes in landowner opinion, new local agency defensible space ordinances or code often support reversal in status.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.2.3.1	Vegetation Management and Inspections	Defensible Space Inspection
28	CalPA	Set WMP-08	CalPA_Set WMP-08	16	CalPA_Set WMP-08_Q16	Regarding "Wood and Slash Management" described in section 8.2.3.2 of PG&E's WMP, PG&E states: "Chips are left on site or removed off site based on owner preferences." PG&E further states that "Wood Management is a voluntary program in which property owners must opt in to participate." a) If PG&E is unable to contact a landowner, how does it manage wood chips? b) How does PG&E ensure that landowners are aware of the opt-in Wood Management program? c) How does PG&E record landowner opt-ins to the Wood Management program? d) Once a landowner opts into the Wood Management program, how quickly does the program become effective? E.g., could a landowner opt-in while VM work is being performed? e) How does PG&E inform VM contractors of the landowner's Wood Management preference? f) Does the Wood Management opt-in remain valid indefinitely or must landowners renew their preferences on a regular basis? g) If a landowner has complaints regarding wood and slash management by PG&E VM employees or contractors, what is the process for receiving, recording, and responding to such complaints?	a) If PG&E is unable to contact a landowner regarding their preference for wood chips, crews will remove the wood chips when safe to do so. If access does not allow for chipping and wood chip removal, crews will lop and scatter debris on site in accordance with applicable regulations. b) There are multiple real-time opportunities for landowners to request wood management. PG&E field personnel attempt to engage with landowners in-person about tree work and wood management preferences at the time of inspections, tree work and post-tree work verification. Field personnel may also leave door hangers or other informational materials if landowners are unavailable. Following active emergency response efforts where landowners may not be present, we initiate regional post-event outreach. This may include letters, door hangers, interactive voice messages and/or press releases. Information is also available at pge.com. c) Our dedicated customer team is equipped to receive, record, and process all landowner opt-ins for wildfire and EVM wood management through our internal customer relationship management database. This includes opt-ins that come through field personnel. d) Yes, landowner wood management preferences are effective immediately. We work as quickly and efficiently as possible to manage and haul accessible wood without compromising public safety, access or environmental and cultural resources. As each property is different, we collaborate with the landowner to find an optimal solution. The timeline for wood management is dependent on landowner permission, ground conditions, and the ability for our crews to safely access the wood. Wood management may also be subject to permitting requirements. Landowners can opt into the Wood Management program at any time before, during or after tree work is conducted. Field personnel as well as our dedicated customer team can work directly with landowners to record their wood management preferences through our internal customer management database in person, by phone or by email. e) Landowner wood management preferences are indicated to operations personnel through our work management platform. f) Wood management preferences apply to an instance of tree work activity on a property. If new tree work is prescribed, we would coordinate with the landowner on their preferences	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.3.2	Vegetation Management and Inspections	Wood and Slash Management
29	CalPA	Set WMP-08	CalPA_Set WMP-08	17	CalPA_Set WMP-08_Q17	Regarding "High-Risk Species" described in section 8.2.3.6 of PG&E's WMP, PG&E states: "There are no governing standards for high-risk species." a) Does PG&E plan to develop governing standards for high-risk species? b) If the answer to part (a) is yes, when does PG&E expect to complete development of such standards? c) If the answer to part (a) is no, please explain why not.	a) For Routine and Second Patrol, PG&E does not currently have standards specific to high-risk species. Trees identified during these inspection cycles that require mitigation per PRC4293 and GO95 Rule 35 are expected to be identified and listed for work regardless of species. A new program, Focused Tree Inspection (FTI) is being piloted starting in Q2 2023 and will incorporate regional outage analysis informed by tree caused outages within Areas of Concern (AOC) developed in Q4 2022. These pilots are expected to analyze area specific vegetation related outages within the AOC polygons in advance of FTI. When detailed outage data is available, this analysis will indicate vegetation caused outage trends that include species and failure types. The experience and findings during execution of these pilots may inform development of program specific guidance that relates to regional high-risk species. PG&E will then determine which programs are best suited to incorporate species specific guidance due to anticipated regional variation. b) Development of any standards related to high-risk species is still being determined and contingent upon completion of FTI pilots in 2023. A determination will be made specific to that program as its guidance is formalized following the pilots. c) Not applicable.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.3.6	Vegetation Management and Inspections	High-Risk Species
30	CalPA	Set WMP-08	CalPA_Set WMP-08	18	CalPA_Set WMP-08_Q18	PG&E's WMP states, in Table 8-18-3, VM Field QC Metrics Report, that pass rates are "not a WMP target" for 2023-2025. Please explain why PG&E has not set target pass rates for VM Field QC for 2023-2025.	The Quality Management team has aligned on setting target pass rates at 88% for Field Quality Control Active Observation Programs for the following core vegetation management programs: Routine Distribution, Second Patrol Distribution, Vegetation Control, and Routine Transmission.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	0	N/A	8.2.5.2	Vegetation Management and Inspections	Quality Control

31	CalPA	Set WMP-08	CalPA_Set WMP-08	19	CalPA_Set WMP-08_Q19	Table 8-19, Priority 1/Priority 2 and Second Patrol Trees Categorized By Age, shows 296 priority 1 or 2 trees that were inspected more than 180 days prior to February 28, 2023. Please provide a table with the following additional information for these 296 trees: a) The exact number of days since the last inspection, as of February 28, 2023 b) The current priority level of the tree c) The type of the most recent inspection d) The HFTD tier where the tree is located e) PG&E's expected remediation date for the tree.	The data for the 296 P1/P2/Second Patrol trees can be found on "WMP Discovery2023_DR_CalAdvocates_008-Q019Atch01.xlsx" For the 3 Priority 1/Priority 2 Trees out of the set of 296, please refer to tab 'P2 Data'. a) Please see 'Age' in 'Column I' on tab 'P2 Data' for the age in days since the last inspection as of February 28, 2022. b) Please see 'Priority' in 'Column E' on tab 'P2 Data' for the priority level. • If vegetation is determined to be an immediate risk to PG&E facilities, described as a Priority 1 Condition, the condition will be mitigated within 24 hours of identification as long as conditions are safe for the tree crew to proceed with work. • Vegetation identified as pending Priority 2 work within the RFW area will be reviewed and mitigated as outlined in the VM Priority Tag Procedure (TD 7102P-17). c) Please see 'dtInspDate' in 'Column D' on tab 'P2 Data' for the Inspection date. d) Please see 'iHFTDTier' 'Column H' on tab 'P2 Data' for the HFTD Tier. e) We do not have a source for tracking planned worked date for individual trees and are unable to provide the data at this time. For the 293 trees out of the set of 296, please refer to tab 'TM Data'. Please note, the quantity of trees that correspond to the 'TreeRecsID' can be located on 'Column L' of the 'TM Data' tab in attachment. a) Please see 'Age' in 'Column J' on tab 'TM Data' for the age in days since the last inspection as of February 28, 2022. b) Please see 'Priority' in 'Column F' on tab 'TM Data' for the priority level. • 'Routine' classification is normal compliance work prioritized to be complete during the normal work cycle. • 'Expanded' classification is work that needs to be completed as part of reliability. • 'Accelerated' classification are trees that are out of compliance and need to be worked before the next work cycle occurs. c) Please see 'dtInspDate' in 'Column D' on tab 'TM Data' for the last inspection date as of February 28, 2022. d) Please see 'iHFTDTier' in 'Column K' on tab 'TM Data' for the HFTD tier.	Holly Wehrman	3/30/2023	4/5/2023	4/5/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_008.zip	1	N/A	8.2.6	Vegetation Management and Inspections	Open Work Orders
32	CalPA	Set WMP-09	CalPA_Set WMP-09	1	CalPA_Set WMP-09_Q1	P. 10 of PG&E's WMP states, "We have completed certain programs and removed some less impactful targets from the 2023 WMP." a) Please list the "less impactful" targets that were removed from the 2023 WMP. b) For each target in part (a), please explain how PG&E determined that the target was "less impactful."	a) The targets that were included in the 2022 WMP but not included in the 2023 WMP are identified below. Please note that we do not necessarily consider each of these to be "less impactful" in all situations. Instead, they are more properly described as not being the best choice for our wildfire mitigation portfolio at this particular point in time. • Weather Station Installation and Optimization – PG&E did not include a target for weather station installation in the 2023-2025 WMP because our weather station network is nearing full maturity with more than 1,400 weather stations installed. We will continue to evaluate the need for additional stations. • High-Definition Camera Installations – PG&E has sponsored over 600 cameras covering 90 percent of the HFTD tier 2 and tier 3 areas and, given this saturation, we are not currently planning to install new cameras at this time. • Early Fault Detection Installations - PG&E does not have a 2023 Target for EFD installations. We plan to develop and implement processes and procedures to analyze EFD alarms, conduct field investigations and track mitigation activities to effectively use EFD technology prior to deploying additional sensors. • Distribution Sectionalizing Devices - PG&E has completed our transmission and distribution PSPS line sectionalizing programs. Because there is limited incremental benefit to installing additional switches, we are not including these mitigation initiatives in this WMP. • Temporary Distribution Microgrids - No additional temporary distribution microgrids will be built in 2023. The program will close after improvement projects on existing sites are completed. PG&E may develop other distribution microgrids supported by temporary or permanent generation through other programs such as the Community Microgrid Enablement Program and Microgrid Incentive Program. • Remote Grid – PG&E is continuing to develop Remote Grids as an alternative to, or in conjunction with, system hardening or other mitigation efforts. Even though we do not have a quantitative target for remote grids installed, they will continue to be part of our wildfire mitigation portfolio. • Enhanced Vegetation Management (EVM) – PG&E's EVM program concluded at the end of 2022.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	1	Executive Summary & Overview	N/A
33	CalPA	Set WMP-09	CalPA_Set WMP-09	2	CalPA_Set WMP-09_Q2	P. 107 of PG&E's WMP states, "Increased temperatures can cause electric equipment to age more quickly which will increase the need for more frequent asset replacements. Higher temperatures may cause equipment to fail resulting in customer outages." a) What steps has PG&E taken to mitigate the increased risk of asset failure anticipated from rising temperatures? b) What steps does PG&E plan to take during the 2023-2025 WMP period to mitigate the increased risk of asset failure anticipated from rising temperatures?	PG&E notes that this statement is included in the 2023-2025 WMP as a general observation about the sensitivity of certain electric assets to prevailing temperatures that exceed equipment design specifications. It does not constitute a thorough evaluation of the vulnerability (meaning, the exposure of an asset to a specific climate hazard as well as an asset's sensitivity to that climate hazard) of a given asset or of the grid as a whole. PG&E will file its first Climate Vulnerability Assessment pursuant to CPUC Decision 20-08-046 in May 2024.4 In addition to the answers provided below, the 2022 Climate Strategy Report contains a significant amount of detail on the Company's climate mitigation and adaptation activities.5 a) PG&E has substantial existing adaptive capacity to manage the increased risk of asset failure driven by heat-related climate hazards and is taking the following steps to mitigate this risk: 1) PG&E routinely monitors, maintains, and replaces heat-sensitive electric equipment as part of the company's core mission to deliver safe, clean, affordable, reliable energy. 2) PG&E has developed a predictive transformer failure model to better target existing transformer replacement efforts. 3) PG&E is currently reviewing electric design standards to ensure that they account for projections of future heat conditions. This will ensure that equipment at the end of its useful life will be replaced with equipment designed to be resilient to prevailing future conditions. 4) In addition to the above, PG&E's Climate Resilience Team provides relevant climate projection data to PG&E's Enterprise and Operational Risk Management group for incorporation into the bowtie models that are the foundation of the Risk Assessment and Mitigation Phase (RAMP) filing. Climate data is integrated into risk bowtie models to the extent that climate projection data can be translated into near-term frequencies while maintaining statistical validity (climate projections cannot and should not be used to "predict" weather events in a given future year). Please see PG&E's 2020 RAMP filing for more information about the treatment of the climate change cross cutting risk factor. b) In the 2023-2025 period, PG&E will continue to manage the risk of asset failure utilizing existing capabilities as mentioned above, including advancing the quantitative Risk	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	5.3.4.2	Overview of the Service Territory	Climate Change Phenomena and Trends
34	CalPA	Set WMP-09	CalPA_Set WMP-09	3	CalPA_Set WMP-09_Q3	P. 598 of PG&E's WMP states: In 2022 we continued our assessment through the Electric Program Investment Charge 3.45, "Automated Fire Detection from Wildfire Alert Cameras," program. Through our assessment period we determined that AI detection on camera will improve our detection system and in 2023 we will select a vendor to install AI detection on our cameras. a) How did PG&E determine that AI detection would improve its detection system? b) Please quantify the extent to which PG&E anticipates AI detection will improve PG&E's detection system. c) Please provide any available studies, analyses or reports to support your statements in response to parts (a) and (b). d) As of the beginning of 2023, how much has PG&E spent on the Electric Program Investment Charge 3.45, "Automated Fire Detection from Wildfire Alert Cameras," program? e) How much does PG&E forecast spending on the Electric Program Investment Charge 3.45, "Automated Fire Detection from Wildfire Alert Cameras," program in each of the years 2023, 2024, and 2025? f) When is the earliest date that PG&E expects to realize benefits from automated fire detection?	a) PG&E ran a pilot of AI technology in 2021 to determine the efficacy of this new technology to assist with the detection and notification of new ignitions. In 2022 a project was launched under the Electric Program Investment Charge 3.45 in which multiple potential vendors participated to prove out the ability of the AI technology to continuously monitor the feeds from the wildfire cameras installed in PG&E service territory and provide alerts to both PG&E and responding agency partners in order to reduce response time to detected ignitions. During the EPIC project, PG&E's team determined that AI would enable both PG&E and First Responders to receive notifications of ignitions detected on installed wildfire cameras. The decision was made to pursue AI implementation on all PG&E sponsored cameras in 2023. It is important to note that CAL FIRE, SCE, and SDG&E are all sponsoring AI implementation on their sponsored cameras in 2023. The ability for the over 1,000 wildfire cameras installed across the state to be continuously monitored with rapid alerting for responding agencies is seen as a major step forward in the detection and response to wildfire ignitions. b) AI detection will enable more rapid notification of responding agencies to new fire ignitions. Early results have shown between 2 and 30 minutes are saved when utilizing automated detection technology (AI). The anticipated improvement across the entire state is that responding agencies will become aware of new ignitions more quickly than relying on the public notifications that have been utilized to this point (i.e., calling 9-1-1). c) Please refer to attachment WMP-Discovery2023_DR_CalAdvocates_009-Q003_Atch01 which contains a comparative analysis illustrating instances when the AI detection times were faster than the 9-1-1 calls (IRWIN Discovery Time). d) As of the beginning of 2023, PG&E spent $1,043,000 on the Electric Program Investment Charge 3.45, "Automated Fire Detection from Wildfire Alert Cameras" program. e) The EPIC project has ended and there will be no additional spend on this going forward. The cost to implement AI on the PG&E sponsored cameras will be carried within the Wildfire Camera program budget. This is expected to be approximately $1,600,000 in 2023 with incremental increases going forward. CAL FIRE, SCE, and SDG&E will also be supporting AI on their sponsored cameras at the same cost per camera	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	8.3.4.2	Situational Awareness and Forecasting	Ignition Detection Systems

35	CalPA	Set WMP-09	CalPA_Set WMP-09	4	CalPA_Set WMP-09_Q4	P. 174 of PG&E's WMP states, "The results of the PSPS Consequence Model are then calibrated to PG&E's Enterprise Risk Model's MAVF Risk Score for PSPS." For each component in PG&E's MAVF, explain how the results of the PSPS Consequence Model are calibrated to the MAVF.	PG&E's PSPS MAVF Risk Score includes safety, reliability, and financial components. The combination of the components results in a total MAVF Risk Score for PSPS. For Safety, PG&E uses the combination of 50% PG&E PSPS data and 50% US industry widespread unplanned outage data. Based on blending of the two datasets, PG&E arrives at a Serious Injury or Fatality (SIF) / million Customer Minutes Interrupted (CMI). Details are shown in "WMP-Discovery2023_DR_CalAdvocates_009-Q004Atch01.pptx." For Reliability, PG&E uses the CMI estimates from the historical back-cast for each lookback event. Details are shown in "WMP-Discovery2023_DR_CalAdvocates_009-Q004Atch02.xlsx." For Financial, PG&E uses the historical cost of executing PSPS events and estimates a fixed cost of executing a PSPS and a cost per customer through linear regression. Details are shown in "WMP-Discovery2023_DR_CalAdvocates_009-Q004Atch03.xlsx." PG&E's PSPS consequence model is based off the back-cast of potential PSPS events since 2010 at the customer level. For each customer, the model provides an expected number of CMI based on the PSPS frequency and duration. However, the CMI outputted is not directly converted to MAVF. This is because of the non-linear scaling of the MAVF (1 event with very high CMI impact is not the same as many events with small CMI impacts). As such, PG&E calibrates the PSPS Consequence Model to the Enterprise MAVF risk score by proportionally allocating the percent contribution of each customer CMI of the total times the total MAVF Risk Score. Additionally, PG&E includes a critical customer weighting, for example, a medical baseline customer has a weighting of 2, so the CMI associated with that customer would be equivalently double that of a regular customer. As an example: The Overall MAVF Risk Score is 100 Customer 1 (medical baseline) experiences 10 CMI Customer 2 (regular) experiences 30 CMI Customer 1's equivalent CMI is 10 CMI * 2 weighting = 20 CMI Customer 2's equivalent CMI is 30 CMI * 1 weighting = 30 CMI Customer 1's MAVF = 100 * (20)/(20+30) = 40 MAVF	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	3	N/A	6.2.2.3	Risk Methodology and Assessment	Risk and Risk Components Calculation
36	CalPA	Set WMP-09	CalPA_Set WMP-09	5	CalPA_Set WMP-09_Q5	P. 161 of PG&E's WMP discusses Group G, Above-Grade Hardware, in the context of PG&E's WTRM. Group G has two sub-groups. PG&E states, "Sub-Group 1 consists of components where the life cycle closely aligns with that of the structure. These include the hanger plate and bolts." a) Does the WTRM apply the same hazards and threats to all components within a grouping? Please explain your answer. b) Does PG&E's grouping within the WTRM account for any hazards that may be unique to a subset of hardware within a group? Please explain your answer. c) Hanger plates may be subject to wear such as "keyholing" that the main structure may not experience. How does PG&E account for this potential difference in life cycle between hanger plates and the structure? d) Which group within the WTRM includes c-hooks? e) Please explain your justification for your answer to part (d).	a) Yes, the same hazard and threats are applied to all components within a grouping. Grouping a set of components is based on the following considerations: 1. Similar asset lifecycle; 2. Sensitivity to similar threats and hazards; and 3. Similar Asset Management strategy. b) As a starting point, the WTRM assumes that all components have been designed to the minimum design wind loads and are equally susceptible to the threats affecting the component group. As more data is collected on individual components, the model framework will be used to select the most vulnerable component for a given hazard. For example, if thicker hanger plates than required by minimum design wind loads have been installed on a structure, it may be determined that another component in the above grade hardware grouping has a higher probability of failure during high winds. In that case, the most vulnerable component would then represent the component grouping probability of failure. c) The WTRM incorporates the differences between hanger plates and the structure by modelling the threats and hazards that apply to each of them in different models. For hanger plates, inspection data (in this case, any observed wear or "keyholing") is incorporated by decreasing the expected "strength" which increases the failure likelihood of that component. The structure itself has different and unique threats that are modeled separately from the C-hook and hanger plate. d) C-hooks are included in the Above Grade Hardware group. e) C-hooks are considered to be in the Above Grade Hardware group because they have	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	6.2.2.1	Risk Methodology and Assessment	Risk and Risk Components Calculation
37	CalPA	Set WMP-09	CalPA_Set WMP-09	6	CalPA_Set WMP-09_Q6	P. 193 of PG&E's WMP states, "top-risk areas are defined as the areas corresponding to those 100 x 100 m pixels that intersect PG&E overhead electrical infrastructure locations and that are in the upper 20th percentile based on WDRM v3 risk scores." a) By "upper 20th percentile," does PG&E mean the 80th through 100th percentiles, as percentiles are conventionally defined (in other words, the highest quintile of risk scores)? b) In the above statement, does "upper 20th percentile" refer to all WDRM v3 risk scores (which encompass most of PG&E's service territory), or a subset (for example, the upper 20th percentile of those WDRM v3 risk scores located within HFTD)? Please explain your answer. c) How many circuit-miles are included in the "upper 20th percentile" as this term is used in PG&E's WMP?	a) Yes, by "upper 20th percentile" PG&E means the 80th through 100th percentiles; i.e., the highest quintile of risk scores. b) The "upper 20th percentile" refers to a subset of WDRM v3 risk scores. The "top risk" areas were identified using the following process: (1) PG&E service territory was spatially divided into a grid of square, 100 m x 100 m pixels; (2) for each pixel intersecting PG&E overhead electrical distribution infrastructure (1,455,233 pixels), the WDRM v3 was used to produce a risk score (range: 0 [least risk] - 0.233864143 5 [greatest risk]); and (3) those 20 percent of risk-scored pixels (289,046 pixels) with the greatest risk scores (range: 0.0006426839 - 0.2338641435) were designated as "top-risk" areas. c) The number of overhead distribution circuit miles included in the "upper 20th percentile" is 16,262 miles (from a total of approximately 81,000 overhead distribution circuit miles).	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	6.4.1.2	Risk Methodology and Assessment	Top Risk Areas Within the HFRA
38	CalPA	Set WMP-09	CalPA_Set WMP-09	7	CalPA_Set WMP-09_Q7	P. 73 of PG&E's WMP states, "We created a species-specific stress index model for PG&E tree health and mortality." a) What is PG&E's species-specific stress index model for tree health and mortality? b) How does PG&E utilize its species-specific stress index model for tree health and mortality? c) Please describe the data inputs to this model. d) Please describe the outputs of this model.	a) A species-specific stress index model for tree health and mortality uses information related to temperature, precipitation, evapotranspiration, and other environmental trends to evaluate issues impacting tree health and mortality. b) PG&E has not yet received the information from its vendor needed to develop the stress index model but expects to receive it shortly. Once the information is received, PG&E will perform additional analysis in order to test the feasibility of creating a species-specific model. PG&E has corrected this information in its April 6, 2023 WMP errata. c) PG&E has not yet created the model, as described in response to subpart (b). d) PG&E has not yet created the model, as described in response to subpart (b).	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	4.4	Overview of WMP	Risk-Informed Framework
39	CalPA	Set WMP-09	CalPA_Set WMP-09	8	CalPA_Set WMP-09_Q8	P. 129 of PG&E's WMP states: When conducting VM activities, PG&E employees and contractors must adhere to PG&E's Best Management Practices (BMP) where practicable. BMPs are considered practicable where physically possible and not conflicting with other regulatory obligations or safety considerations (GO 95 Rule 35 and Public Resources Codes 4292 and 4293) or emergency response situations. a) How do VM contractors determine when adherence to BMPs is not "physically possible." b) How does PG&E audit or review VM contractors to ensure they are adhering to BMPs where practicable? c) What actions does PG&E take if it determines that a VM contractor has not consistently adhered to BMPs where practicable? d) Please list all instances in 2022 where PG&E has determined that a VM contractor did not adhere to BMPs where BMPs were practicable, as defined above. e) Please list all instances in 2022 in which PG&E took action to reprimand or sanction a VM contractor for failing to adhere to BMPs where practicable.	The BMPs referenced on Page 129 of the WMP in TD-7102P-01-JA01, Best Management Practices (BMPs) are Vegetation Management's (VM) controls to ensure compliance with environmental compliance requirements. a) PG&E makes every effort to comply with the BMPs. If the risk of vegetation in relation to our assets and potential non-compliance with GO 95 Rules 18 & 35, PRCs 4292 or 4293, or NERC Standard FAC-003-04 is greater than the potential environmental risk the BMPs are designed to mitigate, then the priority vegetation work takes precedence, consistent with TD-7102P-17, VM Priority Tag Procedure and TD-7103P-09, Transmission VM Imminent Threat and Hazard Notification Procedure, and referenced in the following Figures provided in the WMP: • Page 518 – Figure PG&E-8.2.2-1: PG&E's VM Transmission Inspection Process • Page 520 – Figure PG&E-8.2.2-2: PG&E's VM Transmission Second Patrol Process • Page 522 – Figure PG&E-8.2.2-3: PG&E's IVM Process • Page 525 – Figure PG&E-8.2.2-4: PG&E's VM Distribution Inspection Process, • Page 527 – Figure PG&E-8.2.2-5: PG&E's VM Distribution Second Patrol Process • Page 810 – Figure PG&E-9.2.1-5: Priority 1 and Priority 2 Tree Tags Examples where PG&E VM contractors might determine that adherence to BMPs is not "physically possible", and tree work would take precedence include: • Limited Operating Periods (LOP), either due to weather/saturated soil conditions or potential biological impacts (i.e., nesting bird season) – our work is required year-round in order to comply with regulatory requirements; • Safety considerations – There may be instances where the only way to safely perform tree mitigation may impact protected environmental resources. b) PG&E reviews contractor BMP adherence through several methods, including: • PG&E's Environmental Management (EM) performs unannounced field audits of projects submitted for environmental review	Holly Wehrman	4/4/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	5.4.5	Overview of the Service Territory	Environmental Compliance and Permitting

39	CalPA	Set WMP-09	CalPA_Set WMP-09	8 Rev	CalPA_Set WMP-09_Q8 Rev	P. 129 of PG&E's WMP states: When conducting VM activities, PG&E employees and contractors must adhere to PG&E's Best Management Practices (BMP) where practicable. BMPs are considered practicable where physically possible and not conflicting with other regulatory obligations or safety considerations (GO 95 Rule 35 and Public Resources Codes 4292 and 4293) or emergency response situations. a) How do VM contractors determine when adherence to BMPs is not "physically possible." b) How does PG&E audit or review VM contractors to ensure they are adhering to BMPs where practicable? c) What actions does PG&E take if it determines that a VM contractor has not consistently adhered to BMPs where practicable? d) Please list all instances in 2022 where PG&E has determined that a VM contractor did not adhere to BMPs where BMPs were practicable, as defined above. e) Please list all instances in 2022 in which PG&E took action to reprimand or sanction a VM contractor for failing to adhere to BMPs where practicable.	The BMPs referenced on Page 129 of the WMP in TD-7102P-01-JA01, Best Management Practices (BMPs) are Vegetation Management's (VM) controls to ensure compliance with environmental compliance requirements. a) PG&E makes every effort to comply with the BMPs. If the risk of vegetation in relation to our assets and potential non-compliance with GO 95 Rules 18 & 35, PRCs 4292 or 4293, or NERC Standard FAC-003-04 is greater than the potential environmental risk the BMPs are designed to mitigate, then the priority vegetation work takes precedence, consistent with TD-7102P-17, VM Priority Tag Procedure and TD-7103P-09, Transmission VM Imminent Threat and Hazard Notification Procedure, and referenced in the following Figures provided in the WMP: • Page 518 – Figure PG&E-8.2.2-1: PG&E's VM Transmission Inspection Process • Page 520 – Figure PG&E-8.2.2-2: PG&E's VM Transmission Second Patrol Process • Page 522 – Figure PG&E-8.2.2-3: PG&E's IVM Process • Page 525 – Figure PG&E-8.2.2-4: PG&E's VM Distribution Inspection Process, • Page 527 – Figure PG&E-8.2.2-5: PG&E's VM Distribution Second Patrol Process • Page 810 – Figure PG&E-9.2.1-5: Priority 1 and Priority 2 Tree Tags Examples where PG&E VM contractors might determine that adherence to BMPs is not "physically possible", and tree work would take precedence include: • Limited Operating Periods (LOP), either due to weather/saturated soil conditions or potential biological impacts (i.e., nesting bird season) – our work is required year-round in order to comply with regulatory requirements; • Safety considerations – There may be instances where the only way to safely perform tree mitigation may impact protected environmental resources. b) PG&E reviews contractor BMP adherence through several methods, including: • PG&E's Environmental Management (EM) performs unannounced field audits of projects submitted for environmental review. • Where there have been noticeable trends for a particular Issue Category of BMP non-conformance, EM will occasionally perform focused field audits. • PG&E's vegetation management operations inspectors and program managers perform field observations that may include compliance with applicable laws and regulations, as well	Holly Wehrman	4/4/2023	4/12/2023	4/13/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	5.4.5	Overview of the Service Territory	Environmental Compliance and Permitting
40	CalPA	Set WMP-09	CalPA_Set WMP-09	9	CalPA_Set WMP-09_Q9	P. 526 of PG&E's WMP states, "The primary target for secondary patrols is HFTD and HFRA but exceptions and additional areas are included to appropriately address vegetation associated risks." P. 267 states, "Beginning in 2023, PG&E will use the annual review of AOC, that we committed to doing in RN_PG&E-22-09, to identify areas subject to Second Patrols." a) Is there a difference between "secondary patrols" and "Second Patrols" in the two passages quoted above? If so, please explain the difference(s). b) In 2022, did PG&E's secondary patrol cover the entire HFTD? Please explain your answer. c) In 2023, will PG&E's secondary patrol cover the entire HFTD? Please explain your answer. d) Is PG&E planning to cover fewer circuit miles with second patrols in 2023 than were covered in 2022? Please explain your answer.	a) In the paragraph on page 526 outlined above, the term "secondary patrols" is used synonymously with the use of "Second Patrols" and both terms refer to Second Patrol. "In accord with regulatory requirements and/or PG&E VM Second Patrol Procedure (TD-7102P-23), the VM Second Patrol program performs scheduled patrols approximately six months offset from the routine patrol on overhead primary and secondary distribution facilities. The primary target for secondary patrols is HFTD and HFRA but exceptions and additional areas are included to appropriately address vegetation associated risks." In the paragraph on page 267, the term "Second Patrols" also refers to Second Patrol. b) Yes, in 2022 PG&E's second patrol covered the entire HFTD area, with the exception of those areas that were impacted due to various constraints. PG&E can be constrained by environmental delays, individual customer issues, permitting delays/restrictions or operational holds, weather conditions, active wildfire, and accessibility of the area where system inspections have been identified. If the constrained work is compliance related, we work through our VM processes to resolve the roadblock and execute the work. This would include everything from securing a permit to rescheduling work timing due to field conditions. c) Yes, in 2023 PG&E's second patrol will cover the entire HFTD area with the exception of those areas that may be impacted due to various constraints. PG&E can be constrained by environmental delays, individual customer issues, permitting delays/restrictions or operational holds, weather conditions, active wildfire, and accessibility of the area where system inspections have been identified. If the constrained work is compliance related, we work through our VM processes to resolve the roadblock and execute the work. This would include everything from securing a permit to rescheduling work timing due to field conditions. d) Second Patrol areas for 2023 will be the same as 2022 but will be evaluated for potential modifications starting in 2024.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	8.2.2.2.2	Vegetation Management and Inspections	Distribution Second Patrol
41	CalPA	Set WMP-09	CalPA_Set WMP-09	10	CalPA_Set WMP-09_Q10	P. 342 of PG&E's WMP states, "In July 2021, PG&E launched a multi-year program to underground 10,000 distribution circuit miles in high wildfire risk areas." a) Since the July 2021 announcement of its 10,000 mile undergrounding program, has PG&E performed any studies to determine whether the planned scope of 10,000 circuit miles should be revised? b) Please provide any available studies, analyses, reports, or workpapers pertinent to your answer to part (a). c) If the answer to part (a) is no, please explain why not. d) Does PG&E plan to perform any studies or analyses during the 2023-2025 WMP period to determine whether 10,000 circuit miles is still the appropriate scope to target for undergrounding? e) If the answer to part (d) is yes, please describe the planned scope and timing of such studies. f) If the answer to part (d) is no, please explain why not.	a) Yes. PG&E determined that undergrounding approximately 10,000 miles will reduce approximately 70 percent of risk in the HFTD. We initially used the output from our Wildfire Distribution Risk Model (WDRM) version 2 to first identify the 10,000 miles. We then subsequently validated that this was the correct number of miles after the July 2021 announcement using the output from our updated WDRM v3. b) Please see the attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q010Atch01.xlsx" for the requested information on the WDRM v2 analysis. Based on the WDRM v2, the top 20% risk-ranked circuit segments are represented by 727 circuit segments. Shown in cell K730:M730, the cumulative overhead miles areapproximately 8,762 with a cumulative risk reduction of approximately 75%. Please see attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q010Atch02.xlsx" for the requested information on the WDRM v3 analysis. Based on WDRM v3, PG&E's 10,000 underground circuit miles is represented by approximately 8,100 overhead miles, which is also equal to approximately 75% risk reduction. c) Not applicable, please see the response to subparts (a) and (b) above. d) PG&E's undergrounding plan will continue to evolve based on changing risk. We plan to update our risk model annually. We will continue to review the information in our updated models which will contribute to our thinking/understanding of the risk and the scope of the work. Additionally, we will outline our future plans in more detail in our SB884 filing which we plan to file later in 2023.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	2	N/A	8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution
42	CalPA	Set WMP-09	CalPA_Set WMP-09	11	CalPA_Set WMP-09_Q11	P. 969 of PG&E's WMP states, "on average, it takes 1.25 UG install miles to replace 1 OH mile. However, at times, this multiplier can be 2-3 times greater." Does PG&E's target of 10,000 miles of undergrounding refer to the number of OH circuit-miles to be moved underground, or the number of underground circuit-miles to be installed?	The 10,000 mile target refers to the number of miles of underground conductor and aligned with the assumption of removing approximately 8,100 overhead circuit miles.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22-34 – Revise Process of Prioritizing Wildfire Mitigations
43	CalPA	Set WMP-09	CalPA_Set WMP-09	12	CalPA_Set WMP-09_Q12	a) What is PG&E's current forecast cost per circuit-mile for undergrounding projects completed in the second half of 2025? b) Please provide workpapers to support your answer to part (a).	a) PG&E did not provide a forecast cost per circuit miles for undergrounding projects completed specifically in the second half of 2025 in its WMP. However, PG&E did provide a target unit cost (cost per circuit mile) by year for undergrounding projects through our 2023 GRC Reply Brief (A. 21-06-021): [IMAGE OF TABLE 4-11: SYSTEM HARDENING UNDERGROUND - PG&E'S ORIGINAL AND JUSTUSTED AVERAGE UNIT COST FORECAST(a) ($MILLIONS)] b) PG&E's unit cost forecast is a target value based on a strategy to reduce unit costs over time that is not based on a specific calculation.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution
44	CalPA	Set WMP-09	CalPA_Set WMP-09	13	CalPA_Set WMP-09_Q13	a) What is PG&E's forecast RSE for undergrounding completed in the second half of 2025? b) Please provide workpapers to support your answers to part (a).	a) PG&E does not forecast an RSE for undergrounding projects planned to be completed specifically in the second half of 2025 in its WMP. However, in the 2023 GRC, PG&E provided an RSE of 5.4 in 2025 for underground system hardening (A. 21-06-021, Exhibit PG&E-4, Chapter 3, p. 3-6, Table 3-1). b) Please see attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q013Atch01.xlsm" for the requested information (on the "RSE Results" tab, cell J12 for the 2025 Undergrounding RSE with supporting data on the other tabs). Comprehensively, inputs to support the RSE Results tab are based on the following tabs to compute the RSE: • 1-Program Exposure – Identifies the number of Overhead miles replaced worked per year across the tranches of the Wildfire Risk. • 2-Program Cost – Identifies the programmatic costs per year • 3- Eff- Freq Programs – Identifies the programmatic effectiveness by driver and subdriver for each mitigation.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution

45	CalPA	Set WMP-09	CalPA_Set WMP-09	14	CalPA_Set WMP-09_Q14	a) What is PG&E's current forecast cost per circuit-mile for covered conductor projects completed in the second half of 2025? b) Please provide workpapers to support your answer to part (a).	a) PG&E does not forecast costs per circuit-mile for covered conductor projects in its WMP. However, PG&E did provide a unit cost of $1.678 million per mile for overhead hardening in 2025 in its 2023 GRC (A. 21-06-021, Exhibit PG&E-4, Workpaper 4-28, line 18). b) Please see attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q014Atch01.pdf" for the requested information.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	8.1.2.5	Grid Design and System Hardening	Traditional Overhead Hardening –Transmission Conductor and Distribution
46	CalPA	Set WMP-09	CalPA_Set WMP-09	15	CalPA_Set WMP-09_Q15	a) What is PG&E's forecast RSE for covered conductor system hardening completed in the second half of 2025? b) Please provide workpapers to support your answers to part (a). Question 16	a) PG&E does not forecast an RSE for covered conductor system hardening for the second half of 2025 in its WMP. However, in the 2023 GRC, PG&E provided an RSE of 5.8 in 2025 for overhead system hardening (A. 21-06-021, Exhibit PG&E-4, Chapter 3, p. 3-6, Table 3-1). b) Please see attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q013Atch01.xlsm" for the requested information.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	0	N/A	8.1.2.5	Grid Design and System Hardening	Traditional Overhead Hardening –Transmission Conductor and Distribution
47	CalPA	Set WMP-09	CalPA_Set WMP-09	16	CalPA_Set WMP-09_Q16	In response to data request CalAdvocates-PGE-2023WMP-03, question 7c, PG&E states, "The primary approach for selecting miles used two risk prioritization methodologies: (1) Top 20 percent circuit segments based on the 2021 WDRM v2; and (2) the [Wildfire Feasibility Efficiency (WFE)]-ranked circuit segments based on the 2022 WDRM v3 and considering undergrounding feasibility." Provide an Excel table of the WFE-ranked circuit segments based on the 2022 WDRM v3, as described above. For each circuit segment, provide the following attributes as columns: a) Circuit name b) Circuit ID number c) Circuit segment name d) WDRM v3 risk score e) Feasibility factor f) WFE score as defined on p. 969 of PG&E's WMP g) WFE ranking	Please see attachment "WMP-Discovery2023_DR_CalAdvocates_009-Q016Atch01_CONF.xlsx" for the requested information from data request CalAvocates PGE-2023WMP-03, question 7c (projects identified for possible undergrounding in the 2023-2026 timeframe). Please see column M that shows the applicable risk model used for scoping the project (WDRM v2, WDRM v3). a) Please see column N of the attachment. b) Please see column O of the attachment. c) Please see columns P and S of the attachment. d) Please see column ADof the attachment. e) Please see column W of the attachment. f) Please see column AE of the attachment. g) Please see column AF of the attachment.	Holly Wehrman	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_009.zip	1	N/A	7.2	Wildfire Mitigation Strategy Development	Wildfire Mitigation Strategy
48	CalPA	Set WMP-10	CalPA_Set WMP-10	1	CalPA_Set WMP-10_Q1	Table 8-3 on p. 332 of PG&E's WMP states that PG&E will make capable for Down Conductor Detection (DCD): • 500 devices in 2023, • 400 devices in 2024, and • 250 devices in 2025. a) Please explain the reasoning for the decreasing number of devices made capable for DCD from 2023-2025. b) Approximately how many circuit miles in the HFTD will be protected by DCD at the end of 2025?	a) DCD is capable of seeing from the device to "end of line", therefore we are able to provide DCD protection on most eligible High Fire Risk Area line miles by the end of 2023, then supplementing that coverage in 2024 and 2025, including in the EPSS Buffer area. The number of devices decrease in 2024 and 2025 because the line miles covered in 2024 and 2025, including EPSS Buffer area are less than the line coverage in eligible HFRA for 2023. b) We anticipate approximately 21,000 circuit miles in HFRA will be protected by DCD at the end of 2025.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.1.2	Grid Design, Operations, and Maintenance	Targets
49	CalPA	Set WMP-10	CalPA_Set WMP-10	2	CalPA_Set WMP-10_Q2	Table 8-5 on p. 336 of PG&E's WMP shows a forecast reduction in the number of EPSS events of one to two percent annually from 2022 to 2025. a) What factors does PG&E expect to contribute to the reduction in the number of EPSS events discussed above? b) Why is PG&E's forecast reduction in the number of EPSS events linear across the 2023-2025 period? c) Please provide any available workpapers that support PG&E's forecasts regarding the number of EPSS events annually in 2023-2025.	a) For 2023, factors contributing to the reduction in the number of EPSS related outages are based on actions to install additional Line Reclosers (LR) and Fuse Savers on the highest impacted protective zones to reduce the reliability impact. These will be installed in locations that are within the HFRA or protect equipment within the HFRA. The planned installs will provide reliability benefits on fuse tap lines within the scope of the EPSS program. PG&E will also undertake reliability mitigations intended to reduce outage frequency on those circuit protection zones (CPZs) that experienced the greatest number of outages while EPSS was enabled in 2022. This will include proactive vegetation management work incremental to existing vegetation management scope on CPZs that experienced vegetation caused outages in 2022. Reactive vegetation management work will also be conducted in-season, as needed based on escalated vegetation caused outages. Animal mitigation work will also be performed on CPZs that experienced avian or other animal contacts in 2022. b) With only one year of EPSS protection performance to review, we made a conservative estimate of the reliability improvement that could be realized based on the planned sectionalization and mitigation activities.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.13	Grid Design, Operations, and Maintenance	Performance Metrics Identified by the Electrical Corporation
50	CalPA	Set WMP-10	CalPA_Set WMP-10	3	CalPA_Set WMP-10_Q3	a) Does PG&E forecast a change in the average duration of EPSS events during the 2023-2025 period? b) If the answer to part (a) is yes, provide the expected average duration of EPSS events for 2023, 2024, and 2025. c) If the answer to part (a) is no, explain why not. d) Please provide any available workpapers that support PG&Es' forecasts regarding the duration of EPSS events in 2023-2025.	a) Not at this time. b) N/A c) We require more operating experience before being able to accurately forecast reduction in average duration for EPSS outages. We have lowered the target of four hours to 210 minutes in 2023. d) PG&E does not have any applicable workpapers available.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.13	Grid Design, Operations, and Maintenance	Performance Metrics Identified by the Electrical Corporation
51	CalPA	Set WMP-10	CalPA_Set WMP-10	4	CalPA_Set WMP-10_Q4	P. 358 of PG&E's WMP states, with regard to DTS-FAST: A prototype field test installation was completed on a 115kv tower in Martinez and a wood pole in Santa Cruz in 2021. The valuable lessons learned have been updated to streamline designs, increase scalability, and reduce costs. In 2022, we filed a non-provisional patent application for DTS-FAST. For 2023, we have no field installation plans but will be working through the patent examination process. a) Please provide data on the results of the field test installation in Martinez. b) Other than working through the patent examination process, what steps does PG&E plan to take in 2023 to further develop DTS-FAST? c) When does PG&E expect to begin additional DTS-FAST installations? d) Through the end of 2022, how much has PG&E spent on DTS-FAST? e) What portion of your response to part (d) is related to the patent application and examination process? f) What are your forecast costs for DTS-FAST through the 2023-2025 period? g) What portion of your response to part (f) is related to the patent application and examination process?	a) DTS-FAST is an integrated system of sensors and technologies that are established and available on the market, working together to mitigate wildfire risk. Testing focused on validating sensor functionality in wildfire and utility user scenarios, encompassing functional testing, environmental testing, and long-term resilience testing. Learnings were immediately applied to optimize sensor configuration. Key learnings from the Martinez installation and testing include: • Sensors – we installed over 25 devices and tested their intended functionality for accuracy and reliability. These are the types of tests performed: o Reproducibility testing verifies the consistency and reliability of sensor measurements by repeating measurements multiple times and checking the results for consistency. This test criterion ensures that the sensing device provides consistent and reproducible measurements. o Sensitivity testing evaluates the sensors' ability to detect and respond to small changes or variations in input. This is achieved by varying the input parameters and verifying if the sensor's output changes accordingly. o Range testing evaluates the sensor's operating range by evaluating its performance across its specified range of operation. This involves testing the sensor at its minimum and maximum limits, as well as at different points within its operating range. o Stability tests evaluates the sensor's stability over time by monitoring its output for a prolonged period under normal operating conditions. This can help identify any drift or instability in sensor readings. o Environment played a major factor in the sensor's performance under different conditions that may affect its operation such as temperature, humidity, vibration, and electromagnetic interference. This can help ensure that the sensor is robust and reliable in real-world operating conditions. o Failure testing evaluates the sensor's response to failure conditions, such as sensor malfunction, signal loss, or power failure, and verify if the sensor's behavior is appropriate and safe during such scenarios. o The key takeaway is to test multiple brands of similar devices to verify vendor specifications on operating range and performance. During our testing, approximately 50%	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.2.6.2	Grid Design and System Hardening	Emerging Grid Hardening Technology Installations and Pilots

52	CalPA	Set WMP-10	CalPA_Set WMP-10	5	CalPA_Set WMP-10_Q5	P. 357 of PG&E's WMP states, "If deployed, DTS-FAST could have a significant impact on wildfire risk where deployed." a) Please quantify the phrase "a significant impact on wildfire risk" in the above quote. b) Please provide any workpapers or studies to support your answer to part (a).	a) Please quantify the phrase "a significant impact on wildfire risk" in the above quote. We do not have enough data to provide a precise quantification of the impact at this time. The deployed sensor system is designed to actively monitor the environment for potential wildfire risks. For instance, the sensors are capable of detecting vegetation that has fallen onto power lines or are leaning against it. When such an event is detected, the sensor will trigger an alarm at the location, allowing for operational decisions to be made such as de-energizing the line before a potential fire hazard arises. The key differentiator of this system is that it is deployed outside of the substation, directly in high fire threat areas, and could detect risks before any electrical fault has occurred. b) "Please provide any workpapers or studies to support your answer to part (a)." We do not have any workpapers or studies to provide. The sensor's detection speed is almost instantaneous or within one second and the actual delivery of the alarm message to operations is dependent on the fastest telecommunications service at the sensor site. In our lab, we detected falling vegetation against energized conductors within one second. Our field testing with good telecommunications service ranged from 4 to 8 seconds.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.2.6.1	Grid Design and System Hardening	Emerging Grid Hardening Technology Installations and Pilots
53	CalPA	Set WMP-10	CalPA_Set WMP-10	6	CalPA_Set WMP-10_Q6	P. 464 of PG&E's WMP states, "In 2022, we reduced the Customer Average Interruption Duration Index (CAIDI) and Customers Experiencing a Sustained Outage (CESO) for customers served by EPSS-capable lines when compared to data from the 2021 program pilot." a) Please provide the CAIDI value for all HFTD customers for each year from 2018-2022. b) Please provide the CESO value for all HFTD customers for each year from 2018-2022.	Please see "WMP-Discovery2023_DR_CalAdvocates_010-Q006Atch01.xlsx."	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	1	N/A	8.1.8.1.1	Grid Operations and Procedures	Equipment Settings to Reduce Wildfire Risk
54	CalPA	Set WMP-10	CalPA_Set WMP-10	7	CalPA_Set WMP-10_Q7	P. 464 of PG&E's WMP states, "By the end of 2022, we responded to 89 percent of outages on EPSS-enabled lines within 60 minutes, responding on average within 42 minutes." The statement above refers to results achieved "by the end of 2022." What time period is this data drawn from? In other words, the 42-minute figure is an average of response times in what period of time?	The 42-minute figure is an average of the response time to all outages on EPSS-protected circuits in 2022 since EPSS Outage Response time tracking began. The timeframe covered is May 23, 2022 – December 31, 2022.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.8.1.1	Grid Operations and Procedures	Equipment Settings to Reduce Wildfire Risk
55	CalPA	Set WMP-10	CalPA_Set WMP-10	8	CalPA_Set WMP-10_Q8	P. 464 of PG&E's WMP states, "By the end of 2022, we responded to 89 percent of outages on EPSS-enabled lines within 60 minutes, responding on average within 42 minutes." For all outages on EPSS-enabled lines in all of 2022, provide the following: a) Average response time b) 25th percentile response time c) Median (50th percentile) response time d) 75th percentile response time e) Longest response time	2022 EPSS OUTAGE RESPONSE AVERAGE RESPONSE TIME 25TH PERCENTILE RESPONSE TIME MEDIAN (50TH PERCENTILE) RESPONSE TIME 75TH PERCENTILE RESPONSE TIME LONGEST RESPONSE TIME 42 Minutes 27 Minutes 39 Minutes 52 Minutes 408 Minutes Note: Table values reflect available data since EPSS Outage Response time tracking	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.8.1.1	Grid Operations and Procedures	Equipment Settings to Reduce Wildfire Risk
56	CalPA	Set WMP-10	CalPA_Set WMP-10	9	CalPA_Set WMP-10_Q9	P. 464 of PG&E's WMP states, "By the end of 2022, we responded to 89 percent of outages on EPSS-enabled lines within 60 minutes, responding on average within 42 minutes." For the 11 percent of outages (noted in this quote) on EPSS-enabled lines that PG&E did not respond to within 60 minutes, provide the following: a) Average response time b) Longest response time.	2022 EPSS OUTAGE RESPONSE AVERAGE RESPONSE TIME FOR RESPONSES > 60 MINUTES LONGEST RESPONSE TIME 95 Minutes 408 Minutes Note: Table values reflect available data since EPSS Outage Response time tracking began. The timeframe for tracking in 2022 was May 23, 2022 – December 31, 2022.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.8.1.1	Grid Operations and Procedures	Equipment Settings to Reduce Wildfire Risk
57	CalPA	Set WMP-10	CalPA_Set WMP-10	10	CalPA_Set WMP-10_Q10	P. 441 of PG&E's WMP states, "We plan to implement a QA [quality assurance] program for systems inspections." a) Please discuss the progress PG&E has made so far in implementing a QA program for systems inspections. b) When does PG&E expect to implement a QA program for systems inspections? c) Please describe the main features of the QA program that PG&E plans to implement. d) What are the probable limitations of the QA program that PG&E plans to implement?	a) The function that has been historically referred to as "quality verification" is in fact a component of the QA program for systems inspections and will be referred to as "QA" rather than "QV" moving forward. We have made significant progress on this work and the program has been implemented. b) The program has already been implemented. c) Main features are described in Section 8.1.6.1 of our 2023 WMP: "A Quality Verification (QV) function will be performed in 2023 that provides analysis and program value. The function historically referred to as QV is included within the QA program referred to above. QV uses a statistically valid sample of QC complete locations. Sample sizes are based on completed QC work. QV audits will be ongoing so long as QC is operational. All QV discrepancies are documented in the electronic QC Review Assessment forms. Dashboards are used to show trends and any discrepancies using pre-determined metrics. Stakeholders use these QC Dashboard results to provide WMP-Discovery2023_DR_CalAdvocates_010-Q010 Page 2 training and coaching and to develop corrective actions for training material/procedure updates." d) We are not presently aware of any probable limitations of the QA program. However, as	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.6.1	Quality Assurance and Quality Control	Quality Assurance
58	CalPA	Set WMP-10	CalPA_Set WMP-10	11	CalPA_Set WMP-10_Q11	P. 441 of PG&E's WMP states, "We plan to update existing QV [quality verification] procedures for systems inspections." a) Please discuss the progress PG&E has made so far in updating existing QV procedures for systems inspections. b) When does PG&E expect to complete its updates to existing QV procedures for systems inspections? c) Please describe how the planned updates will improve PG&E's existing QV procedures.	a) The quality team is currently undergoing a thorough review of the prior QV procedures as an initial step in the development of updated procedures. b) Expected completion of this work is the end of the third quarter of 2023. c) The planned updates improve upon PG&E's existing QV procedures by accurately reflecting the QV role in the holistic systems inspection throughput.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.6.1	Quality Assurance and Quality Control	Quality Assurance

59	CalPA	Set WMP-10	CalPA_Set WMP-10	12	CalPA_Set WMP-10_Q12	P. 450 of PG&E's WMP states, "Along with reducing wildfire risk related to backlog ignition risk-tags in HFTD/HFRA, new (EC notifications identified after January 1st, 2023) HFTD/HFRA ignition risk tags will be completed in compliance with GO 95 rule 18 timelines, barring external factors." a) What external factors does PG&E anticipate may prevent it from completing HFTD/HFRA ignition risk tags in compliance with GO 95 Rule 18 timelines? b) For each external factor identified in part (a), what is PG&E's plan to mitigate the effect the external factor may have? c) During the period from 2023-2025, will PG&E complete new ignition risk tags in compliance with GO 95 rule 18 timelines for those ignition risk tags located outside the HFTD/HFRA? Please explain your answer.	a) Please refer to page 831 of our 2023 WMP which defines external factors as follows: "External Factors represent reasonable circumstances which may impact execution against targets, objectives, other work, or performance metrics including, but not limited to, physical conditions, landholder refusals, environmental delays, customer refusals or non-contacts, permitting delays/restrictions, weather conditions, removed or destroyed assets, active wildfire, exceptions or exemptions to regulatory/statutory requirements, and other safety considerations." Specifically, each of the items identified in the definition could apply to our asset tag work and cause our work to be delayed. As an example, the severe and repeated storms in the first quarter of 2023 have caused delays in performing our asset tag work and fall under the category of external factors. b) Physical conditions: To mitigate the impacts of physical conditions, we work with our leadership and strategy teams to create solutions specifically tailored to the individual situation. However, despite these efforts, there are times where we must simply await the removal of the external physical condition in order to proceed with work as there is no other reasonable alternative. WMP-Discovery2023_DR_CalAdvocates_010-Q012 Page 2 Landholder refusals: To mitigate the impacts of landholder refusals, we work our local government affairs team to help resolve the refusals in the most efficient way possible so that we can proceed with work. Environmental delays: To mitigate the impacts of environmental delays, we work with our leadership and strategy teams to create solutions specifically tailored to the individual situation. However, despite these efforts, there are times where we must simply await the removal of the external environmental conditions in order to proceed with work as there is no other reasonable alternative. Customer refusals or non-contacts: To mitigate the impacts of customer refusals or non-contacts, we work with our local government affairs team to resolve the refusals and to proceed with the work. Permitting delays/restrictions: To mitigate the impacts of permitting delays and restrictions, we work with our leadership and government affairs teams to have the delays or restrictions resolved as expeditiously as possible and to proceed with work.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.7.2	Open Work Orders	Open Work Orders – Distribution Tags
60	CalPA	Set WMP-10	CalPA_Set WMP-10	13	CalPA_Set WMP-10_Q13	Table PG&E-8.1.7-1 on p. 451 of PG&E's WMP states, "Field Safety Reassessment (FSR) performed annually on time dependent tags to confirm Priority E Notification has not escalated to Priority A or B." a) Under PG&E's current procedures and policies, can a FSR de-escalate the priority of a notification? Please explain your answer. b) Under PG&E's current procedures and policies, can a FSR be used to extend the due date of a notification beyond GO 95 rule 18 timelines? Please explain your answer.	a) The FSR program is focused on identifying conditions that have escalated to Priority A and B. Inspectors can also recommend that a notification be canceled if they believe it was created in error, is no longer required according to PG&E's guidelines, or if they find all work identified on the EC is already completed in the field. In certain instances, the FSR can lead to a downgrade in tag priorities. For example, if the tag gatekeeper disagrees with an inspector recommended escalations or cancellation, the gatekeeper can downgrade the tag rather than cancel or escalate it. PG&E continues to assess its practices and procedures on FSRs and evaluate what alternatives are provided to inspectors and tag gatekeepers. b) FSRs do not extend a notification's required end date beyond GO 95 rule 18 timelines. PG&E's current execution of EC notifications does not meet GO 95 Rule 18 compliance 100% of the time. FSRs are an internal containment activity PG&E performs to mitigate potential safety impacts.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.7.2	Open Work Orders	Open Work Orders – Distribution Tags
61	CalPA	Set WMP-10	CalPA_Set WMP-10	14	CalPA_Set WMP-10_Q14	Table PG&E-8.1.7-3 on p. 456 of PG&E's WMP has empty cells in the HFRA row. a) Please explain why the HFRA row is empty in the above table. b) Please provide an updated version of PG&E-8.1.7-3 with the HFRA row filled in.	The HFRA line in Table PG&E-8.1.7-3 was blank because PG&E was unable to segregate the HFRA tags. Table 1 below shows the number of open distribution work orders categorized by HFTD tier from Q1 2020 through Q4 2022 and is tied to the QDR data provided to Energy Safety on March 1, 2023. The numbers in the March 1, 2023 QDR are different from the numbers provided in Table-8.1.7-3 in PG&E's March 27, 2023 WMP submission. The numbers in the March 1, 2023 QDR are correct. Table 1 – Open Distribution Work Orders by HFTD Tier HFTD Area 2020 2021 2022 Buffer Zone 5 0 0 Non-HFTD 57,116 78,547 5,298 Tier 2 10,938 25,025 1,621 Tier 3 13,018 12,976 30,169 Zone 1	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.7.2	Open Work Orders	Open Work Orders – Distribution Tags
62	CalPA	Set WMP-10	CalPA_Set WMP-10	15	CalPA_Set WMP-10_Q15	In response to data request CalAdvocates-PGE-2023WMP-05, question 3, PG&E states, "There is an inherent QC process that is part of the drone inspection, but there is no outside group that is looking at QC." a) Please describe the inherent QC process for drone inspections. What are the main features of this inherent QC process? b) What types of problems or flaws in drone inspections can the inherent QC process identify? c) Please identify the five most common problems or flaws in drone inspections that the inherent QC process identified in 2022. d) What are the limitations of this inherent QC process?	a) There is a 100% review of all inspections that are part of the inspection process. The inspector completes the inspection and a spot check is performed for commonly missed items. b) Spot checks are performed for the commonly missed items that potentially caused a fire or ignition. c) The five most common problems identified in the QC process are: C-hooks, insulators, cotter pins, shoe issues, and structural issues. d) We have not identified any limitations of the QC process at this time.	Holly Wehrman	4/4/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_010.zip	0	N/A	8.1.3	Asset Inspections and Maintenance	N/A
63	TURN	001	TURN_001	1	TURN_001_Q1	1. Regarding ACI PG&E-22-34, which found that "PG&E's current process of prioritizing wildfire mitigations assigns a high priority to undergrounding and does not demonstrate adequate weight to risk model outputs or RSE estimates" and which detailed the showing that PG&E must make in this WMP to show the required progress: a. Does PG&E's 2023-2025 WMP or supporting documentation provide a comparison of the RSEs (either at a tranche level or more aggregated level) for undergrounding compared to the RSEs of alternative mitigation techniques, such as covered conductor? i. If so, please provide the relevant citations, identifying the specific content that provides this information by page number and specific paragraphs, tables or figures (i.e., not just a multi-range page citation). ii. If so, please describe what PG&E believes those RSE comparisons demonstrate. b. Referring to the third bullet under "Required Progress" on page 968 of PG&E's WMP, does PG&E's 2023-2025 WMP explain how PG&E incorporates RSE estimates and risk model outputs that compare undergrounding with alternative mitigation techniques, such as covered conductor, at a project level early in the decision-making process, to allow PG&E to adjust the scope and pace of PG&E's undergrounding program as necessary based on the analyses performed? i. If so, please provide the relevant citations, identifying the specific content that provides this information by page number and specific paragraphs, tables or figures (i.e., not just a multi-range page citation). ii. Whether or not this information is provided in PG&E's 2023-2025 WMP, please state whether, and if so, how PG&E incorporates RSE estimates and risk model outputs that compare undergrounding with alternative mitigation techniques, such as covered conductor, at a project level early in the decision-making process. Please provide all documents showing that this comparison of RSE estimates and risk model outputs is included in PG&E's decision-making process. c. Please explain whether and, if so, how PG&E's quantitative analysis takes into account the PSPS risk for a particular location when deciding whether to undertake an undergrounding project or an alternative mitigation technique in 3 that location. For example, all other things being equal, does undergrounding fare worse in the quantitative	a) No, PG&E's 2023-2025 WMP does not provide a comparison of the RSEs for undergrounding compared to the RSEs of alternative mitigations. However, this information, RSEs at the tranche and aggregated level for wildfire mitigations including undergrounding, is provided in PG&E's 2023 General Rate Case – in response to Energy Division data request ED_001. b) Yes, the 2023 WMP explains how PG&E performs this analysis. PG&E evaluated the outputs from its Wildfire Distribution Risk Models (WDRM) to determine the highest risk miles in its service territory. The primary approach for selecting system hardening miles used two risk prioritization methodologies: (1) the top 20 percent of circuit segments based on the 2021 WDRM v2; and (2) the Wildfire Feasibility Efficiency (WFE) ranked circuit segments based on the 2022 WDRM v3. PG&E uses the Simplified Wildfire RSE (SWRSE) or WFE in evaluating undergrounding projects. The SWRSE includes the components of the RSE,including wildfire risk and cost. In executing the system hardening program, PG&E first uses a scoping criterion that identifies the highest risk areas, and then selects the appropriate risk mitigation approach for that circuit which may include undergrounding, remote grid installation, line removal, or overhead hardening (depending on the local circumstances). Since late 2021, PG&E has prioritized undergrounding as the preferred approach to reduce the most system risk. Once a circuit is selected for undergrounding, PG&E evaluates each proposed circuit segment quantitatively and qualitatively to mitigate the maximum amount of risk and evaluate feasibility and executability. i. Please see Section 8.1.2.1, page 339, Overview of the Activity and Section 8.1.2.2, p. 342-343, Overview of the Activity for the requested information. ii. PG&E does not have documentation comparing different mitigation alternatives at the project level. PG&E uses the Simplified Wildfire RSE (SWRSE) or Wildfire Feasibility Efficiency (WFE) in evaluating undergrounding projects. The SWRSE includes the components of the RSE including wildfire risk and cost. PG&E uses the SWRSE to identify where it can most efficiently reduce risk given the terrain feasibility at a particular location. c) We currently do not use the PSPS risk in our quantitative decision-making when deciding whether to undertake an undergrounding project or an alternative mitigation. However	Tom Long	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_001.zip	1	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22-34 – Revise Process of Prioritizing Wildfire Mitigations

64	TURN	002	TURN_002	1	TURN_002_Q1	Please provide the attachment to the response to CalAdvocates-PG&E-2023WMP-06-007, which PG&E has labeled as confidential	Please see attachment "WMP-Discovery2023_DR_TURN_002-Q001Atch01CONF.xlsx" for the requested information.	Tom Long	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_002.zip	1	Yes	8.2.3	Vegetation Management and Inspections	Vegetation and Fuels Management
65	TURN	002	TURN_002	2	TURN_002_Q2	Please provide the attachment to the response to CalAdvocates-PG&E-2023WMP-06-008, which PG&E has labeled as confidential.	Please see attachment "WMP-Discovery2023_DR_TURN_002-Q002Atch01CONF.xlsx" for the requested information.	Tom Long	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_002.zip	1	Yes	8.2.3	Vegetation Management and Inspections	Vegetation and Fuels Management
66	TURN	002	TURN_002	3	TURN_002_Q3	Please provide the attachment to the response to CalAdvocates-PG&E-2023WMP-06-009, which PG&E has labeled as confidential.	The attachment to CalAdvocates-PG&E-2023WMP-06-009 was identical to the attachment provided for CalAdvocates-PG&E-2023WMP-06-008, so please refer to the attachment sent with Answer 002 of this data request response.	Tom Long	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_002.zip	0	N/A	2022 WMP Section 7.3.5.2	Vegetation Management and Inspections	Enhanced Vegetation Management
67	TURN	002	TURN_002	4	TURN_002_Q4	Please provide the 2023-2026 Undergrounding Workplan referenced on page 911 of PG&E's WMP and in footnote 209, which indicates that PG&E has labeled the Workplan confidential.	Please see "WMP-Discovery2023_DR_TURN_002-Q004Atch01_CONF.xlsx" for the requested information.	Tom Long	4/4/2023	4/7/2023	4/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_002.zip	1	Yes	Appendix D	Areas for Continued Improvement	ACI PG&E-22-16 – Progress and Updates on Undergrounding and Risk Prioritization
68	CPUC - SPD (Safety Policy Division)	002	CPUC - SPD (Safety Policy Division)_002	1	CPUC - SPD (Safety Policy Division)_002_Q1	Provide Attachment 2023-03-27_PGE_2023_WMP _R0_Appendix D ACI PG&E-22-16_Atch01_CONF (PG&E's 2023-2026 Undergrounding Workplan).	The CONFIDENTIAL attachment is being provided pursuant to the confidentiality declaration "DRU11407.003_Confidentiality Declaration.pdf". As requested, please see attachment "2023-03-27_PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_CONF.xlsx" attached.	Kevin Miller	4/4/2023	4/5/2023	4/4/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/SPD_002.zip	1	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22-16 – Progress and Updates on Undergrounding and Risk Prioritization
69	OEIS	001	OEIS_001	1	OEIS_001_Q1	Regarding PG&E's Tree Assessment Tool (TAT) Considering PG&E has discontinued its Enhanced Vegetation Management (EVM) program: a. How is PG&E using and planning to use its TAT? b. What inspection programs, if any, listed in Section 8.2.2 will use the TAT? c. If PG&E is not using its TAT, why has it discontinued its use?	a) The TAT was developed for the EVM program. The TAT will no longer be utilized as the EVM program concluded at the end of 2022. There are no current plans to utilize TAT to support other VM programs. b) No inspection programs listed in Section 8.2.2 of the 2023-2025 WMP plan to utilize the TAT at this time. Please see the response to part (a) of this question. c) The approach to tree inspections intends to follow the American National Standards Institute (ANSI) A-300 tree risk assessment standard per our field conditions and individual tree mitigation needs	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.2.2	Vegetation Management and Inspections	Vegetation Management Inspections
70	OEIS	001	OEIS_001	2	OEIS_001_Q2	Regarding PG&E'S Targeted Tree Species (TTS) Study and its Tree Assessment Tool (TAT) On page 784 of its 2022 WMP Update, PG&E states "The results of our Targeted Tree Species study in conjunction with improving the Tree Assessment Tool (TAT) will allow PG&E to more accurately identify and mitigate trees at elevated risk of failure, providing better visibility into risk." On page 579 of its 2023-2025 WMP, PG&E states "We have evaluated the recommendations in the final [Targeted Tree Species] report and continue to analyze them and consider our go-forward actions." a. Since the Target Tree Species study was completed on March 31, 2022, what actions has PG&E taken and will take to implement the nine recommendations? Respond specifically to each of the nine recommendations. b. What improvements have been and will be made to the TAT in response to these recommendations and generally (i.e., not in response to these recommendations)? c. If PG&E is not using or planning to use its TAT, did PG&E make changes/improvements to the TAT before it decided to end its use? If so, what were those changes/improvements?	a) Nine recommendations were provided to PG&E in the final report of the Targeted Tree Species Study that was completed in March 2022. PG&E has considered these recommendations and has taken action where we deemed appropriate. Below are the actions taken specific to each of the nine recommendations. Recommendation 1: Implement a rule set, harmonized with O&I procedures, for TAT to record at species level, with only specified genus allowed as aggregates. Adopt definitions presented in OEIS Geographic Information Systems Data Standard, DRAFT Version 2.2 in Section 3.4.3 Ignition (Feature Class), Page 71. Action Taken: An updated tree species list has been created that aggregates species at the genus level where appropriate. The updated tree species list is currently in process of being updated within One VM. Recommendation 2: Outage and/or ignition investigations should record accurate (dual-phase GPS) positions and be assigned to an EVM circuit segment that correlates to geo-rectified and spatially conflated PG&E EDGIS digital twin vector data. Similar to PG&E Transmission VM, where possible, associate the O&I tree with a LiDAR tree segmentation ID to further improve tree locational accuracy, and future tracking. Action Taken: Current electronic devices are able to capture accurate GPS positions due to technological improvements. Recommendation 3: Track TAT abatement species compositions and compare to outage and ignition species distributions. Note potential over-/under-abatements. Over time, this can serve as a programmatic KPI. Action Taken: Analysis for abatement species compositions compared to outage and ignition species distributions has been completed. Recommendation 4: Harmonize Outage and Ignition (O&I) data with TAT data parameters. • Fill out all O&I data fields • To the best extent possible, perform a retroactive TAT analysis on future O&I trees • Where possible, associate the O&I tree with a LiDAR tree segmentation ID Action Taken: We have developed an updated outage and ignition investigation form	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.2.3.6	Vegetation Management and Inspections	High-Risk Species

71	OEIS	001	OEIS_001	3	OEIS_001_Q3	Regarding PG&E's Focused Tree Inspections pilot a. Describe the current state of development for the pilot area, PG&E's Areas of Concern (AOC), and "polygons where focused vegetation inspection can be evaluated to determine appropriate counties to prioritize pilots(s)" (page 529) and the expected timeline for operationalization. b. Detail the criteria PG&E has and is using to develop the pilot area, PG&E's Areas of Concern (AOC), and "polygons where focused vegetation inspection can be evaluated to determine appropriate counties to prioritize pilots(s)" (page 529). c. What standards, processes, procedures, and tools are vegetation management personnel using/will use to perform tree risk assessments for this pilot? d. Will PG&E be using its One VM Tool for recordkeeping for this pilot? If not, what system will PG&E use for recording keeping for this pilot? e. Where is PG&E conducting its Focused Tree Inspections pilot? If PG&E has not yet begun its pilot, where will PG&E be conducting its Focused Tree Inspections pilot? f. How many circuit miles are in scope for the pilot? g. Was the pilot area previously in-scope for Enhanced Vegetation Management (EVM)? h. For each Circuit Protection Zone (CPZ) in the pilot area provide the: i. CPZ name. ii. Tree Weighted Risk Score from PG&E's most recent version of its EVM Tree-Weighted Prioritization List. iii. Tree Weighted Rank from PG&E's most recent version of its EVM Tree-Weighted Prioritization List. iv. Risk Tranche i. Does PG&E have a plan to continue its Focused Tree Inspections assuming the pilot is a success? If so, detail those plans, including how many circuit miles PG&E plans to inspect under this program in 2023 and 2024. j. Provide a GIS layer of the pilot area, PG&E's Areas of Concern (AOC),1 and "polygons where focused vegetation inspection can be evaluated to determine appropriate counties to prioritize pilots(s)" (page 529). As applicable, provide the following attributes for each polygon:	a) Four regional AOCs totaling 300 miles have been identified for the FTI Pilot, one in each of the following counties: Butte, Calaveras, El Dorado, and Napa. Pilot operationalization will begin in Q2 2023. b) AOCs were identified through a cross-functional effort utilizing county-based regional reviews to create polygons. Initial polygon development utilized Public Safety Specialist circuit-based evaluations, 30-year lookback of meteorology data, PSPS Lookback Polygons, PSPS Vegetation Damage locations, vegetation caused ignition data, and vegetation caused outage data. The completed AOC polygons were further analyzed against WDRMv3 model. This analysis supported the prioritization of AOC polygons which were selected as regional pilots. To bring value to overall future guidance and execution, the pilots need to capture regional variations and piloting only in highest risk AOC polygons would not support the significant learnings expected of the pilot. c) The approach to tree inspections pilots intends to follow the American National Standards Institute (ANSI) A-300 tree risk assessment standard per field conditions and individual tree mitigation needs. In addition, inspections will utilize ISA TRAQ Certified Arborists and supporting checklist for tree assessments. d) The pilot plans to use OneVM for execution. Business requirements to import the CPZ and/or targeted circuit segments in AOC polygons are under development as of 3-31-2023. We expect to standardize the data collection system for the pilot in April 2023. e) The FTI program will be piloted in four regional AOCs (Butte, Calaveras, El Dorado, and Napa Counties) beginning in Q2 2023. f) The FTI Pilot will consist of 300 miles within AOCs. g) Yes all circuit segments in HFTD were subject to annual EVM plans as prioritized by WDRM models. FTI program pilots are targeted in HFTD areas. Portions of FTI circuit segments have been subject to EVM mitigation in prior years and trees will be inspected consistent with the portions that were not previously mitigated with EVM. h) i. See attachment "WMP-Discovery2023_DR_OEIS_001-Q003_Atch001" for CPZ	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	3	N/A	8.2.2.2.5	Vegetation Management and Inspections	Focused Tree Inspections
72	OEIS	001	OEIS_001	4	OEIS_001_Q4	Regarding PG&E's Tree Removal Inventory On page, 528, PG&E states that is will "remove, or re-inspect trees identified in the EVM program." a. How does PG&E decide whether a tree should be 1) simply abated based on the existing risk assessment or 2) re-inspected/assessed prior to abatement? b. What standards, processes, procedures, and tools are vegetation management personnel using/will use to perform tree risk assessments for this program?	a) 1) Trees in the inventory with a TAT result of 'Abate' will abated based on the existing risk assessment. 2) All trees in the inventory with either no TAT result or a TAT result other than 'ABATE' are to be re-assessed by a Tree Risk Assessment Qualification (TRAQ) inspector to determine if abatement is appropriate. The inspection will determine our action based on tree condition and strike potential. b) The approach to tree inspections intends to follow the American National Standards Institute (ANSI) A-300 tree risk assessment standard per field conditions and individual tree mitigation needs. Inspectors re-assessing these trees will be required to possess a Tree Risk Assessment Qualification (TRAQ) through the International Society of Arboriculture (ISA), which is the same organization that certifies arborists. The result of the TRAQ assessment will be documented in the Vegetation	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.2.2.2.4	Vegetation Management and Inspections	Tree Removal Inventory
73	OEIS	001	OEIS_001	5	OEIS_001_Q5	Regarding Wood Management On page 536, PG&E says that its wood management program addresses large wood generated by PG&E's VM activities including post-fire work activities and wood generated by the EVM Program. a. Considering the EVM program has been discontinued, does the wood management program: i. Address large wood generated from the EVM program that has not already addressed? ii. Address large wood generated from PG&E's Tree Removal Inventory program, a remnant of the EVM program? b. How is large wood addressed when generated by other VM programs, including Distribution Routine/Second Patrol, VM for Operational Mitigations, and Focused Tree Inspections? c. When debris and/or large wood generated from PG&E's VM activities are left on site, what standards, protocols, processes, and procedures does PG&E use to ensure the debris and large wood are placed in a manner that does not: i. Block or hinder ingress or egress. ii. Infringe on PRC 4291 defensible space clearance. iii. Impede watercourses and drainages. iv. Conflict with property owner's interests. v. Otherwise create a hazard.	a) i. Yes. We will uphold commitments to manage wood generated by Enhanced Vegetation Management (EVM) tree work for customers who requested this service. ii. We will continue to fulfill wood management commitments that have been made to customers. b) PG&E offers wood management for our wildfire response and EVM programs. For all programs, wood greater than four inches in diameter is left in a safe position on site as it is legally the property of the landowner. As safety is PG&E's foremost core value, if wood poses a safety risk or environmental, cultural or access concern, crews will address the wood accordingly in coordination with tree work. c) Please see "WMP-Discovery2023_DR_OEIS_001-Q005Atch01.pdf" for PG&E's Wood Management procedure. i. Our crews are directed to ensure roadways are clear of tree debris or wood at the time of tree work. If wood poses an access concern, crews will address the wood accordingly in coordination with tree work. ii. Our Vegetation Management program is designed to ensure public safety and regulatory compliance. If customers have questions resulting from our work, they can reach out to our dedicated customer teams for support and resolution. iii. If wood poses an environmental concern, crews will address the wood in accordance with PG&E Best Management Practices implemented at the time of tree work. iv. As each property is different, we collaborate with the customer to find an optimal solution for the completion of our work on their property. v. At the time of all tree work, crews will either chip and spread, lop and scatter or remove wood debris that is smaller than four inches in diameter. Additionally, in alignment with PG&E's stand that everyone and everything is always safe,	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	1	N/A	8.2.3.2	Vegetation Management and Inspections	Wood and Slash Management
74	OEIS	001	OEIS_001	6	OEIS_001_Q6	Regarding Enhanced Clearances On page 537, PG&E says it "complies with Appendix E of GO 95," then goes on to describe the recommended minimum clearances set forth in Appendix E of GO 95. a. In the HFTD, does PG&E obtain the recommended clearances "where practicable"? b. If (a) does not describe how PG&E implements the recommended, "enhanced" clearances, clarify how PG&E operationalizes the recommended clearances set forth in Appendix E of GO 95.	a. The minimum clearance at time of work on Enhanced Vegetation Management is 12 feet as recommended in Appendix E of GO 95. Routine maintenance of previously cleared EVM spans is also 12 feet. Routine maintenance of all other spans is prescribed 2-3 years of clearance. b. Routine maintenance directs an inspector to prescribe 2-3 years of clearance which allows the inspector to account for tree species, location, and other conditions that affect growth	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.2.3.3	Vegetation Management and Inspections	Clearance
75	OEIS	001	OEIS_001	7	OEIS_001_Q7	Regarding Appendix B Items That Are Currently Optional Or "By Request" Only Provide the following, which are outlined in the 2023-2025 Wildfire Mitigation Plan Technical Guidelines, Appendix B. If the data is tabular (formulas, tables, graphs, charts) provide it in MS Excel. If the data is text-heavy, provide the information in MS Word. a. Detailed Model Documentation for each model and sub-model discussed in PG&E's response to Section 6.1.2 Summary of Risk Models (Technical documentation should be presented according to ASTM E 1472 – Standard Guide for Documenting Computer Software for Fire Models.). i. Include a list of assumptions and known model limitations according to ASTM E 1895 –Standard Guide for Determining Uses and Limitations of Deterministic Fire Models. ii. Present verification and validation documentation according to the SFPE's Guidelines for Substantiating a Fire Model for a Given Application or ASTM E 1355 – Standard Guide for Evaluating the Predicting Capability of Deterministic Fire Models. At a minimum, the documentation must include:2 (1) Purpose of the model/problem identification, (2) Model version, (3) Theoretical foundation, (4) Mathematical foundation, (5) External dependencies, (6) Model substantiation, and (7) Sensitivity b. Model Substantiation:3 i. For each model, provide documentation of the following model substantiation studies: (1) Validation data, (2) Model verification, (3) Model validation, and (4) Model calibration c. Additional Models Supporting Risk Calculation:4 i. For each additional model that supports the risk calculations, provide weather analysis and fuel conditions	The requested information is provided in the following four documents: • "WMP-Discovery2023_DR_OEIS_001-Q007Atch01.pdf" • "WMP-Discovery2023_DR_OEIS_001-Q007Atch02CONF.pdf" • "WMP-Discovery2023_DR_OEIS_001-Q007Atch03CONF.pdf" • "WMP-Discovery2023_DR_OEIS_001-Q007Atch04CONF.pdf"	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	4	N/A	Appendix B	Supporting Documentation for Risk Methodology and Assessment Definitions	Detailed Model Documentation

76	OEIS	001	OEIS_001	8	OEIS_001_Q8	Regarding Comprehensive System Diagram for All Risk Models Used Provide comprehensive system diagrams in MS Visio or PPT for all risk models. 1. A comprehensive diagram for operational models and 2. A comprehensive diagram for planning models. Section 6.1.2, Summary of Risk Models, asks for a summary of risk models in table form with specific fields. Section 6.2.1, Risk and Risk Component Identification, asks for a chart that demonstrates the components of overall utility risk. This request is comprehensive of all models that work together in the Decision-Making Framework (DMF). The requested diagram should show: a. Interaction between the models presented graphically (e.g., inputs and outputs coming to and going from models to other models), b. Organization with the use of swimlanes where applicable, c. Starting and ending points, d. Decisions and process flows, e. Use of a legend and colors to classify inputs/output types and model-to-model interactions, and f. The full cycle of models working together and creating feedback for model adjustments		Colin Lang	4/5/2023	4/24/2023					6.1.2	Risk Methodology and Assessment	Summary of Risk Models
77	OEIS	001	OEIS_001	9	OEIS_001_Q9	Regarding Portfolio Level Risk Analysis and Risk Spend Efficiency a. Provide an example of how risks are aggregated to a portfolio, and if and how interdependencies between the risks are explicitly captured in the portfolio. Response should be provided in Excel. Also include the level of organization for the portfolio (e.g., asset, geographical or business unit) b. Are tail-risks calculated on a portfolio of risks? If so, provide an example. c. Are probability distributions and interdependencies used as inputs to outputs for the bowties used in PG&E's WMP submission (see examples present in Appendix B)? If so, provide an example using the bowtie charts presented in PG&E's Appendix B submission. As appropriate, response should be provided in Excel. d. Provide an example of how risk spend efficiency (RSE) deals with interdependent risks, and mutually exclusive risks. As appropriate, response should be provided in Excel. e. Is RSE calculated for both average and tail? If so, provide an example. Response should be provided in Excel.	a) Based on the Wildfire Distribution Risk Model, which is based on circuit segments, circuit segments are aggregated to the enterprise wildfire risk model to calculate mitigation program benefits at the portfolio level. The tranches, in this case, are broken down by quintiles of likelihood of risk event (LoRE) and consequence of risk event (CoRE). Please see "WMP-Discovery2023_DR_OEIS_001-Q009Atch01.xlsm", which is PG&E's 2023-2026 wildfire bowtie used for the GRC,where we aggregated our distribution risk model to the LoRE and CoRE tranches to calculate risk at a portfolio level. This level of organization is based on the risk at the circuit protection zone level. b) Tail risks are captured as part of the enterprise risk assessment process and represented as probabilistic distributions of consequence. c) Yes, please see "WMP-Discovery2023_DR_OEIS_001-Q009Atch02.xlsm." The inputs listed in Tab 6-Conseq are the probability distributions that feed into the bowtie analysis, and its outputs are shown in "WMP-Discovery2023_DR_OEIS_001-Q009Atch01.xlsm referenced in response to part a). d) Risk Spend Efficiency for EPSS includes the risk reduction tied to the wildfire risk but is interdependent with the Distribution Overhead asset risk, which increases due to the reliability impacts EPSS causes. The RSE would capture both the risk reduction of wildfire and increased risk of asset failure and reliability. e) The RSE is calculated as a representation of average, but the consequence values are scaled in a non-linear fashion to capture the tail risk. In accordance with D.18-12-014, PG&E calculates an RSE using the expected value of the MAVF, i.e., the expected value of the distribution of consequences after they have been converted to Scaled Units by the Scaling Function. PG&E does not separately calculate an RSE based on tail statistics (e.g. tail average). Instead, PG&E's non-linear Scaling Function effectively amplifies the consequences of tail events such that the expected value of the MAVF will be higher	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	2	N/A	7.1.4.1	e Mitigation Strategy Develo	Identifying and Evaluating Mitigation
78	OEIS	001	OEIS_001	10	OEIS_001_Q10	Regarding Cost-Benefit within and Overall Decision-Making Framework a. If projects are justified based on a multi-attribute value functions/cost basis, what threshold or hurdle is used? b. How is the chance that a project exceeds the threshold computed? c. If projects are justified based on a multi-attribute value functions/cost basis, what threshold or hurdle is used?	a) We do not have a specific threshold to justify projects. b) While we don't calculate a specific threshold for executing mitigations, PG&E prioritizes higher MAVF/cost locations for executing projects. We also develop risk buydown curves and implement projects at the higher end of the curve. The higher end of the curve represents the higher MAVF/cost values. c) As described in response to subpart a), we do not have a specific threshold or cutoff to justify projects.	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	7.1.4.2	e Mitigation Strategy Develo	Mitigation Initiative Prioritization
79	OEIS	001	OEIS_001	11	OEIS_001_Q11	Regarding PG&E's Response to ACI PG&E-22-10 PG&E describes an external study funded by California Energy Commission (CEC) grant EPC 18-026 to classify and identify areas with similar climate locations that already have weather stations, and areas with climate conditions that are not well measured by current stations. a. Provide the external party study which PG&E described and used to assess the statewide station similarity.	The weather optimization report was developed by a third party, Pyregence. Pyregence provided us with a draft copy of the report and instructed us not to distribute the document. Therefore, we would greatly appreciate Energy Safety's understanding in honoring this instruction. To this end, we recommend that Energy Safety contact the Pyregence team directly through the contact information provided below to obtain the draft report. This was the same process we used to obtain the report from Pyregence. Direct links to contacting Pyregence and the report home page are provided below. • https://pyregence.org/contact-us/ • https://pyregence.org/extreme-weather-and-wildfire-ct/weather-station optimization-report	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22--10 Justification of Weather Station Network Density
80	OEIS	001	OEIS_001	12	OEIS_001_Q12	Regarding PG&E's Response to ACI PG&E-22-09 a. PG&E states that "363 [circuits] dropped to the lower 80 percent" (p. 891). For each of these circuit segments, provide the following information via Excel document: i. Name/ID of CPZ ii. V2 mileage of circuit segment iii. V3 mileage of circuit segment iv. Categorization in which movement each circuit segment falls under, as outlined on p. 891 (i.e., large shift in wildfire consequence value and rank; large shift in circuit segment mileage and wildfire consequence; or shift in ignition probability) v. V2 overall risk ranking (including a footnote/written response of the total number of CPZs included in the ranking) vi. V2 overall risk score vii. V2 risk score broken out by: (1) Ignition probability (2) Wildfire consequence viii.V3 overall risk ranking (including a footnote/written response of the total number of CPZs included in the ranking) ix. V3 overall risk score x. V3 risk score broken out by: (1) Ignition probability (2) Wildfire consequence b. For the 8 circuit segments that moved due to ignition probability, describe how such ignition probability changed. c. PG&E states that "As a result of these changes, previously approved system hardening projects have not yet initiated construction on CPZs that are now ranked as much lower risk." (p. 893) Provide the following information on each of these projects via Excel document: i. Name/ID of CPZ ii. Mileage of project iii. Type of project (i.e., covered conductor, undergrounding)	Please see attachment WMP-Discovery2023_DR_OEIS_001-Q012Atch01.xlsx, tab "12.a Dropped v2 CPZs." b. The probability of ignition change was driven primarily by greater granularity in failure modes associated with assets in the probability calculation. Please see attachment WMP-Discovery2023_DR_OEIS_001-Q012Atch01.xlsx, tab "12.b Probability of Ignition" for specific details. c. As noted in the 2023-2025 WMP R1 (posted April 6, 2023), ACI PG&E-22-09, (p.891, under "Project Impacts"), "there were no projects that were de-prioritized from the changes implemented between V2 and V3 of the models." The statement referenced (on p.892, under "Project Impacts") is a quote from the ISM Quarterly report highlighting the previous model changes (V1 to V2) and noting how EVM and System Hardening approached this differently due to the associated timeframes with the work.	Colin Lang	4/5/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22--09 Evaluation of Model Reprioritization and Fire Rebuild in High-Risk Areas
81	OEIS	001	OEIS_001	13	OEIS_001_Q13	Regarding PG&E's Response to ACI PG&E-22-20 PG&E states that "Adding drones to the detailed GO 165 inspection slowed the inspection to roughly 20 to 25 poles per day, which is slower than both the stand-alone ground inspection as well as the image capture rate for both drone-only and helicopter-only" (page 920). a. Provide the daily inspection rates for stand-alone ground inspections, drone-only image capture, and helicopter-only capture.	Please see below for the requested information. Drone-only Heli-only Inspector + Drone Stand-alone GO 165 inspection Aerial Image capture (Structures/day/crew) 48 280.5* 20-25 N/A Inspection rate in field (structures/day/inspector) N/A N/A 20-25 25-30 Desktop Inspection rate (structures/day/inspector) 40-45 40-45 40-45 N/A *Note: the helicopter-only method can capture at a very rapid rate due to automatic image capture.	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22--20 Asset Inspection Drone Program Pilot

82	OEIS	001	OEIS_001	14	OEIS_001_Q14	Regarding PG&E's Asset Management Upgrades On page 433, PG&E states that "PG&E has significantly advanced our data management practices and the quality of our asset inventory (Asset Registry) database over the last two years by applying the International Organization for Standardization (ISO) 55001 standards." a. Do the upgrades to PG&E's asset inventory database include the location of each piece of equipment (what pole it is attached to) for the distribution system, and also includes the equipment's manufacturer, model ID, and when the equipment was placed into service? i. If yes, how is this being done? ii. If no, explain why this is not the case? b. PG&E relies on inspection results for making decisions on whether equipment should be replaced. Does PG&E ever replace equipment proactively based on the equipment reaching its lifecycle end, as determined by the manufacture or industry standards? i. If yes, what equipment is being replaced for these reasons and why? ii. If no, why doesn't PG&E monitor and replace equipment at the end of its lifecycle? iii. Does PG&E have different decision-making policies when it comes to replacing equipment in the HFTDs as opposed to the rest of PG&E's territory? iv. Of the distribution equipment that utilities are required to report on (capacitors, conductors, connectors, fuses, splices, arrestors, reclosers, and transformers) what percentage is still operating in the HFTDs because the equipment has passed inspection but is being used beyond its predicted lifecycle? c. Does PG&E track the performance of different types of equipment by manufacture and model information? i. If yes, how does PG&E track this information and what decisions are made based on this data? ii. If no, explain why is equipment performance not being tracked?	a) Our asset inventory database (Asset Registry) does include attribute fields for location (lat/long and/or identification of support structure ID for attached equipment), manufacturer, model ID (as appropriate), and installation date. These are considered critical data elements (CDEs) and data governance and data quality metrics are being established to track the associated data quality. i. We collect required asset attributes as part of the As-Built process, according to process and engineering standards. This includes the attributes listed above. PG&E has also implemented an Asset Registry Data Quality (ARDQ) program to identify Critical Data Elements (CDEs) and related data quality for critical asset types. Currently this has been applied to 12 Transmission and Distribution overhead asset types on a risk prioritized basis. Attributes captured include installation date, location, manufacturer, and model ID (as appropriate). Data quality rules being measured include completeness. This provides identification of data gaps, including attributes such as installation date, which can then be targeted for remediation. A number of initiatives are underway to remediate known gaps, including the Transmission Asset Information Collection (AIC) program. The ARDQ program is being extended to include additional asset types on a risk prioritized basis. Refer to 2023 WMP sections 8.1.5 Asset Management and Inspection Enterprise System(s) and ACI PG&E-22-33 – Progress on Filling Asset Inventory Data Gaps for further details. ii. Not applicable, please see the response to subpart (i) above. b) We do not replace equipment solely based on manufacturer or industry standard lifecycle ages. There are many other factors that can influence service life of equipment, such as environment, maintenance, life extension application, etc. i) Not applicable, please see the response to subpart (b) above. ii) We replace equipment based on condition. Lifecycle is not solely determined by manufacturer or industry information, but also depends on other factors, as explained in subpart (b) above, which influence asset replacement need. iii) We do not have different inspection criteria for assessing condition of assets in HFTD or non-HFTD areas. However, assets located within HFTDs are typically inspected at a higher frequency to increase understanding on wildfire ignition risk. Results from these inspections may prompt replacement work within HFTD locations. HFTD replacement work may also be	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.1.5	Asset Management and Inspection Enterprise System(s)	N/A
83	OEIS	001	OEIS_001	15	OEIS_001_Q15	Regarding PG&E's Enhanced Powerline Safety Settings (EPSS) Program a. On page 464, PG&E states "…also referred to as high impedance faults, we plan to engineer, program, and install the Downed Conductor Detection (DCD) algorithm on recloser controllers. We will also evaluate high impedance fault detection algorithms for circuit breakers in 2023 and beyond." Then on page 374, PG&E states that the DCD Utility Initiative will likely continue from 2023-2025. i. What is the prioritization process for deciding which circuits will receive the DCD algorithm? ii. Will the number of outages, due to EPSS de-energizations, be looked at to identify which circuits should receive the DCD algorithm first? b. In figure 8.1.8-4: CPUC REPORTABLE IGNITIONS IN HFTDS (page 468) PG&E shows that through December 31, 2022, there was a greater than 36 percent reduction in CPUC reportable ignitions in HFTD-areas compared to the overall 2018-2020 average. PG&E claims that this reduction is a direct result of enabling EPSS in HFTDs. i. Was this data adjusted for circuits that have been hardened with covered conductor or other mitigations? ii. Did PG&E associate the ignition data to each individual circuit that was enabled showing a direct connection to the result, or is this data an assumption that has been made by looking at the overall HFTD areas and the overall reportable ignitions? iii. Were weather and vegetation conditions factored into this data conclusion?	a) i) DCD algorithm installation was prioritized based on the addressable risk reduction from each DCD device using PG&E's WDRM v3 risk model and maximizing High Fire Risk Area (HFRA) electric distribution line mile coverage. Addressable risk reflects the devices and circuits that are capable of accepting the DCD algorithm. By the end of 2025, DCD is planned to be installed on approximately 21,000 HFRA miles. Circuit breakers and 4-wire circuits are not currently capable of receiving DCD. Mileage is subject to change due to undergrounding of overhead lines and additional grid configuration changes anticipated through 2025. a) ii) DCD is an enhancement to EPSS intended to identify low current, high impedance fault conditions in our high fire risk areas not currently fully mitigated by EPSS. As such, number of previous EPSS outages was not considered as part of the prioritization effort. b) i) On page 468 of the WMP we state that the 36% reduction in HFTD reportable ignitions was primarily driven by the effectiveness of the EPSS program. EPSS is understood to be the primary driver of this overall reduction given the scope and reach of the program. b) ii and iii) We determined the 2022 EPSS ignition reduction of 68% by comparing the CPUC reportable ignitions that occurred on primary distribution conductor in High Fire Threat Districts (HFTD) when EPSS was enabled with an annual average of ignitions on primary distribution conductor from 2018 – 2020, which was then weather-normalized to include only ignitions that occurred during conditions that met or exceeded EPSS enablement criteria.	Colin Lang	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/OEIS_001.zip	0	N/A	8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
84	CalPA	Set WMP-11	CalPA_Set WMP-11	1	CalPA_Set WMP-11_Q1	PG&E's Test Year 2023 GRC rebuttal testimony (Ex. PG&E-17 on July 11, 2022) states the following: Q 123 Does PG&E have experience with REFCL? A 123 Yes. PG&E initiated a REFCL pilot project in 2018 at the Calistoga substation. After initial positive tests, the Calistoga REFCL pilot demonstration was stalled due to the failure of the substation REFCL equipment. In addition, PG&E had difficulty obtaining replacement equipment from various overseas suppliers due to supply chain issues and the ongoing COVID-19 pandemic. Thus, the REFCL technology could not be fully evaluated beyond the initial testing because of the equipment failure and supply chain issues. More recently, PG&E has made progress on its REFCL pilot project including completing the changes to the substation equipment after encountering equipment failures. PG&E has performed successful staged fault tests of the REFCL system and is in the process of reviewing the test data to evaluate REFCL's wildfire risk reduction for ground faults on distribution circuits. PG&E is looking at opportunities for REFCL deployments in its distribution substations to mitigate wildfire risk and evaluating combinations of REFCL with EPSS and other mitigations.4 Regarding the Calistoga REFCL pilot demonstration, a) Please break down PG&E's annual spending on the Calistoga REFCL pilot demonstration since the project initiation in 2018: b) Please break down PG&E's annual spending on Major Work Category (MWC) 49R since the project initiation in 2018: c) Where are the costs in subpart (c) of this question recorded? Please provide the specific name(s) of the accounts and subaccounts, if applicable. d) What is the recovery mechanism for the costs in subpart (c) of this question? e) In the above quote, PG&E states that "[m]ore recently, PG&E has made progress on its REFCL pilot project including completing the changes to the substation equipment after encountering equipment failures." Since 2018, how much has PG&E spent on "changes to the substation equipment" and any other equipment changes in order to test or deploy REFCL at the Calistoga substation?	PG&E objects to parts (a) through (e) of this request as beyond the scope of this proceeding. This question relates to PG&E's 2023 General Rate Case (GRC) proceeding and has no enunciated connection to PG&E's WMP proceeding. Furthermore, Cal Advocates concurrently served an identical data request on PG&E in the GRC proceeding and PG&E will provide a response to this request in that proceeding as it is the more appropriate venue.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
85	CalPA	Set WMP-11	CalPA_Set WMP-11	2	CalPA_Set WMP-11_Q2	Referring to PG&E's Electric Preliminary Statement Part FY (Tariff Sheet No. 52259-E), the Electric Program Investment Charge Balancing Account (EPICBA) has three subaccounts: The EPIC Program Administered by PG&E Subaccount tracks the actual program expenses to the authorized EPIC program budgets pursuant to D.12-05-037, D.20-08-042, and D.21-11-028 through December 31, 2030 or as authorized by the Commission. The EPIC Program Administered by California Energy Commission (CEC) Subaccount tracks the actual program expenses encumbered and remitted to the CEC and program administration expenses remitted to the CEC to the authorized budget pursuant to D.12-05-037, D.20-08-042, and D.21-11-028 through December 31, 2030 or as authorized by the Commission. The New Solar Home Partnership (NSHP) Program administered by the CEC Subaccount tracks the actual remittances to the CEC, or to program applicants, to the authorized NSHP Program budgets pursuant to D.16-06-006 encumbered by June 1, 2018 or spent by December 31, 2021.5 Please complete the following table by stating recorded costs (disaggregated into capital expenditures and O&M expenses) in the PG&E subaccount and CEC subaccount from 2018 to 2022.	PG&E objects to this request as beyond the scope of this proceeding. This question relates to PG&E's 2023 General Rate Case (GRC) proceeding and has no enunciated connection to PG&E's WMP proceeding. Furthermore, Cal Advocates concurrently served an identical data request on PG&E in the GRC proceeding and PG&E will provide a response to this request in that proceeding as it is the more appropriate venue.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter

86	CalPA	Set WMP-11	CalPA_Set WMP-11	3	CalPA_Set WMP-11_Q3	PG&E's 2022 WMP, Section 7.1.E, Attachment 1 (Attch_Q3.pdf) states the following regarding the project status of EPIC 3.15—Proactive Wires Down Mitigation Demonstration Project (Rapid Earth Fault Current Limiter) as of February 25, 2022: Evaluation of additional substations for suitability of additional REFCL installations has begun but is pending results and learnings of the initial EPIC project before design or field work starts on additional sites. After an initial screening process, 25 distribution substations with circuits in HFTDs are candidates for potential REFCL deployments.6 a) As of March 27, 2023, what is the status of PG&E's "[e]valuation of additional substations for suitability of additional REFCL installations"? b) Given the status in subpart (a) of this question, please fill in the following table: c) Given the status in subpart (a) of this question, what are PG&E's spending plans on: i. MWC 49R, and ii. the REFCL pilot? d) As of March 27, 2023, what conclusions or findings has PG&E reached based on its "evaluation of additional substations for suitability of additional REFCL installations"? e) Please provide the date(s) when PG&E started "design or field work on additional sites." f) Please identify each such site referred to in (e) and state the applicable dates for each. g) PG&E states that "25 distribution substations with circuits in HFTDs are candidates for potential REFCL deployments." As of March 27, 2023, how many of PG&E's distribution substations with circuits in HFTDs are currently candidates for potential REFCL deployments? h) For each of the candidate substations included in your response to part (e), please fill in the following table:	PG&E objects to the portions of this request relating to Major Work Category (MWC) 49R as beyond the scope of this proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows: a. PG&E has not performed an evaluation of additional substations for suitability of additional REFCL installations since the previous list of 25 distribution substations. PG&E is still evaluating the technology in its demonstration project before making decisions about additional deployments. b. Given the ongoing evaluation described in response to subpart (a) above, our forecast as of 4/6/2023 is as follows: Year 2023 2024 2025 2026 Forecast Capital Expenditure for MWC 49R ($) $0 $0 $0 $0 Forecast O&M Expenses for MWC 49R ($) $0 $0 $0 $0 c. PG&E has no spending plans for MWC 49R in 2023 and limited spend to complete evaluation of the REFCL demonstration project under the EPIC budget. WMP-Discovery2023_DR_CalAdvocates_011-Q003 Page 3 d. REFCL is less suitable in substations which have a high percentage of underground cable circuit miles on the distribution circuits. Many of PG&E's substations serving three-wire circuits do not have physical space available for the REFCL equipment. Lastly, all the	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
87	CalPA	Set WMP-11	CalPA_Set WMP-11	4	CalPA_Set WMP-11_Q4	Referring to Exhibit PG&E-04, February 25, 2022, version, PG&E states the following regarding REFCL: Based on our initial testing and the successful implementation in Australia, PG&E has developed a short-term strategy to install REFCLs in HFTD areas. PG&E forecasts deploying REFCLs at an additional two substations each year, but these plans could change pending pilot results and integration with other enhanced automation and wildfire mitigation efforts described in this chapter. a) As mentioned above, PG&E "forecasts deploying REFCLs at an additional two substations each year, but these plans could change …" Have these plans changed? b) If your answer to part (a) is yes, please describe PG&E's current plans regarding the future deployment of REFCLs. c) Please identify the additional substations where PG&E plans on deploying REFCLs in: i. 2023, iii. ii.2024, iv. iii. 2025, and v. iv. 2026	a) Yes, our plans have changed over the past year from what was expressed in the quote cited above from our WMP. b) PG&E is not planning any REFCL deployments until after complete evaluation of the demonstration project and successful integration of the technology into normal operations. PG&E is evaluating its portfolio of wildfire risk mitigations. c) As described in response to subpart (b), no additional substations are planned for REFCL deployment at this time.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
88	CalPA	Set WMP-11	CalPA_Set WMP-11	5	CalPA_Set WMP-11_Q5	Referring to Exhibit PG&E-17, p. 4.3-6, Table 4.3-3, line 6, served on July 11, 2022: Line 6 of the above table indicates that PG&E forecasts the capital expenditures to be $17.331 million in 2023, $17.800 million in 2024, $18.280 million in 2025, and $18.774 million in 2026. Given the current status of PG&E's evaluation of additional substations for suitability and PG&E's plans for future deployment of REFCLs, as of March 27, 2023, please indicate any adjustment to the forecast capital expenditures by completing the table below:	Please see the table below for the requested information. Year 2023 2024 2025 2026 Forecast of MAT 49R as of July 11, 2022 $17.331MM $17.800MM $18.280MM $18.774MM Forecast of MAT 49R as of March 15, 2023 $0 $0 $0	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
89	CalPA	Set WMP-11	CalPA_Set WMP-11	6	CalPA_Set WMP-11_Q6	In December 2021, PG&E presented at the EPIC Symposium. See Attch_Q6_EPIC_Presentation.pdf. The presentation slides state that: Rapid Earth Fault Current Limiter (REFCL) technology is an extension of resonant grounding at a distribution substation to neutralize ground fault current and pre[v]ent a spark. REFCL has been successfully deployed in Australia to reduce risk of fire from ground faults, but their substation designs are different from PG&E's. One type of REFCL is known as Ground Fault Neutralizer (GFN). REFCL could be applied to approx. 80% of PG&E HFTD distribution circuit miles (3-wire circuits). a) Is the statement quoted above accurate? b) If the answer to part (a) is no, please provide any needed corrections.	PG&E objects to this request as beyond the scope of this proceeding. Notwithstanding and without waiving this objection, PG&E responds as follows: a) Yes, this statement remains an accurate high-level description. b) Not applicable, as described in response to subpart (a).	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
90	CalPA	Set WMP-11	CalPA_Set WMP-11	7	CalPA_Set WMP-11_Q7	PG&E presents during the 2021 EPIC Symposium (Attch_Q6_EPIC_Presentation.pdf) that "REFCL could be applied to approx. 80% of PG&E HFTD distribution circuit miles (3-wire circuits)." However, PG&E's 2023 WMP, at page 275, states that:7 While PG&E is looking at opportunities for REFCL deployments in our distribution substations to mitigate wildfire risk and evaluating combinations of REFCL with EPSS and other mitigations, implementing it would require significant and costly changes to the grid. Instead of making costly changes to the grid, we are moving forward with more cost effective solutions such as DCD and Partial Voltage Detection. Why did PG&E state that "REFCL could be applied to approx. 80% of PG&E HFTD distribution circuit miles (3-wire circuits)" while stating that "implementing it would require significant and costly changes to the grid"?	This distinction is based on the fact that REFCL is not a plug-and-play technology and requires supporting construction and equipment changes in the substation and on the distribution circuits to function. This is different from DCD and Partial Voltage Detection, which are software-based features on existing hardware and require significantly less cost to implement.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
91	CalPA	Set WMP-11	CalPA_Set WMP-11	8	CalPA_Set WMP-11_Q8	PG&E's 2023 WMP, at page 275, states that: "While PG&E is looking at opportunities for REFCL deployments in our distribution substations to mitigate wildfire risk and evaluating combinations of REFCL with EPSS and other mitigations, implementing it would require significant and costly changes to the grid." a) Please state the earliest date when PG&E reached the conclusion that "implementing [REFCL] would require significant and costly changes to the grid." b) Why did PG&E not foresee "significant and costly changes" earlier than the date provided in part (a) of this question? c) Please provide all available documentation, analyses, or studies evidencing PG&E's response to subpart (b) of this question. d) How did PG&E reach the conclusion that "implementing [REFCL] would require significant and costly changes to the grid"? e) State the basis of the conclusion that "implementing [REFCL] would require significant and costly changes to the grid". f) How did the Calistoga REFCL pilot demonstration contribute to or support the conclusion stated in the quotation above? g) Please provide all available documentation, analyses, or studies evidencing PG&E's response to parts (d) and (e) of this question. h) What "significant and cost changes to [PG&E's] grid" would REFCL require for its implementation? i) For each "change" to PG&E's grid, what is the cost estimate? j) What are the cost estimates for each "change to the grid" at the substation level? k) What are the cost estimates for each "change to the grid" on a per circuit-mile basis?	a) Implementing REFCL requires significant and costly changes to the grid relative to DCD and Partial Voltage detection. PG&E first understood the deployment cost of REFCL in early 2021. b) PG&E needed to complete the field construction of the demonstration project to determine the cost to deploy REFCL at a substation. c) Please refer to PG&E's Test Year 2023 GRC, Application 21-06-021, Exhibit PG&E-04 and Exhibit PG&E-17, which contain the requested information. d) PG&E reached this conclusion through experience gained from the Calistoga REFCL demonstration project. e) PG&E encountered distribution equipment failures during 2022 REFCL testing, indicating further costs to integrate REFCL technology. f) The Calistoga REFCL demonstration project unveiled integration challenges of REFCL technology corresponding to greater costs. g) Please see: Rilery, Roger and Jon Bernardo. "JA8648-0-0 REFCL Functional Performance Report." October 14, 2020. This document can be accessed through the following link: https://www.esv.vic.gov.au/sites/default/files/2022-12/REFCL-Functional-Performance-Review.pdf. Please refer to page 29 of this document. h) Some of the major costs of implementing this technology are identified below: • Replacing voltage regulators in closed delta; • Installing new, matched sets of feeder breaker current transformers (CTs); • Replacing bus potential transformers (PTs); • Replacing substation service transformer with line-line connection; • Isolating bank neutral bus and install neutral bus grounding recloser; • Modifications to 12 kV bus structure for new switches and reclosers; • Installing Ground Fault Neutralizers; • Upgrading station battery capacity; • Upgrading feeder breaker protection and automation package to current standard; • Grounding grid improvements based on grounding study; • Replacement of auto boosters with closed delta voltage regulator banks; • Replacement of open delta voltage regulators with closed delta;	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter

92	CalPA	Set WMP-11	CalPA_Set WMP-11	9	CalPA_Set WMP-11_Q9	At which substations, other than the Calistoga substation, has PG&E tested REFCL?	We have not tested REFCL at any substations other than the Calistoga substation.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
93	CalPA	Set WMP-11	CalPA_Set WMP-11	10	CalPA_Set WMP-11_Q10	Has PG&E done any benchmarking study on REFCL with Southern California Edison (SCE)?	Yes, PG&E REFCL project engineers regularly engage with Southern California Edison to benchmark our findings and share results and learnings. Of note, SCE has fewer circuit miles of existing underground cable at their REFCL demonstration site.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
94	CalPA	Set WMP-11	CalPA_Set WMP-11	11	CalPA_Set WMP-11_Q11	Has PG&E collaborated or exchanged with SCE on REFCL? If so, please detail the relevant activities.	Yes, PG&E regularly collaborates with SCE on REFCL and sharing data and information. This includes a monthly utility group call/meeting and sharing technical reports.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
95	CalPA	Set WMP-11	CalPA_Set WMP-11	12	CalPA_Set WMP-11_Q12	PG&E's 2023 WMP, at page 275, states that:8 Instead of making costly changes to the grid, we are moving forward with more cost-effective solutions such as DCD [Downed Conductor Detection] and Partial Voltage Detection. Regarding Downed Conductor Detection (DCD), a) What "changes to the grid" are required for PG&E to implement this technology? b) Is DCD viable on 3-wire systems, 4-wire systems, or both? c) Does PG&E have a cost estimate for the deployment of DCD? d) If the answer to part (c) is yes, please provide the cost estimate(s).	a) Depending on the existing recloser controller, DCD may not require a physical "change to the grid" or it may require the retrofitting of an existing line recloser controller. b) DCD is most compatible with 3-wire systems. Implementation on 4-wire is possible but may not achieve the benefits desired due to the higher settings thresholds that would be required. As a result, we are not currently installing DCD on 4-wire systems. c) Yes, please see the response to subpart (d) below. d) The cost estimate is as follows: $15.9 million in 2023; $13.1 million in 2024; and $8.4 million in 2025.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	7.2.1	e Mitigation Strategy Develo	Overview of Mitigation Initiatives and Activities
96	CalPA	Set WMP-11	CalPA_Set WMP-11	13	CalPA_Set WMP-11_Q13	PG&E's 2023 WMP, at page 275, states that:9 "Instead of making costly changes to the grid, we are moving forward with more cost-effective solutions such as DCD and Partial Voltage Detection." Regarding Partial Voltage Detection (PVD), a) What "changes to the grid" are required for PG&E to implement this technology? b) Is PVD viable on 3-wire systems, 4-wire systems, or both? c) Does PG&E have a cost estimate for the deployment of PVD? d) If the answer to part (c) is yes, please provide the cost estimate(s).	a) Partial Voltage Detection (PVD) does not require a "change to the grid," the statement quoted above refers to how this makes PVD a cost-effective solution. b) PVD is viable on both 3-wire and 4-wire systems. c) No, as there is no cost to "deploy" PVD. d) Not applicable, please see the response to subpart (c) above.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	7.2.1	e Mitigation Strategy Develo	Overview of Mitigation Initiatives and Activities
97	CalPA	Set WMP-11	CalPA_Set WMP-11	14	CalPA_Set WMP-11_Q14	Based on PG&E's evaluation of REFCLs: a) Please describe the significant changes to the grid required to implement REFCL technology, b) State PG&E's cost estimates for such changes, c) Describe the equipment installations required for such changes, and d) Describe the likely operational impacts resulting from the implementation of REFCLs on PG&E's system.	a) The significant changes to the grid required to implement REFCL are identified below: • Replacing voltage regulators in closed delta; • Installing new, matched sets of feeder breaker current transformers (CTs); • Replacing bus potential transformers (PTs); • Replacing substation service transformers with line-line connections; • Isolating the bank neutral bus and installing a neutral bus grounding recloser; • Modifying the 12 kV bus structure for new switches and recloser; • Installing Ground Fault Neutralizers; • Upgrading the station battery capacity; • Upgrading the feeder breaker protection and automation package to the current standard; • Grounding grid improvements based on grounding study; • The replacement of auto boosters with closed delta voltage regulator banks; • The replacement of open delta voltage regulators with closed delta; • The replacement of line reclosers and controllers for sensitive earth fault detection; • The isolation transformer for primary connected customers; • Replacing three-phase fuse arrangements with FuseSavers; • Phase connection swaps for capacitive current balancing; and • The replacement of old, direct bury underground cable. b) The total cost estimate for these changes varies but is in the range of $10,000,000 to $20,000,000. c) Please see the response to subpart (a) for the requested information. d) PG&E is still gaining operational experience with REFCL on its system through the demonstration project. One impact that has been identified at this time is that the known that fault location can be a challenge for such a system.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
98	CalPA	Set WMP-11	CalPA_Set WMP-11	15	CalPA_Set WMP-11_Q15	Please state the dates when PG&E finished evaluating the following: a) The significant changes to the grid required to implement REFCL technology, b) The cost estimates for such changes, c) The equipment installations required due to such changes, and d) The likely operational impacts resulting from the implementation of REFCL on PG&E's system.	a) – d) We finished the evaluation of each item identified above in early 2021.	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter
99	CalPA	Set WMP-11	CalPA_Set WMP-11	16	CalPA_Set WMP-11_Q16	Please provide all available documentation, studies, and analyses evidencing PG&E's conclusions on each of the following aspects of REFLC deployment: a) The significant changes to the grid required to implement REFCL technology, b) The cost estimates for such changes, c) The equipment installations required due to such changes, and d) The likely operational impacts resulting from the implementation of REFCL on PG&E's system.	a) Please see: Rilery, Roger and Jon Bernardo. "JA8648-0-0 REFCL Functional Performance Report," October 14, 2020. This document can be accessed at the following link: https://www.esv.vic.gov.au/sites/default/files/2022-12/REFCL-Functional-Performance-Review.pdf. Please see page 29 of this document for the requested information. b) Please refer to PG&E's Test Year 2023 GRC, Application 21-06-021, Exhibit PG&E-04 and Exhibit PG&E-17. c) Please see: Rilery, Roger and Jon Bernardo. "JA8648-0-0 REFCL Functional Performance Report," the same document as identified in response to subpart (a). d) Please see: Rilery, Roger and Jon Bernardo. "JA8648-0-0 REFCL Functional Performance Report," the same document as identified in response to subparts (a) and (c).	Pui-Wa Li	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_011.zip	0	N/A	8.1.8.1.3.1	Grid Operations and Procedures	Rapid Earth Fault Current Limiter

100	TURN	003	TURN_003	1	TURN_003_Q1	Please provide data in PG&E's possession that indicates the following: a. The SAIDI (System Average Interruption Duration Index) for the years 2018-2022 for underground distribution facilities; b. The MAIFI (Momentary Average Interruption Frequency Index) for the years 2018-2022 for underground distribution facilities; c. The SAIDI (System Average Interruption Duration Index) for the years 2018-2022 for overhead distribution facilities with covered conductor; d. The MAIFI (Momentary Average Interruption Frequency Index) for the years 2018-2022 for overhead distribution facilities with covered conductor; e. The SAIDI (System Average Interruption Duration Index) for the years 2018-2022 for overhead distribution facilities without covered conductor; f. The MAIFI (Momentary Average Interruption Frequency Index) for the years 2018-2022 for overhead distribution facilities without covered conductor.	Please see the attachment "WMP-Discovery2023_DR_TURN_003-Q001Atch01.xlsx" for the requested information. Please note that PG&E does not capture covered/non covered conductor status in our current outage reporting, so SAIDI/MAIFI data for covered conductor equipment cannot be provided at this time.	Tom Long	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_003.zip	1	N/A	N/A	N/A	N/A
101	TURN	003	TURN_003	2	TURN_003_Q2	Please provide all reports or studies in PG&E's possession prepared from January 1, 2018 to the present that discuss the reliability of underground distribution facilities, overhead distribution facilities with covered conductor, or overhead distribution facilities without covered conductor, including but not limited to a discussion of SAIDI and MAIFI data.	PG&E publishes an annual reliability report which provides a detailed report on the system-wide reliability performance. Please see the following attachments for the requested information: • "WMP-Discovery2023_DR_TURN_003-Q002Atch01.pdf;" • "WMP-Discovery2023_DR_TURN_003-Q002Atch02.pdf;" • "WMP-Discovery2023_DR_TURN_003-Q002Atch03.pdf;" • "WMP-Discovery2023_DR_TURN_003-Q002Atch04.pdf;" and • "WMP-Discovery2023_DR_TURN_003-Q002Atch05." Additionally, we are in the process of finalizing a study that is planned to be completed by June 30, 2023. This study will assess the recorded reliability improvements at locations that have been undergrounded and/or have been hardened with covered conductor. It is important to also note that the focus of our overhead system hardening and undergrounding program to date has been primarily to drive wildfire mitigation.	Tom Long	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_003.zip	5	N/A	N/A	N/A	N/A
102	TURN	003	TURN_003	3	TURN_003_Q3	Regarding Table 7-3-2, p. 296, the bottom row re PSPS: a. Please confirm that the targets for reduced customer impacts in 2023, 2024 and 2025 are cumulative, i.e, that the 33,000 figure for 2024 includes the 15,000 reduced impacts for 2023, and so on. b. Please provide the supporting data for the estimates of reduced PSPS impacts in 2023 (15,000 customer events), 2024 (33,000 customer events), and 2025 (55,000 customer events). Provide the data in live Excel format if possible. c. The table states that the targeted reductions are "based on Wildfire mitigation projects including but not limited to MSO replacements and Underground miles . . .." For each of 2023, 2024 and 2025, please provide a breakdown of the reduced customer events by the mitigation measure to which PG&E attributes the reduced customer events, including but not limited to covered conductor installation. Explain how PG&E determined this breakdown. d. Provide equivalent data regarding reduced PSPS impacts for the years 2019 through 2022 and provide the supporting data for those figures in Live Excel format if possible. In addition, for each of these years, please provide a breakdown of the reduced customer events by the mitigation measure to which PG&E attributes the reduced customer events, including but not limited to covered conductor installation. Explain how PG&E determined this	a) We can confirm that the targets for reduced customer impacts are cumulative for Initiative PS-07 in Table 7-3-2. Please see Table PG&E-22-35-1 (2023 WMP p. 973) for the breakout of incremental customers for each respective year. b) Please see attachment WMP-Discovery2023_DR_TURN_003-Q003Atch01 for supporting data for the estimates of reduced PSPS impacts in 2023-2025 for the five-year period, 2018-2022. c) For breakdown of reduced customer events by mitigation measures, please see Table PG&E-22-35-1 of our 2023 WMP, or attachment WMP Discovery2023_DR_TURN_003-Q003Atch01. In this attachment, column "Incremental Customers Mitigated" provides the number of annual customers mitigated and column "Cumulative Customers Mitigated" provides the cumulative figure for customer mitigations. For an explanation of how this calculation was performed, please see the response to ACI PG&E-22-35 on page 972 of our 2023 WMP. Covered conductor installation is not part of the mitigation measure calculation to reduced customers events. For Covered Conductor Effectiveness, please see the response to ACI PG&E-22-11. d) The PSPS impact reductions are for the five-year lookback periods of 2018-2022. Completion of undergrounding and Motorized Switch Operator (MSO) mitigation in each	Tom Long	4/5/2023	4/10/2023	4/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/TURN_003.zip	1	N/A	9.1.5	Public Safety Power Shutoff	Performance Metrics Identified by the Electrical Corporation
103	CalPA	Set WMP-12	CalPA_Set WMP-12	1	CalPA_Set WMP-12_Q1	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, the column "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" is blank for the following distribution circuit Entry Numbers: 7, 8, 11, 15, 17, 18, 28, 29, 30, 36, 37, 38, 39, 47, 55, 62, 63, 70, 71, 97, 105, 111, 112, 120, 122, 125, 126, 148, 151, 153, 163, 178, 179, 183: a) For each of the above Entry Numbers, please explain why "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" are blank. b) For each of the above Entry Numbers, please state whether PG&E plans to take any measures during the 2023-2025 WMP period to reduce the need for and impact of future PSPS on that circuit. c) For each item in part (b) where PG&E does not plan to take any measures to reduce the need for an impact of future PSPS on that circuit, please state the basis for this decision.	a) We discovered an error in our 2023 WMP submission in the "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" of the Frequently De-energized Circuits list. We will reach out to Energy Safety to provide this corrected information and discuss updating our WMP submission pursuant to Energy Safety's guidelines. We will provide an explanation of any remaining blanks. Please note, we expect to have the table revised by April 18, 2023. b) See response (a). c) See response (a).	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
103	CalPA	Set WMP-12	CalPA_Set WMP-12	1 SUPP	CalPA_Set WMP-12_Q1 SUPP	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, the column "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" is blank for the following distribution circuit Entry Numbers: 7, 8, 11, 15, 17, 18, 28, 29, 30, 36, 37, 38, 39, 47, 55, 62, 63, 70, 71, 97, 105, 111, 112, 120, 122, 125, 126, 148, 151, 153, 163, 178, 179, 183: a) For each of the above Entry Numbers, please explain why "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" are blank. b) For each of the above Entry Numbers, please state whether PG&E plans to take any measures during the 2023-2025 WMP period to reduce the need for and impact of future PSPS on that circuit. c) For each item in part (b) where PG&E does not plan to take any measures to reduce the need for an impact of future PSPS on that circuit, please state the basis for this decision.		Holly Wehrman	4/6/2023	4/18/2023				9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
104	CalPA	Set WMP-12	CalPA_Set WMP-12	2	CalPA_Set WMP-12_Q2	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, the column "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" is blank for the following transmission circuit Entry Numbers: 200, 227 a) For each of the above Entry Numbers, please explain why "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" are blank. b) For each of the above Entry Numbers, please state whether PG&E plans to take any measures during the 2023-2025 WMP period to reduce the need for and impact of future PSPS on that circuit. c) For each item in part (b) where PG&E does not plan to take any measures to reduce the need for an impact of future PSPS on that circuit, please state the basis for this decision.	a) We discovered an error in our 2023 WMP submission in the "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" of the Frequently De-energized Circuits list. We will reach out to Energy Safety to provide this corrected information and discuss updating our WMP submission pursuant to Energy Safety's guidelines. We will provide an explanation of any remaining blanks. Please note, we expect to have the table revised by April 18, 2023. b) See response (a). c) See response (a).	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
104	CalPA	Set WMP-12	CalPA_Set WMP-12	2 SUPP	CalPA_Set WMP-12_Q2 SUPP	WMP, the column "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" is blank for the following transmission circuit Entry Numbers: 200, 227 a) For each of the above Entry Numbers, please explain why "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" are blank. b) For each of the above Entry Numbers, please state whether PG&E plans to take any measures during the 2023-2025 WMP period to reduce the need for and impact of future PSPS on that circuit. c) For each item in part (b) where PG&E does not plan to take any measures to reduce the need for an impact of future PSPS on that circuit, please state the basis for this decision.		Holly Wehrman	4/6/2023	4/18/2023				9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
105	CalPA	Set WMP-12	CalPA_Set WMP-12	3	CalPA_Set WMP-12_Q3	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, distribution circuit Entry Numbers: 1, 21, 22, 23, 24, 25, 26, 27, 33, 34, 44, 45, 69, 83, 84, 98, 99, 117, 119, 124, 127, 128, 129, 130, 131, 144, 152, 157, 158, 168, 169, 172, 176, 177, 181, 184 a) Please explain how PG&E deployed Temporary Generation to benefit the number of customers stated. b) Please explain whether PG&E plans to use Temporary Generation again in future PSPS events. If so, how many customers will benefit each time? c) For entries where no number of customers is listed in Table 9-2, please explain why the number of customers was not known.	a) We deploy two Temporary Generation initiatives (Distribution Microgrids and Backup Generation) to address different types of PSPS impacts to benefit the number customers stated. See Section 9.2.4 on p. 781 on details for additional details. The number of customers that benefited from Temporary Generation for each of the circuits listed, is the maximum number of customers mitigated per historic PSPS event by Distribution Microgrids and Backup Generation. b) We plan to continue to utilize Temporary Generation as a mitigation in any potential future PSPS events. • Deployment of the Distribution Microgrids will vary depending on the weather footprint. For Microgrids, the customers mitigated will vary from 14 customers to 3,278 customers. See below for the 2023 list of Distribution Microgrid locations and customers mitigated. Pre-staged Distribution Microgrids (8) County Pre-Staged Distribution Microgrids Customers (SPIDs) Mitigated Napa Angwin 48 Napa Calistoga 1574 Placer Colfax 418 Placer Foresthill 14 Lake Lucerne 1022 Butte Magalia 10 Lake Middletown 428 Shasta Shingletown 86 On Demand Distribution Microgrid Sites (5) County On Demand Distribution Microgrids Customers (SPIDs) Mitigated Eldorado Pollock Pines 63 Lake Clearlake North 3278 Calaveras Arnold 123	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits

106	CalPA	Set WMP-12	CalPA_Set WMP-12	4	CalPA_Set WMP-12_Q4	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, distribution circuit Entry Numbers: 3, 4, 6, 13, 14, 19, 20, 21, 22, 23, 24, 25, 26, 27, 32, 35, 49, 50, 51, 52, 53, 60, 61, 64, 65, 66, 67, 68, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 84, 85, 91, 94, 96, 99, 100, 101, 102, 104, 106, 107, 108, 109, 114, 115, 116, 123, 124, 127, 128, 129, 130, 132, 137, 139, 140, 142, 145, 147, 149, 150, 154, 158, 159, 164, 165, 168, 170, 171, 173, 180, 181, 182, 184, 186, 188, 189, 191 a) Please describe the PSPS protocols referenced in these Entry Numbers. b) Please explain how customers were "Mitigated by PSPS protocols." c) Please state how many customers benefited from mitigation by PSPS protocols in past events. d) State whether the customers referenced in part (c) benefited because they were not de energized or because they had reduced impacts from PSPS. e) Please state how many customers PG&E expects to benefit in the future due to mitigation by PSPS protocols. f) State whether the customers referenced in part (e) will benefit because they will not be de energized or because they will have reduced impacts from PSPS.	a) We discovered an error in our 2023 WMP submission in the "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" of the Frequently De-energized Circuits list. We will reach out to Energy Safety to provide this corrected information and discuss updating our WMP submission pursuant to Energy Safety's guidelines. We will provide an explanation of any remaining blanks. Please note, we expect to have the table revised by April 18, 2023. b) See response (a). c) See response (a). d) See response (a). e) See response (a). f) See response (a).	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
106	CalPA	Set WMP-12	CalPA_Set WMP-12	4 SUPP	CalPA_Set WMP-12_Q4 SUPP	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, distribution circuit Entry Numbers: 3, 4, 6, 13, 14, 19, 20, 21, 22, 23, 24, 25, 26, 27, 32, 35, 49, 50, 51, 52, 53, 60, 61, 64, 65, 66, 67, 68, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 84, 85, 91, 94, 96, 99, 100, 101, 102, 104, 106, 107, 108, 109, 114, 115, 116, 123, 124, 127, 128, 129, 130, 132, 137, 139, 140, 142, 145, 147, 149, 150, 154, 158, 159, 164, 165, 168, 170, 171, 173, 180, 181, 182, 184, 186, 188, 189, 191 a) Please describe the PSPS protocols referenced in these Entry Numbers. b) Please explain how customers were "Mitigated by PSPS protocols." c) Please state how many customers benefited from mitigation by PSPS protocols in past events. d) State whether the customers referenced in part (c) benefited because they were not de energized or because they had reduced impacts from PSPS. e) Please state how many customers PG&E expects to benefit in the future due to mitigation by PSPS protocols. f) State whether the customers referenced in part (e) will benefit because they will not be de energized or because they will have reduced impacts from PSPS.		Holly Wehrman	4/6/2023	4/18/2023					9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
107	CalPA	Set WMP-12	CalPA_Set WMP-12	5	CalPA_Set WMP-12_Q5	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, transmission circuit Entry Numbers: 193, 195, 197, 198, 199, 201, 202, 203, 204, 205, 206, 208, 209, 210, 211, 212, 213, 215, 217, 218, 219, 221, 222, 223, 224, 226, 228, 231, 232, 233, 234, 235, 236 a) Please describe the PSPS protocols referenced in these Entry Numbers. b) Please explain how customers were "Mitigated by PSPS protocols." c) Please state how many customers benefited from mitigation by PSPS protocols in past events. d) State whether the customers referenced in part (c) benefited because they were not de energized or because they had reduced impacts from PSPS. e) Please state how many customers PG&E expects to benefit in the future due to mitigation by PSPS protocols. f) State whether the customers referenced in part (e) will benefit because they will not be de energized or because they will have reduced impacts from PSPS.	a) We discovered an error in our 2023 WMP submission in the "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" of the Frequently De-energized Circuits list. We will reach out to Energy Safety to provide this corrected information and discuss updating our WMP submission pursuant to Energy Safety's guidelines. We will provide an explanation of any remaining blanks. Please note, we expect to have the table revised by April 18, 2023. b) See response (a). c) See response (a). d) See response (a). e) See response (a). f) See response (a).	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
107	CalPA	Set WMP-12	CalPA_Set WMP-12	5 SUPP	CalPA_Set WMP-12_Q5 SUPP	Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP, transmission circuit Entry Numbers: 193, 195, 197, 198, 199, 201, 202, 203, 204, 205, 206, 208, 209, 210, 211, 212, 213, 215, 217, 218, 219, 221, 222, 223, 224, 226, 228, 231, 232, 233, 234, 235, 236 a) Please describe the PSPS protocols referenced in these Entry Numbers. b) Please explain how customers were "Mitigated by PSPS protocols." c) Please state how many customers benefited from mitigation by PSPS protocols in past events. d) State whether the customers referenced in part (c) benefited because they were not de energized or because they had reduced impacts from PSPS. e) Please state how many customers PG&E expects to benefit in the future due to mitigation by PSPS protocols. f) State whether the customers referenced in part (e) will benefit because they will not be de energized or because they will have reduced impacts from PSPS.		Holly Wehrman	4/6/2023	4/18/2023					9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
108	CalPA	Set WMP-12	CalPA_Set WMP-12	6	CalPA_Set WMP-12_Q6	PG&E's WMP p. 751, Section 9.1.2, states that "This table [Table 9-2] also includes the mitigation measures taken, or planned to be taken, to reduce the likelihood of PSPS on those circuits." Regarding Table 9-2 (Lists of Frequently De-energized Circuits) in Appendix F of PG&E's WMP: The only planned action listed in Table 9-2 is regarding "MSO device installations or replacement planned" (which is listed for 8 of 236 circuits). a) Please explain why none of the other types of mitigation measures listed on p. 751 are listed in Table 9-2 as planned actions for any circuits. b) Please explain whether PG&E plans to take any mitigation measures for any of the remaining 228 circuits in Table 9-2.	a) We discovered an error in our 2023 WMP submission in the "Measures Taken, or Planned to Be Taken, to Reduce the Need for and Impact of Future PSPS of Circuit" of the Frequently De-energized Circuits list. We will reach out to Energy Safety to provide this corrected information and discuss updating our WMP submission pursuant to Energy Safety's guidelines. Additionally, majority of the mitigation types listed on p. 751 are circuit specific and we have provided the devices installed and line miles completed for those. Besides undergrounding and MSO we currently do not have a plan to install additional a devices such as sectionalizing or Microgrids locations. In our update to the Frequently De-energized Circuit list, we will add planned undergrounding as actions to the applicable circuits. b) See response to (a).	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.1.2	Public Safety Power Shutoff	Identification of Frequently De-Energized Circuits
109	CalPA	Set WMP-12	CalPA_Set WMP-12	7	CalPA_Set WMP-12_Q7	Regarding ACI PG&E-22-35 (Quantify Mitigation Benefits of Reducing PSPS Scale, Scope, and Frequency) on WMP p. 972-973: a) Please explain why this table shows customer impacts (in terms of incremental PSPS mitigation) for only two mitigation methods (i.e., undergrounding and MSO), while other methods (e.g., overhead hardening, sectionalizing, etc.) are not listed in this table. b) Has PG&E analyzed customer PSPS impacts for other mitigation methods? c) If the answer to part (b) is yes, please provide the results of PG&E's analysis. d) If the answer to part (b) is no, please explain why not.	a) Table PG&E-22-35-1 shows customers mitigated and not customers impacted. In the analysis, we applied the 2022 guidance in the weather lookback period of 2018-2022. Other mitigation methods such as sectionalizing devices, grid hardening, and PSPS protocols are already factored into the lookback. This allows us to calculate the number of customers we are able to mitigate with the two planned mitigations (undergrounding and MSO) we expect to complete in 2023-2025. b) We have not analyzed additional mitigation methods as undergrounding and MSO are the two projects we currently plan to complete in the next 3 years. Other mitigation methods such as sectionalizing devices, grid hardening, and PSPS protocols are already factored into the lookback. c) See response to (b) d) See response to (b)	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	Appendix D	Areas for Continued Improvement	ACI PG&E-22-35 – Quantify Mitigation Benefits of Reducing PSPS Scale, Scope, and Frequency
110	CalPA	Set WMP-12	CalPA_Set WMP-12	8	CalPA_Set WMP-12_Q8	Regarding Section 9.2.3 (Outline of Tactical and Strategic Decision-Making Protocol for initiating a PSPS/PSPS (Such as Decision Tree)), subsection, "Decision to De-Energize," the WMP p. 780 states in part that "The OIC will determine whether alternatives to de-energization are inadequate…" a) Please describe the alternatives to de-energization that are considered. b) Please state the basis of PG&E's decision regarding which alternatives to consider. c) Please describe how OIC determines whether such alternatives are adequate or inadequate.	a) We consider if alternatives, such as additional vegetation management and disabling automatic reclosers, could adequately reduce the risk of catastrophic wildfire thus lowering the need for de-energization. When these measures alone cannot reduce the risk of catastrophic wildfire in areas within the PSPS scope sufficiently to protect public safety, we will move forward with PSPS. b) See response to a). c) After alternatives are considered the OIC further evaluates the forecasted high wind speeds and wind gust speeds, which can break and blow vegetation and debris into power lines and blow sparks into dry vegetation, when it's determined these other measures are not adequate alternatives to mitigate the risk of catastrophic wildfire, and that de-energizing in the areas within the PSPS scope is necessary to protect public safety. Furthermore, we implemented efforts to mitigate adverse impacts on the customers and communities in areas where power shutoffs were likely. These efforts include: • Employing granular scoping processes to significantly reduce the public safety impacts of de-energization by de-energizing smaller segments of the grid within the close confines of the fire-critical weather footprint, rather than de-energizing larger amounts of customers in more populated areas. • Considering the public safety impacts of de-energizing by reviewing the total count of impacted customers and the impact of potential de-energization upon Medical Baseline customers, critical facilities, and the back-up generation capabilities of critical facilities that pose societal impact risks if de-energized (e.g., critical infrastructure). • Utilizing temporary generation to energize customers outside of the forecasted risk areas. • Using sectionalization to narrow the scope and number of customers affected. • Considering opportunities for islanding, temporary generation, and alternate grid solutions, to reduce and mitigate the number of customers de-energized. • Reducing the public safety impact of de-energizing some affected communities by using back-up generation to serve critical facilities and customers. • Providing local Community Resource Centers (CRCs) to support customers in those impacted communities. • Supporting vulnerable customers through California Foundation for Independent Living	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	9.2.3	Public Safety Power Shutoff	Outline of Tactical and Strategic Decision-Making Protocol for Initiating a PSPS/PSPS (Such as Decision Tree)

111	CalPA	Set WMP-12	CalPA_Set WMP-12	9	CalPA_Set WMP-12_Q9	Regarding WMP p. 783, Section 9.2.4 (Protocols for Mitigating the Public Safety Impacts of PSPS, Including Impacts on First Responders, Health Care Facilities, Operators of Telecommunications Infrastructure, and Water Electrical Corporations/Agencies), subsection "Transit- or Paratransit Dependent Persons": a) Does PG&E notify its transit- or paratransit-dependent customers of what specific resources are available, ahead of a potential PSPS event? b) If the answer to part (a) is yes, how far in advance of a potential PSPS event does PG&E notify transit- or paratransit-dependent customers? c) If the answer to part (a) is yes, please provide a sample of such a notification. d) Please provide an example of a map that has been provided to paratransit agencies.	Foundation for Independent Living Center (CFILC), which facilitates the Disability Disaster Access and Resources (DDAR) Program, PG&E's partnership with the California 211 Network, and PG&E's standalone agreement with four transportation organizations that provide accessible transportation in 12 counties. Furthermore, before and during a PSPS, PG&E provides known Paratransit agencies with 24-48 hour Watch Notifications, as well as any applicable Warning, Delay, Cancel, and Restoration Notifications during an event. This also includes a list of the zip codes impacted by county and the number of customers impacted. PG&E promotes all of its resources on https://www.pge.com/en_US/residential/outages/public-safety power-shutoff/psps-support.page. b) All potentially impacted customers including paratransit dependent customers and agencies begin receiving notifications up to 2 days ahead of the potential PSPS including a 2-day watch, 1 day watch, 1-4 hour warning and at time of de energization. AFN and Medical Baseline customers receive unique PSPS Watch and PSPS Warning notifications. These messages include customized phone, text, and email messages that request confirmation that the notification was received. If previous alerts are not acknowledged, we will make additional attempts to notify the customer. This will continue hourly, or be conducted in person, until we are able to reach them. c) Sample customer notifications are referenced in attachment "WMP Discovery2023_DR_CalAdvocates_012-Q009Atch01.pdf" d) Due to changing weather and therefore changes in projected footprint, we do not specifically provide a map to paratransit agencies, but provides paratransit agencies with a list of impacted zip codes along with the ability to look up any address or view a map of potentially impacted areas at	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	1	N/A	9.2.4	Public Safety Power Shutoff	Protocols for Mitigating the Public Safety Impacts of PSPS, Including Impacts on First Responders, Health Care Facilities, Operators of Telecommunications Infrastructure, and Water Electrical Corporations/Agencies
112	CalPA	Set WMP-12	CalPA_Set WMP-12	10	CalPA_Set WMP-12_Q10	Regarding PSPS and its relationship with EPSS settings. a) Please describe the decision-making process for a situation in which PG&E anticipates PSPS conditions but decides to utilize EPSS settings instead. b) Please list all dates in 2021 and 2022 when PG&E anticipated PSPS conditions but utilized EPSS settings instead, if this occurred. c) Please provide a narrative of the decision-making process for any instances listed in part (b) above. d) Please describe how PG&E utilizes EPSS during a PSPS event period.	process. EPSS operates independent of PSPS based on different criteria and thresholds – see Section 8.1.8.1 of PG&E's WMP. b) There were none as EPSS is not utilized instead of PSPS. Enabling EPSS instead of executing PSPS is not part of the PSPS decision making process. See response to (a) above. c) As explained in response to (a) since EPSS operates independent of PSPS there is no decision-making process to utilize EPSS instead of PSPS. Each program is based on different criteria and protocols, independent of each other. d) EPSS is enabled based on forecasted Fire Potential Index (FPI) criteria on an individual circuit level. If there are circuits adjacent to a PSPS polygon that meet EPSS enablement criteria – including non-tier EPSS buffer circuits within a Red Flag Warning or Fire Weather Watch footprint or meeting Minimum Fire Potential Conditions – those circuits will be EPSS enabled.	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	0	N/A	N/A	Public Safety Power Shutoff & Grid Operations and Procedures	N/A
113	CalPA	Set WMP-12	CalPA_Set WMP-12	11	CalPA_Set WMP-12_Q11	Regarding communications to customers for EPSS: a) Does PG&E provide notifications or other communication to customers when EPSS settings are enabled? (This may include, but is not limited to, notifications that a customer is served by a circuit that is subject to EPSS settings, notifications that an unplanned outage may occur, notifications of expected restoration time when an EPSS outage has occurred, or all clear notifications when EPSS settings are de-activated.) b) If the answer to part (a) is yes, please describe PG&E's approach to notifying customers about EPSS settings. c) Please provide an example of a message sent to a customer for each situation in part (b). d) At what point (i.e., number of minutes/hours) prior to enabling EPSS settings does PG&E notify customers? e) At what point (i.e., number of minutes/hours) after the beginning of an outage triggered by EPSS settings does PG&E notify customers? f) At what point (i.e., number of minutes/hours) after the line is restored, after an outage triggered by EPSS settings, does PG&E notify customers?	a) We have self-serve options for customers and Public Safety Partners to determine if EPSS settings are enabled on the line serving their home or business. Unlike PSPS, because EPSS is not a planned de-energization, we do not proactively notify customers as daily enablement and disablement decisions are made. b) Our customer outreach and education process includes information about the EPSS program, the benefits, and general information about the High Fire Risk Areas protected by EPSS settings. Customers who experienced eight or more outages on EPSS enabled circuits in 2022 will be receiving an email or letter in mid-April about the EPSS program. The letter includes language that indicates that the line serving their home or business has EPSS capability and that there could be unplanned power outages (bold added for emphasis in this response): To help prevent wildfires, we are making the electric system safer and stronger for our customers. This includes safety settings on your powerlines known as Enhanced Powerline Safety Settings (EPSS). While these settings help keep you safe, you may experience unexpected power outages. We are working hard to improve reliability across our electric grid - without sacrificing safety. Near real-time enablement status is available for County agencies and Public Safety Partners through PG&E's Outage Portal. We do not proactively notify customers directly as EPSS settings are enabled or disabled on a daily basis. However, the PG&E Outage Center on pge.com offers customers the option to search for their address. If EPSS settings are enabled, regardless of current outage status, a blue bar will appear at the top of the lookup indicating that EPSS settings are enabled. Please see "WMP-Discovery2023_DR_CalAdvocates_012-Q011Atch01.pdf" for an example from 2022. The language is being updated for 2023 to more clearly indicate that the EPSS settings are currently enabled. This functionality is scheduled to be re-enabled in May 2023. Customers who have not previously opted out are sent an initial outage notification when the outage occurs, regardless of EPSS enablement status. Customers can choose to receive the message via phone call, text message and/or email. Customers may choose any combination of notification preference. This notification includes an estimated time of restoration (ETOR) whenever possible. Restoration updates are sent	Holly Wehrman	4/6/2023	4/11/2023	4/11/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_012.zip	1	N/A	8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
114	CalPA	Set WMP-13	CalPA_Set WMP-13	1	CalPA_Set WMP-13_Q1	Figure PG&E-7.1.4-2 on p. 259 of PG&E's WMP shows Down Conductor Detection (DCD) is to be implemented on 4-wire distribution. a) Does PG&E plan to primarily implement DCD on 4-wire distribution, 3-wire distribution, or a mix? b) Please state the number of overhead circuit miles of 4-wire distribution in PG&E's HFTD. c) Please state the number of overhead circuit miles of 3-wire distribution in PG&E's HFTD.	a) At this time, we plan to implement Down Conductor Detection (DCD) only on 3-wire distribution (or on overhead circuits without phase to neutral connected load downstream). PG&E will continue to explore the possibility of applying DCD to 4-wire multi-grounded systems in the future. Figure 7.1.4-2 incorrectly identified DCD applicable to 4-wire when it should have indicated 3-wire systems. b) As shown in Figure 7.1.4-2, the 4-wire multi-grounded overhead mileage is estimated to be 675 miles. c) As shown in Figure 7.1.4-2, the 3-wire overhead mileage is estimated to be 25,540 miles.	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.1.2.10.1	Grid Design and System Hardening	Downed Conductor Detection Devices
115	CalPA	Set WMP-13	CalPA_Set WMP-13	2	CalPA_Set WMP-13_Q2	Table 8-27 on p. 586 of PG&E's WMP summarizes grid operation monitoring systems, including Distribution Fault Anticipation (DFA) and Early Fault Detection (EFD). a) Describe the types of faults, equipment failures, and/or other issues that DFA is capable of detecting. b) Describe the types of faults, equipment failures, and/or other issues that EFD is capable of detecting. c) Describe the types of faults, equipment failures, and/or other issues that DFA is capable of detecting, but EFD is not capable of detecting. d) Describe the types of faults, equipment failures, and/or other issues that EFD is capable of detecting, but DFA is not capable of detecting. e) Is DFA capable of locating problematic or failing equipment? Please explain your response. f) Is EFD capable of locating problematic or failing equipment? Please explain your response. g) Please summarize the results PG&E has seen from its DFA installations to date. h) Please summarize the results PG&E has seen from its EFD installations to date.	a) Distribution Fault Anticipation (DFA) is designed to detect conditions that generate current and voltage anomalies including series arcing issues (elbows, splices, switches) and shunt arcing faults (line slap, vegetation contact, wire down). It can also detect loss of load caused by broken conductors. b) Early Fault Detection (EFD) is designed to detect conditions that generate accumulation of Radio Frequency (RF) signal that are caused by partial discharge from equipment components including broken conductor strands, failing splices, broken/damaged/contaminated insulators, close vegetation, and failing windings in service transformers. c) DFA is capable of detecting issues in which events are short and of low repeat occurrences, which are not detected by EFD. DFA, unlike EFD, can also detect issues that are more evident in power quality data (current, voltage, power factor, and harmonics). d) EFD is capable of detecting issues which are very subtle and early within the failure mode that are not detectible by DFA. Examples of these issues include broken conductor strands, failing insulators, vegetation near conductors, and transformer windings. e) DFA is capable of identifying issues in a circuit. It can locate issues when used in combination with faulted circuit impedance models and line sensors. SmartMeters in the future will be able to improve location accuracy. DFA is used to accurately classify the type of issue and the other tools (circuit impedance models, line sensors and SmartMeters) help reduce the issue area so that field investigations can be targeted to a small area. f) EFD is capable of locating issues with high accuracy, to within a span on mainline and large tapline sections directly covered by EFD (with sensors on both ends of segment). g) As of Dec 31, 2022, PG&E has 74 DFA devices deployed and is currently in the phase of Operational Development (pre-production). As a result of this work, the DFA system has been used to identify four arcing connections in underground equipment and detect one fault-induced conductor slap. Other use cases have not been fully developed. h) PG&E has EFD deployed on four circuits as of Dec 31, 2022, and the technology is still in the pilot phase. As a result of this work, PG&E has been able to detect 11 damaged conductors (frayed or birdcaged), two arcing fuses, and one broken insulator.	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.3.3.1	Situational Awareness and Forecasting	Existing Systems, Technologies, and Procedures

116	CalPA	Set WMP-13	CalPA_Set WMP-13	3	CalPA_Set WMP-13_Q3	Table 7-3-1 on p. 281 of PG&E's WMP states the following objective with an estimated completion date of 12/31/2023: Develop a process of centralizing constraints resolution. As part of the build out of the centralized constraints team, three major categories will be addressed: customer constraints, environmental constraints (including internal PG&E procedures required to perform work) and permitting constraints (including both Land and Environmental permits). a) Describe what is meant by the phrase "centralizing constraints resolution." b) Please describe the benefits PG&E anticipates from "centralizing constraints resolution." c) Please describe the process PG&E plans to take to centralize customer constraints. d) Please describe the process PG&E plans to take to centralize environmental constraints. e) Please describe the process PG&E plans to take to centralize permitting constraints.	a) Constraints Management Organization (CMO) was created to act as the responsible group for developing and managing processes for constraints resolution. Following the initial lessons learned from the Enhanced Vegetation Management (EVM) program, this team will be formalizing processes and procedures concerning how the various types of constraints that occur within the Vegetation Management (VM) department should be managed. b) In previous years, the Constraints Management Team (CMT) worked within the EVM program to improve our approach to addressing constraints. This team was focused on coordinating efforts with PG&E teams to work with local governments, agencies, and landowners to address permitting or access constraints that temporarily prevented or delayed work from being performed. The CMT was able to gather additional information regarding constraints, review data, and work with other internal teams to resolve permitting or property access issues. As a result, by the end of 2021 the CMT had successfully resolved approximately 390 miles of constrained work for the EVM program. Within the EVM program in 2022, 703 miles of constrained work were resolved, which represents an ~80% increase from the prior year. c) The CMT is in the process of updating our customer constraints processes by reviewing and updating procedures. In addition to the updates, the CMT is also working with other customer focused groups within PG&E to request assistance with notifications if we are unable to contact the customer or if additional support is necessary. Beyond these steps, we are working to streamline our processes in an effort to reduce the timeline from work order creation to work order completion. d) The CMT is working as a point of contact between our VM Operations teams and our Environmental team to better track our environmentally sensitive work and ensure that review and release of work is occurring according to plan. The CMT is also evaluating the benefits of performing reviews of our environmental submittals before they are sent to PG&E's Environmental team to ensure all needed information is accurate and complete in an effort to streamline the process. e) The CMT has created a central email inbox where encroachment-type constraints can be submitted to the CMT for review. This work can be reviewed to see if existing encroachment	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.2.6	Vegetation Management and Inspections	Open Work Order
117	CalPA	Set WMP-13	CalPA_Set WMP-13	4	CalPA_Set WMP-13_Q4	Table 7-3-1 on p. 282 of PG&E's WMP states the following objective with an estimated completion date of 12/31/2025: For each major constraint category build a process for addressing each constraint type, implement the new process, and create metrics to track each constraint type. a) When does PG&E expect to begin implementing its process for centralizing customer constraints? b) When does PG&E expect to begin implementing its process for centralizing environmental constraints? c) When does PG&E expect to begin implementing its process for centralizing permitting constraints? d) What is the earliest date PG&E expects to begin realizing benefits (e.g. reduced time to resolve constraints) as a result of the objective quoted above? e) Why does PG&E expect that it will take until December 2025 to achieve the objectives in the passage quoted above? f) Between now and December 2025, how is PG&E addressing each constraint type?	a) For some Vegetation Management (VM) programs within the VM department, the Constraints Management Team (CMT) will be implementing process improvements to the customer constraints process as early as Q2 of 2023. b) The CMT has already begun facilitating regular check-in meetings with our Environmental teams to discuss environmental permitting needs, discuss opportunities for process improvement, and to generally engage on upcoming work. c) The CMT has already begun to utilize a centralized email box for submitting encroachment-type permitting support. We expect to continue to review what could be best management practices and to look for process improvement opportunities with the process as it evolves. d) For some VM programs in 2023, we are already seeing benefits of the CMT in pilot areas as process improvement ideas are put into action and VM Operational teams are engaged directly. e) The VM CMT will be integrating additional VM programs into our support model in the coming years and expect to achieve our objectives by December 2025. f) The CMT is working to better identify the various types of constraints that can affect VM's ability to complete needed work, to understand the current processes in place, to identify if process improvement opportunities exist, and to better create and track metrics for these	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.2.6	Vegetation Management and Inspections	Open Work Order
118	CalPA	Set WMP-13	CalPA_Set WMP-13	5	CalPA_Set WMP-13_Q5	segments when sorted by total wildfire risk). a) Footnote b in the column entitled "Jan 1, 2023 Overall Risk" states, "Accounts for risk reduction associated with EPSS." Please explain how PG&E quantified the risk reduction associated with EPSS for each of the circuit segments in Table 7-4. b) Do the values in the column entitled "Jan. 1, 2024 Overall Risk" account for risk reduction associated with EPSS? c) Do the values in the column entitled "Jan. 1, 2025 Overall Risk" account for risk reduction associated with EPSS? d) Do the values in the column entitled "Jan. 1, 2026 Overall Risk" account for risk reduction associated with EPSS? e) Please supplement Table 7-4 with the following additional columns: i. Forecast SAIDI in 2023 if EPSS were not utilized ii. Forecast SAIDI in 2023 with EPSS.		Holly Wehrman	4/6/2023	4/28/2023					7.2.2.3	e Mitigation Strategy Develo	Projected Risk Reduction on Highest-Risk Circuits Over the 3-Year WMP Cycle
119	CalPA	Set WMP-13	CalPA_Set WMP-13	6	CalPA_Set WMP-13_Q6	Table PG&E-6.2.2.-1 on p. 168 of PG&E's WMP lists four consequence values derived from the mean MAVF of historical fires. a) Has PG&E performed a sensitivity study to determine the effect of these values on the output of PG&E's WFC model? A sensitivity analysis could involve (for example) perturbations in how the mean MAVF of historical fires is calculated, or which historical fires are included in the calculation. b) If the answer to part (a) is yes, please summarize the results of this sensitivity study. c) If the answer to part (a) is no, please explain why not. d) If the answer to part (a) is no, does PG&E plan to perform a study or analysis similar to what is described in part (a)?	a) Yes, a deductive sensitivity analysis was performed to determine the possible effect of these values on the output of PG&E's WFC model. Please see our response to part b) for an explanation of our deductive analysis. b) For points within High Fire Risk Areas (HFRA) (or non-HFRA), there is only a single variable that determines the consequences, which is the fraction of days that a location or point spends in predicted destructive or non-destructive conditions. There are no other dependencies. Only the ordinality in the predicted destructive fraction of days matters to the overall consequence ranking of points within the HFRA (or within the non HFRA). Changing thresholds (i.e. flame length, rate of spread) to determine predicted destructive conditions did not substantially alter the ordinality of the pixels by fraction of predicted destructive days, therefore rankings within HFRA (or within the non HFRA) would not change much. Additionally, we evaluated whether changing predicted destructive values could result in HFRA locations or points dropping below the consequence ranking of locations or points not in the HFRA. The CoRE from Mean MAVF of Historic Fire values for HFRA (True) categories in table PG&E 6.2.2-1 are at least 3 orders of magnitude larger than any of the CoRE MAVF values for the non-HFRA (False) categories. Based on our analysis, we determined that changes to consequence beyond 1 order of magnitude were not likely. Therefore, in order for changes to result in significant consequence rank shifts, the category values represented in Table PG&E 6.2.2-1 would need to be much closer. c) N/A, please see the responses to subparts a) and b). d) N/A, please see the responses to subparts a) and b).	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	6.2.2.2	Risk Methodology and Assessment	Consequence
120	CalPA	Set WMP-13	CalPA_Set WMP-13	7	CalPA_Set WMP-13_Q7	In section 7.2.1 on pp. 275-276 of PG&E's WMP, PG&E states, "We determined that EPSS is more effective at mitigating wildfire risk at a lower cost as shown by comparing the RSEs for the two programs: at the time we filed the 2023 GRC, the RSE for EVM was 14.5 compared to the EPSS RSE of 105.7." a) Other than RSE, what other criteria did PG&E evaluate in the decision to move away from EVM? b) EPSS is a reactive mitigation program in contrast to EVM which is proactive. Does this reactive vs. proactive categorization have any impact on PG&E's decision to transition away from EVM? c) How does PG&E's RSE estimate for EPSS take into account the negative reliability impacts on customers?	a) There were several factors that we considered when deciding between the mitigation programs Enhanced Powerline Safety Settings (EPSS) and Enhanced Vegetation Management (EVM). Besides mitigation effectiveness and implementation and operating costs described by the Risk Spend Efficiency (RSE), we considered the faster pace of implementing EPSS compared to EVM, which results in faster risk reduction. The ability to expand EPSS across all circuits in the High Fire Threat Districts (HFTD), High Fire Risk Area (HFRA), and specific buffer areas quickly provides more immediate and ongoing operational mitigation benefits when compared to the individual miles of EVM scope executed each year. b) Our objective is to evaluate the effectiveness of minimizing catastrophic wildfires, regardless of whether mitigations are reactive or proactive. In fact, we do not use the labels "proactive" and "reactive" to categorize these mitigations. EPSS is better suited for managing overall risk because it more effectively mitigates multiple drivers of failure that could lead to an ignition, which ultimately reduces the chance of an ignition propagating into a catastrophic wildfire. c) The negative reliability impact to customers is captured as part of the Failure of Distribution Overhead asset risk. These impacts are detailed in A. 21-06-021, Exhibit (PG&E-4), Chapter 3, Figure 3-2 (below) in which PG&E showed the risk reduction of wildfire risk along with the negative impacts of reliability	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	7.2.1	e Mitigation Strategy Develo	Overview of Mitigation Initiatives and Activities
121	CalPA	Set WMP-13	CalPA_Set WMP-13	8	CalPA_Set WMP-13_Q8	For each of the following programs, what metrics does PG&E track to validate their impact and effectiveness at mitigating the impacts of PSPS events? a) Temporary Distribution Microgrids b) Community Microgrid Enablement Program c) Microgrid Incentive Program	a) We track Megawatts (MW), customers mitigated, and the number of usages per location each season to validate the impact and effectiveness of Temporary Distribution Microgrids. b) We track at minimum the frequency and duration of the microgrid's usage, along with the number of benefitting customer accounts. c) Please see our response to subpart (b).	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.1.2.7	Grid Design and System Hardening	Microgrids

122	CalPA	Set WMP-13	CalPA_Set WMP-13	9	CalPA_Set WMP-13_Q9	Do the following programs have any impact on customer reliability (e.g., frequency or duration of outages) in general? Please explain your response for each program. a) Temporary Distribution Microgrids b) Community Microgrid Enablement Program c) Microgrid Incentive Program	a) Distribution microgrids are designed to power communities' central corridors, or "Main Streets", to help safely provide electricity to critical facilities and shared community resources and reduce the number of customers impacted by PSPS. In general, customers being served by a temporary distribution microgrid will experience two brief outages: one as the microgrid is connected and one when the microgrid is disconnected after the PSPS outage. b) The Community Microgrid Enablement Program and Microgrid Incentive Programs are designed to have a positive impact on customer resiliency. The community microgrids developed through each program can reduce the duration of outages by providing energy within the microgrid during a broader grid outage. c) Please see our response to subpart (b).	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	8.1.2.7	Grid Design and System Hardening	Microgrids
123	CalPA	Set WMP-13	CalPA_Set WMP-13	10	CalPA_Set WMP-13_Q10	Figure 7-1 on p. 298 shows a sharp decline in risk after 2026. a) Please provide context as to what drives this decline. b) Why does PG&E anticipate a significantly more rapid rate of decline in residual risk after 2026 than in the 2023-2026 period?	a) The context for this sharper decline in risk after 2026 represents the expected, continued ramp-up of undergrounding miles to be installed each year. b) The more rapid rate of decline in residual risk after 2026 is due to the increase of the number of underground miles expected to be installed each year that are focused on the highest risk (top 20%) circuit segments, in which the benefits of undergrounding are cumulative over time. See section 8.1.2.2, specifically table 8.1.2.-3, which shows the current undergrounding portfolio increasingly addresses the top 20 percent risk-ranked circuit segments so that by 2025, 95 percent of the portfolio addresses the top risk, and in 2026, almost 100 percent of the targeted annual undergrounding miles are focused on the top risk. Note that all current fire rebuild projects are anticipated to complete before 2026. If future wildfires, or any cause, damage or destroy distribution overhead facilities and the decision is made to rebuild underground, this would impact the project portfolio in the relevant year(s) after such a fire.	Holly Wehrman	4/6/2023	4/12/2023	4/12/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_013.zip	0	N/A	7.2.2.1	e Mitigation Strategy Develo	Projected Overall Risk Reduction
124	CalPA	Set WMP-14	CalPA_Set WMP-14	1	CalPA_Set WMP-14_Q1	P. 347 of PG&E's WMP4 states (regarding PG&E's undergrounding program), "Among other benefits, the reduced pace (as compared to prior projections) will decrease costs in the initial years of the program." Please list the "other benefits" referenced in the quote above.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution
125	CalPA	Set WMP-14	CalPA_Set WMP-14	2	CalPA_Set WMP-14_Q2	P. 358 of PG&E's WMP states, "DTS-FAST is a technology developed internally at PG&E. It uses fraction of a second technologies to detect an object (such as a falling branch) approaching an energized power line and responds quickly to shut off power before the object impacts the line." a) Following a DTS-FAST de-energization, does DTS-FAST re-energize the line once it detects that the object is no longer a threat? b) Please outline the scenarios under which DTS-FAST would keep the line de-energized following a DTS-FAST-induced de-energization. c) Please outline the scenarios under which DTS-FAST would re-energize the line following a DTS-FAST-induced de-energization. d) What reliability impacts does PG&E forecast from DTS-FAST installations?		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.6.1	Grid Design and System Hardening	Distribution, Transmission, and Substation: Fire Action Schemes and Technology
126	CalPA	Set WMP-14	CalPA_Set WMP-14	3	CalPA_Set WMP-14_Q3	P. 359 of PG&E's WMP discusses Breakaway Connectors, and states, "The breakaway disconnect uses a weak link to provide a predictable point of separation and the service will then fall to the ground de-energized." a) What is the maximum wind speed that Breakaway Connectors can handle without separating? b) Has PG&E studied whether conditions exist that could cause a temporary fault and minimal or no damage to a non-breakaway connection, but would cause a Breakaway Connector to separate? For example, a small branch falling on the line. c) If the answer to part (b) is yes, please provide any results of such studies. d) If the answer to part (b) is no, does PG&E plan to perform such a study? e) What reliability impacts does PG&E forecast from Breakaway Connector installation? f) Please quantify the ignition risk associated with a Breakaway Connector separating. If this risk has not been quantified, describe the ignition risk in qualitative terms. g) Do Breakaway Connectors increase the likelihood of an EPSS-induced outage? Please explain your answer. h) If the answer to part (g) is yes, please quantify the increased likelihood of an EPSS-induced outage on circuits where Breakaway Connectors are installed.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.6.2	Grid Design and System Hardening	Breakaway Connector
127	CalPA	Set WMP-14	CalPA_Set WMP-14	4	CalPA_Set WMP-14_Q4	P. 359 of PG&E's WMP states, "Breakaway disconnect does not impact PSPS Risk." Please state the basis for the above quote.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.6.2	Grid Design and System Hardening	Breakaway Connector
128	CalPA	Set WMP-14	CalPA_Set WMP-14	5	CalPA_Set WMP-14_Q5	P. 363 of PG&E's WMP states, "Temporary distribution microgrids are designed to support community resilience and reduce the number of customers impacted by PSPS by energizing 'main street corridors' with clusters of shared services and critical facilities so that those resources can continue serving surrounding residents during PSPS events." a) Please list the temporary distribution microgrids that PG&E had available in 2020, 2021, and 2022 to mitigate the effect of a possible PSPS event. b) For each temporary distribution microgrid listed in part (a), state the number of times the temporary distribution microgrid was used in 2020, 2021, and 2022 to mitigate the effects of a PSPS event. c) For each instance in part (b), list the number of customers that remained energized during a PSPS event. d) How does PG&E determine what locations would warrant deployment of a temporary distribution microgrid? e) How does PG&E determine when to deploy a temporary distribution microgrid? f) How does PG&E determine when to remove a deployed temporary distribution microgrid?		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.7.2	Grid Design and System Hardening	Temporary Distribution Microgrids
129	CalPA	Set WMP-14	CalPA_Set WMP-14	6	CalPA_Set WMP-14_Q6	P. 365 of PG&E's WMP states, "The Redwood Coast Airport Microgrid (RCAM) was built through a California Energy Commission EPIC grant to the Schatz Energy Center and loan from United States of America to the Redwood Coast Energy Authority (a Community Choice Aggregator), in collaboration with PG&E's EPIC 3.11, 'Multi-Use Microgrid,' project." a) What was the total cost of the RCAM project? b) Please provide disaggregated costs associated with the RCAM fulfilled in whole or in part by the California Energy Commission EPIC grant, loan(s) from the United States of America, and any other distinct funding sources.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.7.3	Grid Design and System Hardening	Community Microgrid Enablement Program and Microgrid Incentive Program
130	CalPA	Set WMP-14	CalPA_Set WMP-14	7	CalPA_Set WMP-14_Q7	P. 365 of PG&E's WMP states, "The successful deployment of RCAM provides a model for other communities for collaborative development of multi-customer microgrids for energy resilience." a) How does PG&E determine the success of the RCAM? b) Please provide data to support the success of the RCAM.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.7.3	Grid Design and System Hardening	Community Microgrid Enablement Program and Microgrid Incentive Program
131	CalPA	Set WMP-14	CalPA_Set WMP-14	8	CalPA_Set WMP-14_Q8	P. 369 of PG&E's WMP states, "For 2023, we have planned to install devices that will provide significant reliability benefits on fuse tap lines that are in the scope of EPSS." a) Please quantify the "significant reliability benefits" that will be provided from devices installed in 2023. b) Please provide any available workpapers or studies to support your response to part (a).		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.8.1	Grid Design and System Hardening	Installation of System Automation Equipment – Distribution Protective Devices
132	CalPA	Set WMP-14	CalPA_Set WMP-14	9	CalPA_Set WMP-14_Q9	P. 385 of PG&E's WMP states that it will perform a "Substation Animal Abatement Effectiveness Study" in 2023. a) When does PG&E expect to begin the Substation Animal Abatement Effectiveness Study? b) When does PG&E expect to complete the Substation Animal Abatement Effectiveness Study?		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.12.2	Grid Design and System Hardening	Other Technologies and Systems – Substation Animal Abatement
133	CalPA	Set WMP-14	CalPA_Set WMP-14	10	CalPA_Set WMP-14_Q10	P. 393 of PG&E's WMP states, "In 2022 PGE implemented revisions made to TD-2325, which incorporated industry best practices as well as adjusted the pole rejection criteria." Please list the adjustments that PG&E made to the pole rejection criteria.		Holly Wehrman	4/11/2023	4/17/2023					8.1.3.1.5	Asset Inspections	Intrusive Pole Inspection
134	CalPA	Set WMP-14	CalPA_Set WMP-14	11	CalPA_Set WMP-14_Q11	P. 400 of PG&E's WMP states, "PG&E designated plat maps as extreme, severe, high, medium, or low based on the average wildfire consequence of the structures within that plat map." a) Is the designation described above based on the wildfire consequence scores from the WDRM v2 or the WDRM v3? b) How frequently does PG&E plan to re-evaluate the plat map designations described above? c) When PG&E re-evaluates the plat map designations, what steps will it take regarding a plat map that has increased in severity, such as from high to severe or severe to extreme?		Holly Wehrman	4/11/2023	4/17/2023					8.1.3.2.1	Asset Inspections	Detailed Ground Inspection

135	CalPA	Set WMP-14	CalPA_Set WMP-14	12	CalPA_Set WMP-14_Q12	Table PG&E-8.1.7-6 on p. 458 of PG&E's WMP shows that PG&E added 41,869 distribution work orders to its HFTD/HFRA backlog in 2022. a) What measures has PG&E implemented to ensure that it will be able to reduce its backlog in 2023 by closing more tags than it opens? b) What factors may prevent PG&E from reaching its targets regarding backlog reduction in 2023? c) For each factor in part (b), what measures has PG&E taken to mitigate the risk that this		Holly Wehrman	4/11/2023	4/17/2023					8.1.7.2	Open Work Orders	Open Work Orders – Distribution Tags
136	CalPA	Set WMP-14	CalPA_Set WMP-14	13	CalPA_Set WMP-14_Q13	P. 463 of PG&E's WMP states, "EPSS does not cause a power outage." Given that EPSS settings can de-energize a line without prior warning, and without an apparent cause, please explain what is meant by the above quote.		Holly Wehrman	4/11/2023	4/17/2023					8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
137	CalPA	Set WMP-14	CalPA_Set WMP-14	14	CalPA_Set WMP-14_Q14	Per PG&E's January 2023 EPSS monthly report, PG&E experienced 2,375 EPSS outages in 2022. a) Of the EPSS-triggered outages in 2022, in how many of these outages did PG&E find that no corrective actions were required prior to re-energizing (i.e. there was no persistent condition that PG&E needed to resolve upon inspecting the location of the outage)? b) Were there any EPSS-triggered outages in 2022 that PG&E determined were triggered by events that did not pose an ignition risk? c) If the answer to part (b) is yes, how many such EPSS-triggered outages occurred in 2022?		Holly Wehrman	4/11/2023	4/17/2023					8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
138	CalPA	Set WMP-14	CalPA_Set WMP-14	15	CalPA_Set WMP-14_Q15	P. 465 of PG&E's WMP states, "In 2022, we expanded the scope of EPSS to all HFRAs in our service territory and select adjacent EPSS buffer areas." a) In 2022, did PG&E expand the scope of EPSS to all HFRAs and all HFTD? b) If PG&E did not expand the scope of EPSS to all HFTD in 2022, please state the basis for this decision. c) In 2023, will the scope of EPSS cover all HFRAs and all HFTD? d) If the answer to part (c) is no, please state the basis for this decision.		Holly Wehrman	4/11/2023	4/17/2023					8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
139	CalPA	Set WMP-14	CalPA_Set WMP-14	16	CalPA_Set WMP-14_Q16	Cal Advocates understands that a circuit segment that has been undergrounded may still experience PSPS outages, if segments upstream or downstream of the undergrounded circuit segment are subject to PSPS. a) Is the above understanding correct? If not, please correct the above. b) During the 2023-2025 WMP period, does PG&E intend to utilize temporary microgrids or other mitigations to fully eliminate the risk of a PSPS event de-energizing undergrounded lines? c) If the answer to part (b) is no, please explain why not.		Holly Wehrman	4/11/2023	4/17/2023					9.1.5	Public Safety Power Shutoff	Performance Metrics Identified by the Electrical Corporation
140	CalPA	Set WMP-14	CalPA_Set WMP-14	17	CalPA_Set WMP-14_Q17	a) Has PG&E performed a study or back cast to predict the likelihood that an undergrounded segment will be subject to PSPS de-energizations due to upstream or downstream segments becoming subject to PSPS? b) If the answer to part (a) is yes, please provide the results of any such studies. c) If the answer to part (a) is no, please explain why not.		Holly Wehrman	4/11/2023	4/17/2023					9.1.5	Public Safety Power Shutoff	Performance Metrics Identified by the Electrical Corporation
141	CalPA	Set WMP-14	CalPA_Set WMP-14	18	CalPA_Set WMP-14_Q18	a) Has PG&E performed a study or back cast to predict the likelihood that an undergrounded segment will be subject to an EPSS-triggered de-energizations due to upstream or downstream segments becoming subject to EPSS? b) If the answer to part (a) is yes, please provide the results of any such studies. c) If the answer to part (a) is no, please explain why not.		Holly Wehrman	4/11/2023	4/17/2023					8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
142	CalPA	Set WMP-14	CalPA_Set WMP-14	19	CalPA_Set WMP-14_Q19	Please provide a list of all dig-in incidents that occurred from 2020-2022 and involved an underground electric distribution line. For each incident, please provide: a) Date of the incident b) Whether the dig-in was caused by PG&E employees, PG&E contractors, or a third-party c) Duration of the resulting outage, if applicable d) Injuries associated with the dig-in, if any e) Fatalities associated with the dig-in, if any f) Damage to non-PG&E structures associated with the dig-in, if any.		Holly Wehrman	4/11/2023	4/17/2023					8.4.2.1	Emergency Preparedness Plan	Overview of Wildfire and PSPS Emergency Preparedness
143	CalPA	Set WMP-14	CalPA_Set WMP-14	20	CalPA_Set WMP-14_Q20	a) During the period from 2020-2022, did PG&E replace any distribution poles as part of its WMP activities for which PG&E had not fully recovered the original cost of the pole? b) If the answer to part (a) is yes, what was PG&E's practice regarding cost recovery on the unrecovered portion of the value associated with the replaced pole? c) If the answer to part (a) is yes, please provide the number of such poles that PG&E replaced.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.3	Grid Design and System Hardening	Distribution Pole Replacements and Reinforcements
144	CalPA	Set WMP-14	CalPA_Set WMP-14	21	CalPA_Set WMP-14_Q21	a) During the period from 2020-2022, did PG&E replace any distribution conductor as part of its WMP activities for which PG&E had not fully recovered the original cost of the conductor? This may involve undergrounding a previously hardened line, or replacing a bare overhead line with covered conductor. b) If the answer to part (a) is yes, what was PG&E's practice regarding cost recovery on the unrecovered portion of the value associated with the replaced conductor? c) If the answer to part (a) is yes, please provide the number of circuit miles of such conductor that PG&E replaced.		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.5.2	Grid Design and System Hardening	Traditional Overhead Hardening – Distribution
145	CalPA	Set WMP-14	CalPA_Set WMP-14	22	CalPA_Set WMP-14_Q22	a) During the period from 2020-2022, did PG&E replace any distribution transformers as part of its WMP activities for which PG&E had not fully recovered the original cost of the transformer? b) If the answer to part (a) is yes, what was PG&E's practice regarding cost recovery on the unrecovered portion of the value associated with the replaced transformer? c) If the answer to part (a) is yes, please provide the number of such transformers that PG&E replaced.		Holly Wehrman	4/11/2023	4/17/2023					8.1.4.11	Grid Design and System Hardening	Transformers
146	CalPA	Set WMP-14	CalPA_Set WMP-14	23	CalPA_Set WMP-14_Q23	a) In 2022, how many ignitions did PG&E experience related to overhead covered conductor distribution lines? b) In 2022, how many ignitions did PG&E experience related to overhead bare conductor distribution lines? c) In 2022, how many ignitions did PG&E experience related to underground distribution lines?		Holly Wehrman	4/11/2023	4/17/2023					Appendix D	Areas for Continued Improvement	ACI PG&E-22-06 – Addressing Increase in Risk Events
147	CalPA	Set WMP-14	CalPA_Set WMP-14	24	CalPA_Set WMP-14_Q24	a) In 2022, how many ignitions did PG&E experience related to overhead secondary distribution lines? b) In 2022, how many ignitions did PG&E experience related to overhead service lines?		Holly Wehrman	4/11/2023	4/17/2023					Appendix D	Areas for Continued Improvement	ACI PG&E-22-06 – Addressing Increase in Risk Events
148	CalPA	Set WMP-14	CalPA_Set WMP-14	25	CalPA_Set WMP-14_Q25	P. 89 of PG&E's 2022 Joint Annual Report to Shareholders states: On October 26, 2022, the Utility notified the CPUC that the Utility's procedure for wood pole replacements did not comply with CPUC requirements for replacement of poles under certain conditions and, accordingly, in some instances, the Utility failed to replace wood poles with safety factors below the required minimum.5 a) Please provide a copy of the October 26, 2022 self-report referenced above. b) List the specific non-compliances referenced in the statement, "the Utility's procedure for wood pole replacements did not comply with CPUC requirements for replacement of poles under certain conditions." c) List the specific conditions referenced in the statement, "the Utility's procedure for wood pole replacements did not comply with CPUC requirements for replacement of poles under certain conditions." d) List the corrective actions PG&E has implemented to remediate the non-compliances		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.3	Grid Design and System Hardening	Distribution Pole Replacements and Reinforcements
149	CalPA	Set WMP-14	CalPA_Set WMP-14	26	CalPA_Set WMP-14_Q26	P. 89 of PG&E's 2022 Joint Annual Report to Shareholders states: On December 22, 2022, the Utility submitted an update to the CPUC explaining the Utility had identified a population of wood poles that had not received intrusive inspections in accordance with GO 165's deadlines due to legacy issues, which should no longer be an issue due to changes in Utility procedures. a) Please provide a copy of the December 22, 2022 update referenced above. b) Describe the population of wood poles that had not received intrusive inspections in accordance with GO 165, referenced in the quote above. c) Describe the "legacy issues" referenced in the quote above. d) Describe the "changes in Utility procedures" referenced in the quote above. e) List the corrective actions PG&E has implemented to remediate the issues described in		Holly Wehrman	4/11/2023	4/17/2023					8.1.2.3	Grid Design and System Hardening	Distribution Pole Replacements and Reinforcements
150	CalPA	Set WMP-15	CalPA_Set WMP-15	1	CalPA_Set WMP-15_Q1	PG&E states in response to Question 1 (b) of CalAdvocates-PGE-2023WMP-08: PG&E will maintain clearances where EVM work occurred. PG&E will also be prescribing a minimum radial clearance of 12 feet throughout the system within HFTD and HFRA. Two new programs, Vegetation Management for Operational Mitigation (VMOM) and Focused Tree Inspection, are likely to result in individual trees that warrant enhanced clearance where EVM was not implemented. These programs inform clearances based on available outage data and trends, as well as site and tree specific conditions. While not called out as a uniform scope, clearances in portions of these targeted circuit segments may have similarities to EVM. a)Are the abovementioned two new programs (Vegetation Management for Operational Mitigations and Focused Tree Inspections) to take place through PG&E's system, as opposed to just in the HFTD or HFRA? b)Please describe the circumstances in which an individual tree would warrant enhanced clearance under the Vegetation Management for Operational Mitigations program. c)Please describe the circumstances in which an individual tree would warrant enhanced clearance under the Focused Tree Inspections program. d)Please describe how each of the two new programs "inform clearances based on available outage data and trends, as well as site and tree specific conditions".		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.6	Vegetation Management Inspections	Discontinued Programs

151	CalPA	Set WMP-15	CalPA_Set WMP-15	2	CalPA_Set WMP-15_Q2	PG&E states in response to Question 1 (c) (iii) of CalAdvocates-PGE-2023WMP-08 that its strategy for determining desired clearance distances going forward will be "Minimum of 12 feet of clearance or enough clearance to mitigate potential impacts to facilities if tree (whole or portion of) failure were to occur." Please describe PG&E's planned methodology for determining sufficient clearance to mitigate potential impacts in the event of tree failure as mentioned above.		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.6	Vegetation Management Inspections	Discontinued Programs
152	CalPA	Set WMP-15	CalPA_Set WMP-15	3	CalPA_Set WMP-15_Q3	PG&E states in its response to Question 2 (b) of CalAdvocates-PGE-2023WMP-08: "Two new programs, Vegetation for Operational Mitigations (VMOM) and Focus Tree Inspections (FTI) will identify new trees for the sort of work identified in this [tree] inventory. Additionally, if any priority trees are discovered while completing the TRI scope of work, they would be listed for work consistent with all other VM programs." Please describe how PG&E intends to track trees identified for work under VMOM and FTI.		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
153	CalPA	Set WMP-15	CalPA_Set WMP-15	4	CalPA_Set WMP-15_Q4	PG&E states in its response to Question 1 (c)(iii) of CalAdvocates-PGE-2023WMP-08 that it will decide desired clearance distances "Based on analysis of outage data and trends by AOC. Additionally, any tree which is within MDR, will be within the MDR before next work completion cycle or is showing signs of imminent failure before next work completion cycle." a)Please provide how PG&E will determine desired clearance distances using analysis of outage data and trends by AOC. b)Does "MDR" stand for "Minimum Distance Requirement" in this instance? Please define if not. c)If yes, is the "Minimum Distance Requirement" referred to here from General Order 95, or from PG&E's internal procedures? d)If the latter, please reference which procedure PG&E is utilizing.		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.6	Vegetation Management Inspections	Discontinued Programs
154	CalPA	Set WMP-15	CalPA_Set WMP-15	5	CalPA_Set WMP-15_Q5	PG&E states in its response to Question 2 (c) of CalAdvocates-PGE-2023WMP-08 that it "utilized VM EPSS-enabled outage data, historical VM outage data, and customer outage impact data" in devising the VMOM scope of work. a)Please describe how PG&E has utilized each of the following data types in devising the VMOM scope of work: i.VM EPSS-enabled outage data ii.Historical VM outage data		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
155	CalPA	Set WMP-15	CalPA_Set WMP-15	6	CalPA_Set WMP-15_Q6	PG&E states in its response to Question 2 (c) of CalAdvocates-PGE-2023WMP-08 that: For FTI, Areas of Concern (AOCs) were identified through a cross-functional effort utilizing county-based regional reviews to create polygons which are geographic areas. Initial polygon development utilized WDRMv3 consequence scores, Public Safety Specialist circuit-based evaluations, expertise, 30-year lookback of meteorology data, and analysis, identified PSPS Lookback Polygons, PSPS Vegetation Damage locations, vegetation caused ignition data, and vegetation caused outage data. The process is intended to be performed annually to identify where trends, models, or emerging available data indicated higher likelihood of tree caused damage or outages. a)Please explain how the following types of data will be utilized in developing AOC polygons for the FTI scope of work: i.WDRMv3 consequence scores ii.Public Safety Specialist circuit-based evaluations and expertise iii.30-year lookback of meteorology data and analysis iv.Identified PSPS Lookback Polygons v.PSPS Vegetation Damage Locations vi.Vegetation caused ignition data vii.Vegetation caused outage data. b)Please define and describe "PSPS Lookback Polygons". c)What is the threshold of 'likelihood of tree caused damage or outages' at which a		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
156	CalPA	Set WMP-15	CalPA_Set WMP-15	7	CalPA_Set WMP-15_Q7	PG&E states in its response to Question 2 (h) of CalAdvocates-PGE-2023WMP-08 its Tree Inventory Program "is planned to last 9 years". In response to Question 9 (a) of CalAdvocates-PGE-2023WMP-08, it provides a pace for the next three years of 15,000 trees in 2023, 20,000 trees in 2024, and 25,000 trees in 2025. a)Please explain why PG&E is forecasting it will take 9 years to work down its previously identified tree inventory. b)Please state the basis for the abovementioned pace of work up to the year 2025. c)Does PG&E have current goals or targets for the program past the year 2025? d)If so, please state such goals or targets. e)Please quantify, based on the currently available knowledge, the ignition risk posed by the tree inventory. f)If PG&E had not discontinued EVM at the end of 2022, how long would the EVM program		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.4	Vegetation Management Inspections	Tree Removal Inventory
157	CalPA	Set WMP-15	CalPA_Set WMP-15	8	CalPA_Set WMP-15_Q8	PG&E states in its response to Question 3 (h) of CalAdvocates-PGE-2023WMP-08 that "The Wildfire Data Risk Model (WDRM) v3 was utilized to prioritize nine CPZs for the VMOM program." a)Please provide the CPZs that were prioritized for the VMOM program. b)How was the WDRM v3 model utilized in prioritizing the nine CPZs? c)What risk threshold, or other criteria was used in prioritizing the nine CPZ's?		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.3	Vegetation Management Inspections	VM for Operational Mitigations
158	CalPA	Set WMP-15	CalPA_Set WMP-15	9	CalPA_Set WMP-15_Q9	PG&E states in its response to Question 3 (f) of CalAdvocates-PGE-2023WMP-08 that "PG&E will utilize EPSS Outages Extent of Condition (EOC) patrols to identify and generate additional tree work throughout the year. Additionally, EPSS outage data will be utilized in the scope of work development for the following year." Please provide the time frame or date when PG&E would plan to complete the additional tree work that is generated throughout the year.		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.3	Vegetation Management Inspections	VM for Operational Mitigations
159	CalPA	Set WMP-15	CalPA_Set WMP-15	10	CalPA_Set WMP-15_Q10	PG&E states in its response to Question 4 (e) of CalAdvocates-PGE-2023WMP-08 that "Pilot AOCs are prioritized using WDRMv3. The four pilot AOCs selected for 2023 incorporated additional reviews from the VM Execution Operational Team to select appropriate regional areas to inform the programs development." a)Please describe how the Pilot AOCs were prioritized using WDRMv3. b)Did reviews from the VM Execution Operational team change the WDRMv3-generated		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
160	CalPA	Set WMP-15	CalPA_Set WMP-15	11	CalPA_Set WMP-15_Q11	PG&E states in its response to Question 4 (g)(i) of CalAdvocates-PGE-2023WMP-08 that the scope of work for Focused Tree Inspection pilots is to Complete a focused tree inspection pilot project of ~300 OH line miles in 2023 to calibrate processes and optimize efficiencies. Inspections will utilize Tree Risk Assessment Qualification (TRAQ) Certified Arborists. Tree mitigations will be determined as necessary based on site and individual tree conditions. Pilots will begin in Q2 2023 and are intended to inform detailed SOW during the regional implementations. a)How was the initial scope of 300 OH line miles determined? b)Please list and describe the criteria PG&E will utilize to determine tree mitigations "as necessary" within the above-detailed scope of work and within the FTI program. c)Please define the term "regional implementations" in the above instance. d)Please clarify whether the scope referenced above is 300 line miles or 300 circuit miles. Cal Advocates understands "line miles" to typically refer to actual miles of conductor, such that one circuit mile of a three-phase circuit would be approximately three line miles.		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
161	CalPA	Set WMP-15	CalPA_Set WMP-15	12	CalPA_Set WMP-15_Q12	PG&E states in its response to Question 4 (h)(i) of CalAdvocates-PGE-2023WMP-08 that "While inspection tools and data collection are expected to be standardized it is anticipated that more regional guidance will utilize historical outage data to help us identify problematic tree species and failure modes and site conditions to support focused inspection decisions and prescriptions." a)Does "more regional guidance" mean guidance specific to each Area of Concern that will be developed after the pilots are complete? Please specify if not. b)If yes, please explain and provide relevant examples of how guidance would differ		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
162	CalPA	Set WMP-15	CalPA_Set WMP-15	13	CalPA_Set WMP-15_Q13	PG&E states in its response to Question 4 (k) of CalAdvocates-PGE-2023WMP-08 that "Pass or Fail criteria is not anticipated for the FTI program. FTI will use TRAQ Certified Arborists to perform inspections and prescribe work based on site and tree specific conditions. Some trees will be trimmed and other will be removed to address associated risk between inspection cycles." Please provide all criteria that PG&E will employ to determine tree trimming and removal,		Holly Wehrman	4/11/2023	4/14/2023					8.2.2.2.5	Vegetation Management Inspections	Focused Tree Inspections
163	CalPA	Set WMP-15	CalPA_Set WMP-15	14	CalPA_Set WMP-15_Q14	PG&E states in its response to Question 6 (f) of CalAdvocates-PGE-2023WMP-08 that: "PG&E has performed lab testing which has shown DCD is able to detect and de-energize downed conductors reducing ignition risk where installed." a)Please describe the methods, scope, and findings of the abovementioned lab testing. b)Please provide any documents generated from the abovementioned lab testing, including reports, etc.		Holly Wehrman	4/11/2023	4/14/2023					8.2.3.4	Vegetation Management and Inspections	Fall-In Mitigation
164	CalPA	Set WMP-15	CalPA_Set WMP-15	15	CalPA_Set WMP-15_Q15	PG&E states in its response to Question 12 of CalAdvocates-PGE-2023WMP-08 that: "Should a program fall below a 95% pass rate, catch back plans will be developed in partnership with VM execution to mitigate for specific cause of deficient rate." Please describe the nature of the abovementioned "catch back plans"		Holly Wehrman	4/11/2023	4/14/2023					8.2.5	Vegetation Management and Inspections	Quality Assurance/Quality Control

165	CalPA	Set WMP-15	CalPA_Set WMP-15	16	CalPA_Set WMP-15_Q16	PG&E states in its response to Question 13 (parts a, b, and c) of CalAdvocates-PGE-2023WMP-08 that: Improved quality verticals have been established for 2023, allowing for greater insight into overall VM work product throughput and risk identification/mitigation. Clear definitions of acceptance criteria, sampling methodology, population eligibility, and pass rate calculations were established and communicated across the VM organization prior to beginning 2023 audits. a)Please define the term “improved quality verticals”. b)Please list and describe the “improved quality verticals” that have been established for 2023. c)Please describe the “greater insight into overall VM work product throughput and risk identification/mitigation” that was provided by the improved quality verticals. d)Please provide the definitions of the following terms that “were established and communicated across the VM organization prior to beginning 2023 audits”: i.Acceptance criteria ii.Sampling methodology iii.Population eligibility		Holly Wehrman	4/11/2023	4/14/2023					8.2.5.1	Vegetation Management and Inspections	Quality Assurance and Quality Verification
166	CalPA	Set WMP-15	CalPA_Set WMP-15	17	CalPA_Set WMP-15_Q17	PG&E states in its response to Question 17(a) of CalAdvocates-PGE-2023WMP-08 that “For Routine and Second Patrol, PG&E does not currently have standards specific to high-risk species”, but that species types will be incorporated into Focused Tree Inspections pilots in 2023. PG&E states in its response to question 17(b) that “Development of any standards related to high-risk species is still being determined and contingent upon completion of FTI pilots in 2023. A determination will be made specific to that program as its guidance is formalized following the pilots.” a)Why does PG&E not have standards specific to high-risk species for routine and second patrol? b)Why does PG&E only plan to develop standards related to high-risk species for Areas of Concern, rather than throughout its service territory? c)How is PG&E establishing the standards for high-risk species? i.What method is PG&E using to establish the standards for high-risk species? ii.What experts is being used and/or consulted? iii.Is PG&E undertaking independent third party review, peer review, or some other method to provide independent assurance of their proposed standards? d)Would PG&E plan to expand standards related to high-risk species developed for its Areas of Concern for use throughout its service territory?		Holly Wehrman	4/11/2023	4/14/2023					8.2.3.6	Vegetation Management and Inspections	High-Risk Species
167	CalPA	Set WMP-15	CalPA_Set WMP-15	18	CalPA_Set WMP-15_Q18	PG&E states in its response to Question 18 of CalAdvocates-PGE-2023WMP-08 that “The Quality Management team has aligned on setting target pass rates at 88% for Field Quality Control Active Observation Programs for the following core vegetation management programs: Routine Distribution, Second Patrol Distribution, Vegetation Control, and Routine Transmission.” Please state the basis, provide the method, and supporting documentation for the		Holly Wehrman	4/11/2023	4/14/2023					8.2.3.6	Vegetation Management and Inspections	High-Risk Species
168	CalPA	Set WMP-15	CalPA_Set WMP-15	19	CalPA_Set WMP-15_Q19	In its response to Question 5 of CalAdvocates-PGE-2023WMP-08, PG&E provides the following table of actual and forecasted costs for vegetation management programs. PG&E further states that “The EVM Transitional programs for VM are Focused Tree Inspections, VM for Operational Mitigations, and Tree Removal Inventory.”. a)Please update this table to include the actual and forecast costs for each EVM Transitional Program, including: i.Focused Tree Inspections ii.VM for Operational Mitigations iii.Tree Inventory Removal. b)Please explain how PG&E plans to achieve the following cost reductions in vegetation management as demonstrated in the above table: i.$331,522,000 between 2022 and 2023		Holly Wehrman	4/11/2023	4/14/2023					8.2.5.2	Vegetation Management and Inspections	Quality Control
169	CalPA	Set WMP-15	CalPA_Set WMP-15	20	CalPA_Set WMP-15_Q20	In its response to Question 19(e) of CalAdvocates-PGE-2023WMP-08, PG&E says, “We do not have a source for tracking planned worked date for individual trees and are unable to provide the data at this time.” a)Does PG&E plan to develop a source for tracking planned work date for individual trees? b)If the answer to part (a) is yes, when does PG&E expect to have such a system implemented?		Holly Wehrman	4/11/2023	4/14/2023					8.2.3.4	Vegetation Management and Inspections	Fall-In Mitigation
170	TURN	004	TURN_004	1	TURN_004_Q1	Following up on the response to TURN Data Request 3, Question 2, please provide PG&E’s data showing the “recorded reliability improvements at locations that have been undergrounded and/or have been hardened with covered conductor” that will be assessed in the study planned for completion on June 30, 2023.		Tom Long	4/12/2023	4/17/2023					8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution
171	TURN	004	TURN_004	2	TURN_004_Q2	Regarding Table PG&E-22-35-1 (PSPS Events Lookback Analysis) on page 972 of PG&E’s 2023-2025 WMP: a.For each column with numerals, provide a verbal description of all input data and of how the numerals in each column were calculated. b.Provide the table in live Excel format.		Tom Long	4/12/2023	4/17/2023					Appendix D	Areas for Continued Improvement	ACI PG&E-22-35 Quantify Mitigation Benefits of Reducing PSPS Scale, Scope, and Frequency
172	TURN	004	TURN_004	3	TURN_004_Q3	Regarding PG&E’s response to ACI PG&E 22-35, beginning on page 971 of its WMP: a.Please identify each mitigation discussed in PG&E’s current WMP or its 2022 WMP that has the potential to mitigate the scale, scope, frequency, or duration of PSPS events. b.Please explain why Table 22-35-1 only looks at the impact of two mitigations, undergrounding and MSO, and does not consider the other mitigations identified in response to subpart (a). c.Please provide all PG&E analyses similar to what is presented in Table 22-35-1 regarding the impact on PSPS scale, scope, frequency, or duration of any or all of the other mitigations identified in response to subpart (a). d.Regarding the statement on page 971: “We concluded that none of the 2022 mitigation initiatives eliminated any event.” i.Please identify each of the “2022 mitigation initiatives” that are referenced in this statement. ii.Is the meaning of this statement that none of the 2022 mitigation initiatives reduced the scale, scope, frequency or duration of any event? If not, please explain what is meant by the statement and how it relates to the analysis presented in Table 22-35-1.		Tom Long	4/12/2023	4/17/2023					Appendix D	Areas for Continued Improvement	ACI PG&E-22-35 Quantify Mitigation Benefits of Reducing PSPS Scale, Scope, and Frequency
173	UC - SPD (Safety Policy Divisi	003	CPUC - SPD (Safety Policy Division)_003	1	CPUC - SPD (Safety Policy Division)_003_Q1	1.Fill in the attached spreadsheet “Wildfire Mitigation Table DR – PG&E.” The first tab is a “Glossary” which provides definitions for each attribute. The other tabs, “Data Input,” “Asset Inspections,” and “VM Inspections;” all need to be completed with data inputted from PG&E.		Kevin Miller	4/12/2023	4/19/2023					8	Wildfire Mitigation	N/A
174	UC - SPD (Safety Policy Divisi	003	CPUC - SPD (Safety Policy Division)_003	2	CPUC - SPD (Safety Policy Division)_003_Q2	2.In “PGE_2023_WMP_R0_Section_642_Atch01,” SPD has observed the mitigation effectiveness of Covered Conductor is on the order of 49% compared to the value reported in the WMP which is 64% (page 340). Explain the discrepancy.		Kevin Miller	4/12/2023	4/19/2023					8.1.2.1	Grid Design and System Hardening	Covered Conductor Installation – Distribution
175	UC - SPD (Safety Policy Divisi	003	CPUC - SPD (Safety Policy Division)_003	3	CPUC - SPD (Safety Policy Division)_003_Q3	3.Confirm or revise PG&E’s Butte County OH to UG conversion factor in the 2023-2025 WMP (currently 1.57 in the GRC) based on actual and estimated UG miles for 2023-2026. In the PG&E 2023 GRC Reply Brief (Dec ‘22) PG&E forecast 2,000 SH UG miles (MAT 08/0) and 100 Butte County UG miles (MAT 05E) for 2023-2026.		Kevin Miller	4/12/2023	4/19/2023					8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution
176	UC - SPD (Safety Policy Divisi	003	CPUC - SPD (Safety Policy Division)_003	4	CPUC - SPD (Safety Policy Division)_003_Q4	4.Based on WSPS’ initial review of the wildfire ignitions and general understanding of PG&E’s undergrounding program, it appears that undergrounding would have prevented only 87% of CPUC-reportable ignitions in the HFTD area between 2020-2022 primarily due to the impact of secondary and service conductor ignitions. Additionally, SPD noted ten CPUC-reportable ignitions in PG&E territory during 2022 which were related to undergrounding. [The data used is the fire ignition data stored here: Wildfire and Wildfire Safety (ca.gov). Please note, WSPS is still cleaning the data and determining the best methodology to analyze the data.] a.Provide the justification for the 99% mitigation effectiveness value for undergrounding reported in the Wildfire Mitigation Plan. Explain how secondary, service conductor, and underground ignitions are accounted for in the 99% mitigation effectiveness. b.Provide the percentage of CPUC-reportable ignitions in the HFTD that undergrounding would be expecting to remediate, accounting for secondary and service conductors. c.Provide a description of each CPUC-reportable ignition related to undergrounding that occurred in 2022 and describe how PG&E’s undergrounding approach would or would not mitigate this ignition. d.SPD’s general understanding is that ignitions from secondary conductors and service drops are accounted for in the methodology for calculating the effectiveness for both covered conductor and EPSS, but this risk does not appear to be accounted for in the same way for undergrounding. Explain the difference in the methodology for how the 99% mitigation effectiveness for undergrounding is calculated as compared to the 64% mitigation effectiveness for covered conductor and 65% effectiveness for EPSS. e.Explain how the mitigation effectiveness is applied to the risk calculation (such as that approach used in PGE_2023_WMP_R0_Section_642_Atch01) and contrast this approach to the approach used for covered conductor and EPSS. f.Provide the number of CPUC-reportable ignitions related to HFTDs in secondary and		Kevin Miller	4/12/2023	4/19/2023					8.1.2.2	Grid Design and System Hardening	Undergrounding of Electric Lines and/or Equipment – Distribution

177	UC - SPD (Safety Policy Divisi	003	CPUC - SPD (Safety Policy Division)_003	5	CPUC - SPD (Safety Policy Division)_003_Q5	5.Regarding the UG workplan table provided by PG&E, 2023-03-27_PGE_2023_WMP_R0_Appendix D ACI PG&E-22-16_Atch01_CONF.xlsx: a.Why does Column "O" "Risk Rank (V2)" begin at Rank 7 (as opposed to 1) for circuits? i.Why does it end at 3328? ii.Why do the gaps in rank 1-N exist? b.Why does Column "R" "Risk Rank (V3)" begin at Rank 6 (as opposed to 1) for circuits? i.Why does it end at 3263? ii.Why do the gaps in rank 1-N exist?		Kevin Miller	4/12/2023	4/19/2023					Appendix D	Areas for Continued Improvement	ACI PG&E-22-16 – Progress and Updates on Undergrounding and Risk Prioritization
Pre-Discovery 01	CalPA	Set WMP-01	CalPA_Set WMP-01	1	CalPA_Set WMP-01_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 2023 that is related to your WMP. Provide the copy to Cal Advocates within one business day of the document's submittal to Energy Safety. (If you have submitted the document to Energy Safety in 2023 prior to this data request, please provide a copy as soon as possible and no later than 10 business days from the issuance of this data request.) This request is limited to materials or documents that (1) are related to work plans, initiative targets, risk models, risk spend efficiency (RSE) calculations, or WMP change orders; and (2) 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).	GENERAL OBJECTIONS TO THIS SET OF DATA REQUESTS PG&E objects to the instructions or definitions in the set of data requests entitled CalAdvocates-PGE-2023WMP-01 that purport to impose any obligations greater than those provided by the applicable rules and decisions of the Commission or and any other statutes, orders, rules, or laws limiting the regulatory authority and jurisdiction of the Commission. In particular, PG&E objects to the instruction that purports to place a burden on the responding party to reach out to the requesting party to clarify any unclear questions, definitions, or instructions. The duty to prepare precise and well written instructions, definitions, and requests is on the party seeking the information and cannot be shifted to the responding party. Additionally, PG&E objects to the instruction that PG&E must "[p]rovide the name and title of the responding individual" as burdensome and not reasonably calculated to lead to the discovery of admissible evidence. Our responses to data requests are not the product of a single individual but of numerous individuals working together from different departments of the company. If the requesting party wishes to contact PG&E with questions or concerns about a data request, it may do so by contacting the appropriate individuals in the Regulatory Relations or Law Department upon whom the request was served PG&E also objects to the following definitions: • The definitions of "[r]elate to" or "concern" which are overbroad and burdensome to the extent they request materials "mention, or be connected with, in any way" the subject of the data requests. • The definitions of the terms "document," "documents," and "documentary material," which include "correspondence" and "communications," making these terms overbroad, unduly burdensome, and not reasonably calculated to lead to the discovery of admissible evidence in this proceeding. • The definition of the phrase "state the basis," which is overbroad and burdensome to the extent it requests "every fact, statistic, inference, supposition, estimate, consideration, conclusion, study, report, and analysis…." ANSWER 001	Holly Wehrman	2/7/2023	2/14/2023	2/14/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_001.zip	0	N/A	N/A	N/A	N/A
Pre-Discovery 02	CalPA	Set WMP-01	CalPA_Set WMP-01	2	CalPA_Set WMP-01_Q2	Please provide a copy of your WMP pre-submission within two business days of its submission to Energy Safety.	Attachment "WMP-Discovery2023_DR_CalAdvocates_001-Q02Atch01CONF.pdf" is our WMP pre-submission to Energy Safety. Please note that this document is not our final WMP submission and may be subject to revision before the final WMP is submitted in March. Additionally, 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	2/7/2023	2/15/2023	2/15/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_001.zip	1	N/A	N/A	N/A	N/A
Pre-Discovery 03	CalPA	Set WMP-01	CalPA_Set WMP-01	3	CalPA_Set WMP-01_Q3	Provide a copy of all documents or files that are referenced in your WMP Quarterly Data Reports and submitted to Energy Safety (including but not limited to all PDFs, spatial data files, non-spatial data files, and confidential attachments) on the same business day that the document is sent to Energy Safety	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. Biles 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. Furthermore, all submissions to Energy Safety are also posted to the relevant docket on the Energy Safety website, https://efiling.energysafety.ca.gov/, and are nearly always publicly available within one business day of submission. Public email notifications of the availability of these documents are sent to all parties who subscribe to the service lists for	Holly Wehrman	2/7/2023	2/14/2023	2/14/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_001.zip	0	N/A	N/A	N/A	N/A
Pre-Discovery 04	CalPA	Set WMP-01	CalPA_Set WMP-01	4	CalPA_Set WMP-01_Q4	Provide a copy to Cal Advocates of all your confidential responses to WMP discovery requests, on the same business day that you send the documents to the issuer of the discovery request. This includes: a) Confidential responses to WMP discovery requests issued by Energy Safety. b) Confidential responses to WMP discovery requests issued by other entities.	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. Biles 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	Holly Wehrman	2/7/2023	2/14/2023	2/14/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_001.zip	0	N/A	N/A	N/A	N/A
Pre-Discovery 05	CalPA	Set WMP-02	CalPA_Set WMP-02	1	CalPA_Set WMP-02_Q1	Please identify and provide a copy of all quality assurance or quality control (QA/QC) reports conducted by internal entities that were completed since January 1, 2022 and that examined any programs, initiatives, or strategies described in your 2022 WMP Update	PG&E understands this question to refer to reports from our internal Quality Control, Quality Assurance, and Quality Verification programs as set forth below. System Inspections Department Please see the attachment below for the System Inspections QC Department's daily and weekly dashboards communicating Key Performance Indicators (KPIs) and analysis. • "WMP-Discovery2023_DR_CalAdvocates_002-Q001Atch01CONF.pdf" Please note the above attachment contain confidential information. Electric Compliance Quality Management • GO 165 Inspections Please see attachment listed below for the Electric Compliance Quality Management Department's audits of GO 165 inspections. One Distribution and one Transmission system inspections audits were conducted in 2022. Please see attachments "WMP-Discovery2023_DR_CalAdvocates_002-Q001Atch02CONF.pdf" and "WMP-Discovery2023_DR_CalAdvocates_002-Q001Atch03CONF.pdf"; Please note the above attachments contain confidential information. • Vegetation Quality Verification (QV) The 2022 WMP submission for Vegetation QV is broken down to the following components: Distribution Reviews, Transmission Reviews, Vegetation Control Reviews, Enhanced Vegetation Management (EVM), and Break-In Audits. Please see the following reports for each of these components: o QVVM Work Log (attached as "xlsx") is a comprehensive log for all QV reviews completed in 2022 including a summary of findings for each review as well as a detailed report of those findings. o 2022 EVM Report, attached as "WMP Discovery2023_DR_CalAdvocates_002-Q001Atch05.pdf." • Vegetation Quality Assurance (QA) The 2022 WMP submission for Vegetation QA is broken down by "bundles." Final reports are available for bundles that have been completed to date. Please see the attached zip file for a total of 37 QA Report Packages: "WMP-Discovery2023_DR_CalAdvocates_002-Q001Atch06CONF.zip"	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_002.zip	6	N/A	N/A	N/A	N/A

Pre-Discovery 06	CalPA	Set WMP-02	CalPA_Set WMP-02	2	CalPA_Set WMP-02_Q2	Please identify and provide a copy of all quality assurance or quality control (QA/QC) reports conducted by external entities that were completed since January 1, 2022 and that examined any programs, initiatives, or strategies described in your 2022 WMP Update. External entities include, but are not limited to, consultants, contractors, auditors, court-appointed monitors, and Independent Evaluators.	The PG&E Independent Safety Monitor Status Update Report, dated October 4, 2022, discusses programs and initiatives described in our 2022 WMP. Please find the document here: https://www.cpuc.ca.gov/-/media/cpuc-website/industries and topics/documents/pge/oversight-and-enforcement/ism-status-update-report-q3-2022.pdf.	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_002.zip	1	N/A	N/A	N/A	N/A
Pre-Discovery 07	CalPA	Set WMP-02	CalPA_Set WMP-02	3	CalPA_Set WMP-02_Q3	Provide an Excel table of all defects in the year 2022 found by Energy Safety's Compliance Branch (as rows) that includes the following information in separate columns. a) Associated circuit name b) Defect type c) Description of defect d) WMP initiative (from your 2022 WMP update) associated with defect e) Date that the defect was identified f) Date that the defect was corrected g) If the defect has not yet been corrected as of the issuance date of this data request, a brief explanation h) Priority level of corresponding corrective tag i) Geographic latitude of defect in decimal degrees, truncated to seven decimal places j) Geographic longitude of defect in decimal degrees, truncated to seven decimal places	Please see attachment "WMP-Discovery2023_DR_CalAdvocates_002-Q03Atch01CONF.xlsx" for a list of all alleged defects identified in December 2021 by the Office of Energy Infrastructure Safety ("Energy Safety"). Please note these defects were issued as notification of defects in March 2022. Please note the following: • The data provided for "Defect type", "Description of defect," and "Date that the defect was identified" are all based on Energy Safety's inspection reports. • Not all corrective actions required Electric Corrective (EC) notifications (or "EC tags"). For example, while reviewing the alleged defects from Energy Safety, some work was addressed directly in the field (e.g., trimming of vegetation), and no EC tag was created. • This attachment contains confidential information	Holly Wehrman	2/7/2023	2/22/2023	2/22/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_002.zip	1	N/A	8.1.3	Asset Management and Inspections	N/A
Pre-Discovery 08	CalPA	Set WMP-03	CalPA_Set WMP-03	1	CalPA_Set WMP-03_Q1	Provide an Excel table of all distribution circuits existing as of January 1, 2023 (as rows) that includes the following information in separate columns. a. Circuit name b. Circuit ID number c. Total circuit miles d. Circuit miles in Non-HFTD Areas e. Circuit miles in Other HFTD f. Circuit miles in HFTD Tier 2 g. Circuit miles in HFTD Tier 3 h. Circuit voltage i. Circuit SAIDI (System Average Interruption Duration Index) for 2021 j. Circuit SAIDI (System Average Interruption Duration Index) for 2022 k. Circuit SAIFI (System Average Interruption Frequency Index) for 2021 l. Circuit SAIFI (System Average Interruption Frequency Index) for 2022 m. Circuit MAIFI (Momentary Average Interruption Frequency Index) for 2021 n. Circuit MAIFI (Momentary Average Interruption Frequency Index) for 2022 o. Total customer-minutes of de-energization on the circuit due to PSPS events in 2021 (sum of customer-minutes across all PSPS events). p. Total customer-minutes of de-energization on the circuit due to PSPS events in 2022 (sum of customer-minutes across all PSPS events). q. Total customer-minutes of de-energization on the circuit due to fast-trip settings in 2021. r. Total customer-minutes of de-energization on the circuit due to fast-trip settings in 2022. s. Number of trees that were worked on for EVM in Non-HFTD in 2021 t. Number of trees that were worked on for EVM in Non-HFTD in 2022 u. Number of trees that were worked on for EVM in Other HFTD in 2021 v. Number of trees that were worked on for EVM in Other HFTD in 2022 w. Number of trees that were worked on for EVM in HFTD Tier 2 in 2021 x. Number of trees that were worked on for EVM in HFTD Tier 2 in 2022	PG&E is providing the requested distribution information at the circuit level in attachment "WMP-Discovery2023_DR_CalAdvocates_003-Q001Atch01.xlxs." Included in the table below are notes that document assumptions in the methodology for data collection. Where we have not included any notes, the data provided did not require adaptations or assumptions in answering the request. For purposes of this request, "Other HFTD" refers to Zone 1 areas. Asset data provided in response to this request was generated from PG&E's Geographic Information Systems (GIS) and presented in a spreadsheet format. PG&E's 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. Therefore, completed field work is not always reflected in the current GIS systems. Once data is mapped in PG&E's GIS systems, it can be formatted to meet the requirements of the Office of Energy Infrastructure Safety (Energy Safety) File Geodatabase schema and included in our GIS Data Standard submissions. Data Question Notes Circuit Information a-h Some circuits can have multiple voltages. Where this occurs, the Circuit Voltage in column g reflects the voltage of the majority of the circuit (based on circuit miles). Please note, Circuit IDs and Circuit Names representing idle circuits were not included in this response. SAIDI/SAIFI/MAIFI i-n All transmission, substation, and distribution level outages as of	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	2	N/A	8.1.3	Asset Management and Inspections	Distribution
Pre-Discovery 09	CalPA	Set WMP-03	CalPA_Set WMP-03	2	CalPA_Set WMP-03_Q2	Provide an Excel table of all transmission circuits existing as of January 1, 2023 (as rows) that includes the following information in separate columns. a. Circuit name b. Circuit ID number c. Total circuit miles d. Circuit miles in Non-HFTD Areas e. Circuit miles in Other HFTD f. Circuit miles in HFTD Tier 2 g. Circuit miles in HFTD Tier 3 h. Circuit voltage i. Total customer-minutes of de-energization on the circuit due to PSPS events in 2021 (sum of customer-minutes across all PSPS events). j. Total customer-minutes of de-energization on the circuit due to PSPS events in 2022 (sum of customer-minutes across all PSPS events). k. Total customer-minutes of de-energization on the circuit due to fast-trip settings in 2021. l. Total customer-minutes of de-energization on the circuit due to fast-trip settings in 2022. m. Number of support structures replaced in Non-HFTD in 2021 n. Number of support structures replaced in Non-HFTD in 2022 o. Number of support structures replaced in Other HFTD in 2021 p. Number of support structures replaced in Other HFTD in 2022 q. Number of support structures replaced in HFTD Tier 2 in 2021 r. Number of support structures replaced in HFTD Tier 2 in 2022 s. Number of support structures replaced in HFTD Tier 3 in 2021 t. Number of support structures replaced in HFTD Tier 3 in 2022 u. Miles of LiDAR inspection in Non-HFTD in 2021 v. Miles of LiDAR inspection in Non-HFTD in 2022 w. Miles of LiDAR inspection in Other HFTD in 2021 x. Miles of LiDAR inspection in Other HFTD in 2022	PG&E is providing the requested transmission information at the circuit level in the attachment named "WMP-Discovery2023_DR_CalAdvocates_003-Q001Atch01.xlxs." Included in the table below are notes that document assumptions in the methodology for data collection. Where we have not included any notes, the data provided did not require adaptations or assumptions in answering the request. For purposes of this request, "Other HFTD" refers to Zone 1 areas. Asset data provided in response to this request was generated from PG&E's Geographic Information Systems (GIS) and presented in a spreadsheet format. PG&E's 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. Therefore, completed field work is not always reflected in the current GIS systems. Once data is mapped in PG&E's GIS systems, it can be formatted to meet the requirements of the Office of Energy Infrastructure Safety (Energy Safety) File Geodatabase schema and included in our GIS Data Standard submissions. Data Question Notes Circuit Information a.-h Some circuits can have multiple voltages. Where this occurs the Circuit Voltage in column g reflects the voltage of the majority of the circuit (based on circuit miles). De-Energization i-l As previously stated in our PSPS Post Event De Energization reports submitted to the CPUC: "The information, times and figures referenced in this report are based on the best available information available at the time of this report's submission. The information, times and figures herein are subject to revision based on further analysis and	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	8.1.3	Asset Management and Inspections	Transmission
Pre-Discovery 10	CalPA	Set WMP-03	CalPA_Set WMP-03	3	CalPA_Set WMP-03_Q3	Provide an Excel table of all distribution circuits existing as of January 1, 2022 (as rows) that were removed or decommissioned in 2022, either partially or entirely. This includes permanent removal, removal of overhead lines that were moved underground, or overhead lines that were decommissioned but not physically removed. Include the following information in separate columns. a. Circuit name b. Circuit ID number c. Circuit miles removed or decommissioned in Non-HFTD Areas d. Circuit miles removed or decommissioned in Other HFTD e. Circuit miles removed or decommissioned in HFTD Tier 2 f. Circuit miles removed or decommissioned in HFTD Tier 3 g. Reason(s) for removal or decommissioning	Attached is "WMP-Discovery2023_DR_CalAdvocates_003-Q003Atch01.xlsx", which provides information regarding removals of primary distribution lines in HFTD in 2022, which is the subset of the requested information available at this time. PG&E does not track line removals when relocating overhead to underground, removing secondary services, or removing lines in non-HFTD. Further, our GIS cannot be used to obtain this information retroactively because when mapping removals, the electric assets are removed from GIS. Below we provide additional information to clarify the data provided in the attachment in response to the request. a. Circuit name: See column C. b. Circuit ID number: See column D. c. Circuit miles removed or decommissioned in Non-HFTD Areas: N/A. As noted above, PG&E does not track line removals when relocating overhead to underground, removing secondary services, or removing lines in non-HFTD . d. Circuit miles removed or decommissioned in Other HFTD: N/A. PG&E does not track line removals when relocating overhead to underground, removing secondary services, or removing lines in non-HFTD. e. Circuit miles removed or decommissioned in HFTD Tier 2: Column E indicates if the project in the unique circuit segment is in either a Tier 2 and/or Tier 3 HFTD, and column G includes the associated circuit miles. f. Circuit miles removed or decommissioned in HFTD Tier 3: Column E indicates if the project in the unique circuit segment is in either a Tier 2 and/or Tier 3 HFTD, and column G includes the associated circuit miles. g. Reason(s) for removal or decommissioning: See Column F, which notes the name of one of three programs: (1) Fire Rebuild – Removal based on rebuilding in the aftermath of wildfires; (2) Idle Facilities – Unused facilities with no foreseeable future use; or (3) Base SH (System Hardening) – Removal based on the risk-informed criteria used in	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	1	N/A	8.1.2	Grid Design and System Hardening	Work Performed in 2022

Pre-Discovery 11	CalPA	Set WMP-03	CalPA_Set WMP-03	4	CalPA_Set WMP-03_Q4	Provide an Excel table of all transmission circuits existing as of January 1, 2022 (as rows) that were removed or decommissioned in 2022, either partially or entirely. This includes permanent removal, removal of overhead lines that were moved underground, or overhead lines that were decommissioned but not physically removed. Includes the following information in separate columns. a. Circuit name b. Circuit ID number c. Circuit miles removed or decommissioned in Non-HFTD Areas d. Circuit miles removed or decommissioned in Other HFTD e. Circuit miles removed or decommissioned in HFTD Tier 2 f. Circuit miles removed or decommissioned in HFTD Tier 3 g. Reason(s) for removal or decommissioning	Please see "WMP-Discovery2023_DR_CalAdvocates_003-Q004Atch01.xlsx.	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	1	N/A	Grid Design and System Hardening	System Hardening	Work Performed in 2022
Pre-Discovery 12	CalPA	Set WMP-03	CalPA_Set WMP-03	5	CalPA_Set WMP-03_Q5	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influenced where you performed work in 2022. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. EVM work in 2022 was informed by a modification of the 2021 Wildfire Distribution Risk Model (WDRM). The refined output from the 2021 WDRM is referred to as the EVM Tree-Weighted Prioritization. The EVM Tree-Weighted Prioritization prioritized the high risk CPZs with the associated miles and estimated tree work to produce the 2022 EVM Scope of Work as described in the 2022 WMP Section 7.1.B. In 2022, the goals for the EVM program were: (1) to perform at least 80% of our 2022 EVM work on the highest 20% of the risk-ranked miles; and (2) to perform approximately 1,800 miles of EVM work by the end of the year. b. As described in the 2022 WMP Section 7.3.3.17.1 "System Hardening –Distribution," PG&E targeted the highest wildfire risk miles and applied various mitigations such as line removal, conversion from overhead to underground, application of remote grid alternatives, mitigation of exposure through relocation of overhead facilities, and in-place overhead system hardening (emphasis added). For 2022, the highest wildfire risk miles were separated into four categories: 1. The top 20 percent of circuit segments as defined by PG&E's 2021 WDRM v2 for System Hardening, 2. Fire and Major Emergency rebuild within HFTD, 3. PSPS mitigation projects; and 4. Locations identified by PG&E's Public Safety Specialist (PSS) team as presenting elevated wildfire risk. The primary approach used for selecting and prioritizing circuit segments for covered conductor installation was based on the 2021 WDRM v2. c. As described in the 2022 WMP Section 7.3.3.17.1 "System Hardening –Distribution," PG&E targeted the highest wildfire risk miles and applied various mitigations such as line removal, conversion from overhead to underground(emphasis added), application of remote grid alternatives, mitigation of exposure through relocation of overhead facilities, and in-place overhead system hardening. For 2022, the highest wildfire risk miles are separated into four categories: 1. The top 20 percent of circuit segments as defined by PG&E's 2021 WDRM v2 for System Hardening,	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	2022 WMP Section 7.1	Wildfire Mitigation Strategy	N/A
Pre-Discovery 13	CalPA	Set WMP-03	CalPA_Set WMP-03	6	CalPA_Set WMP-03_Q6	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influenced how work in 2022 was sequenced. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. The 2022 EVM Scope of Work was based on the prioritization from the 2021 list of circuit protection zones informed by the EVM Tree Weighed Prioritization barring external factors and leveraging efficiency of bundling where possible. b. The circuit segments selected for the installation of covered conductor in the System Hardening program were based on the highest wildfire risk criteria described in response to Question 5(b). To then sequence projects, PG&E assesses the dependencies and readiness of each project based on the stage of the work (e.g., designing/estimating, permit acquisition, construction) to appropriately schedule each individual project, as the development time for each project can vary widely. Once projects are in the construction phase, schedules can continue to evolve based on various factors that impact project execution, including unanticipated weather, material availability, and customer preference of timing of re-connection. c. The circuit segments selected for the installation of underground lines in the System Hardening program were based on the highest wildfire risk criteria described in response to Question 5(c). To then sequence projects, PG&E assesses the dependencies and readiness of each project in each stage of the work (e.g., designing/estimating, permit acquisition, land rights acquisition, construction) to appropriately schedule each individual project, as the development time for each project can vary widely. Once projects are in the construction phase, schedules can continue to evolve based on various factors that impact project execution including unanticipated weather, material availability, community limitations (e.g., for road closures), customer preference of timing of re-connection, discovery of hard rock, and/or detection of unmarked existing utility infrastructure. d. After the work for 2022 was prioritized based on the process described in Q005, the pole replacement sequencing was determined based on each pole's priority bucket, estimating and material readiness, and crew and clearance availability. Wildfire risk scores were not factors in determining sequencing after prioritization. e. For grid sectionalization, Wildfire Risk scores were not factors in determining how work was sequenced. f. In 2022, wildfire risk scores were not factors in how distribution ground inspections were sequenced. Inspections were sequenced based on field conditions including physical	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	2022 WMP Section 7.1	Wildfire Mitigation Strategy	N/A
Pre-Discovery 14	CalPA	Set WMP-03	CalPA_Set WMP-03	7	CalPA_Set WMP-03_Q7	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influence where you plan to perform work in 2023. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. PG&E is not conducting EVM in 2023.. b. As described in the 2023 WMP Section 8.1.2.1 "Covered Conductor Installation –Distribution," PG&E's System Hardening program, which includes targeted CC installation, focuses on mitigating potential catastrophic wildfire risk caused by distribution overhead assets. The System Hardening Program applies various mitigations to circuit segments that have the highest wildfire risk. For 2023, the highest wildfire risk miles are identified using the following categories: 1. Top Risk Based on Wildfire Distribution Risk Models (WDRM): The primary approach for selecting system hardening miles used two risk prioritization methodologies: (1) top 20 percent circuit segments based on the 2021 WDRM v2 and (2) the Wildfire Feasibility Efficiency (WFE) ranked circuit segments based on the 2022 WDRM v3. Overhead hardening was selected where undergrounding was deemed infeasible for the WDRM v3 selection. 2. Fire Rebuilds: Rebuilding electric distribution lines within towns and communities in the aftermath of catastrophic wildfires. Overhead hardening Fire Rebuild work is identified through a decision tree to determine the type of rebuild (overhead hardening, undergrounding, or other solution) in areas that have been impacted by a wildfire and may include fire-impacted areas in both HFTD and non-HFTD; and 3. PG&E's Public Safety Specialist (PSS) Identified: Locations identified by PG&E's PSS team as presenting elevated wildfire risk, such as ingress/egress constraints and community risk factors. c. As described in the 2023 WMP Section 8.1.2.2 "Undergrounding of Electric Lines and/or Equipment – Distribution," The 2023-2026 undergrounding portfolio is focused on undergrounding lines in the highest risk areas, which include the following: 1. Top Risk-Ranked Circuit Segments Based on WDRMs: The primary approach for selecting miles used two risk prioritization methodologies: (1) Top 20 percent circuit segments based on the 2021 WDRM v2; and (2) the WFE-ranked circuit segments based on the 2022 WDRM v3 and considering undergrounding feasibility. Both approaches used to select undergrounding projects represent approximately 70 percent of our total wildfire risk	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	7.2	Wildfire Mitigation Strategy Development	Wildfire Mitigation Strategy

Pre-Discovery 15	CalPA	Set WMP-03	CalPA_Set WMP-03	8	CalPA_Set WMP-03_Q8	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influence how work in 2023 will be sequenced. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. PG&E is not conducting EVM in 2023. b. The circuit segments selected for the installation of covered conductor in the System Hardening program were based on the highest wildfire risk criteria described in response to Question 7(b). To then sequence projects, PG&E assesses the dependencies and readiness of each project based on the stage of the work (e.g., designing/estimating, permit acquisition, construction) to appropriately schedule each individual project, as the development time for each project can vary widely. Once projects are in the construction phase, schedules can continue to evolve based on various factors that impact project execution, including unanticipated weather, material availability, and customer preference of timing of re-connection. c. The circuit segments selected for the installation of underground lines in the System Hardening program were based on the highest wildfire risk criteria described in response to Question 7(c). To then sequence projects, PG&E assesses the dependencies and readiness of each project in each stage of the work (e.g., designing/estimating, permit acquisition, land rights acquisition, construction) to appropriately schedule each individual project, as the development time for each project can vary widely. Once projects are in the construction phase, schedules can continue to evolve based on various factors that impact project execution including unanticipated weather, material availability, community limitations (e.g., for road closures), customer preference of timing of re-connection, discovery of hard rock, and/or detection of unmarked existing utility infrastructure. d. After the work for 2023 is prioritized based on the process described in response to Q007 part d, the pole replacement sequencing is determined based on each pole's priority bucket, estimating and material readiness, and crew and clearance availability. e. For transmission line, there is no targeted work planned in 2023 for grid sectionalization. For distribution, the 2023 additional sectionalizing and protective device installation work is prioritized by highest reliability benefit and not wildfire risk. f. In 2023, PG&E's sequencing for the ground inspection plan is informed by wildfire consequence as described in 2023 WMP Section 8.1.3.2.1. Detailed inspection activities in HFTD and HFRA are scheduled such that extreme, severe, and high consequence plat maps will be completed by July 31. Medium consequence plat maps will be completed by	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	7.2	Wildfire Mitigation Strategy Development	Wildfire Mitigation Strategy
Pre-Discovery 16	CalPA	Set WMP-03	CalPA_Set WMP-03	9	CalPA_Set WMP-03_Q9	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for eachcircuit or circuit-segment influence where you plan to perform work in 2024. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. PG&E is not conducting EVM in 2024. b. Please refer to the response to Question 7b, which also applies to 2024. c. Please refer to the response to Question 7c, which also applies to 2024. d. Please refer to the response to Question 7d, which also applies to 2024. e. For transmission line, there is no targeted work planned in 2024 for grid sectionalization. For distribution, there is no targeted work planned in 2024 for grid sectionalization as future work related to EPSS reliability will be incorporated into base reliability programs. f. In 2024, PG&E's detailed ground inspection plan will be informed by wildfire risk and wildfire consequence as described in 2023 WMP Section 8.1.3.2.1. PG&E developed a frequency recommendation for each level of wildfire consequence: extreme and severe consequence plat maps will be inspected annually; high consequence plat maps will be inspected every other year; and all other plat maps will be inspected once every three years. Structures that constitute the top 10 percent of wildfire risk but are not already included in a plat map that is being inspected by ground or aerial are also included in the 2024 ground inspection plan. g. In 2024, wildfire risk and wildfire consequence will inform the annual overhead detailed inspection scope at a structure level (in addition to other considerations such as inspection trends and a baseline frequency of every three years for HFTD/HFRA assets). Specifically, highest wildfire risk and wildfire consequence locations were included in the 2024 scope. h. In 2024, PG&E's distribution aerial inspection pilot will be informed by wildfire risk and wildfire consequence as described in 2023 WMP Section 8.1.3.2.1. For aerial inspections, PG&E used the same prioritization framework with the same plat map level designation that we used for detailed ground inspections and is described in Section 8.1.3.2.1. The specific structures and plat maps to be included for inspection in 2024 will depend on 2023 pilot results. i. In 2024, wildfire risk and wildfire consequence will inform the annual overhead detailed inspection scope at a structure level (in addition to other considerations such as inspection trends and a baseline frequency of every three years for HFTD/HFRA assets). Specifically, highest wildfire risk and wildfire consequence locations were included in the 2024 scope. j. PG&E does not have a stand-alone LiDAR distribution inspection program but collects	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	7.2	Wildfire Mitigation Strategy Development	Wildfire Mitigation Strategy
Pre-Discovery 17	CalPA	Set WMP-03	CalPA_Set WMP-03	10	CalPA_Set WMP-03_Q10	For each WMP initiative listed below, please state how the modeled Wildfire Risk Scores for each circuit or circuit-segment influence how work in 2024 will be sequenced. a. EVM b. Covered conductor installation c. Undergrounding d. Distribution pole replacement e. Grid sectionalization f. Detailed inspections of distribution assets g. Detailed inspections of transmission assets h. Aerial inspections of distribution assets i. Aerial inspections of transmission assets j. LiDAR inspections of distribution assets k. LiDAR inspections of transmission assets	a. PG&E is not conducting EVM in 2024. b. Please refer to the response for Question 8b, which also applies to 2024. c. Please refer to the response for Question 8c, which also applies to 2024. d. Please refer to the response for Question 8d, which also applies to 2024. e. There is no targeted work planned in 2024 for grid sectionalization for both transmission or for distribution. f. In 2024, PG&E's sequencing for the ground inspection plan will be informed by wildfire consequence as described in 2023 WMP Section 8.1.3.2.1. Detailed inspection activities in HFTD and HFRA are scheduled such that extreme, severe, and high consequence plat maps will be completed by July 31. Medium consequence plat maps will be completed by October 1. Low consequence plat maps will be completed by December 31. Inspections are also sequenced based on field conditions including physical access, environmental restrictions, permitting constraints and customer refusals. g. In 2024, the overhead transmission assets in scope for inspection are each labeled with the average wildfire risk of their host circuit for consideration in inspection sequencing. Assets are typically grouped by line for execution efficiency. The sequence prioritization also considers operational field knowledge and constraints, including restricted physical access periods, to inform the schedule for completion. h. In 2024, PG&E's sequencing for the pilot aerial inspections will not be directly based on wildfire risk score. However, in areas of overlap with detailed ground inspections, aerial inspections are scheduled to take place in the same time frame as the scheduled ground inspection, which is based on wildfire consequence. Sequencing is based on the scheduled ground inspection as well as operational field knowledge and constraints, including restricted physical access periods. The specific structures and plat maps to be included for inspection in 2024 will depend on 2023 pilot results. i. In 2024, the overhead transmission assets in scope for inspection are each labeled with the average wildfire risk of their host circuit for consideration in inspection sequencing. Assets are typically grouped by line for execution efficiency. The sequence prioritization also considers operational field knowledge and constraints, including restricted physical access periods, to inform the schedule for completion.	Holly Wehrman	2/7/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_003.zip	0	N/A	7.2	Wildfire Mitigation Strategy Development	Wildfire Mitigation Strategy
Pre-Discovery 18	CalPA	Set WMP-04	CalPA_Set WMP-04	1	CalPA_Set WMP-04_Q1	For each WMP initiative for which you forecast capital expenditures in 2023 to be at least two times actual capital expenditures in 2022, please provide: a) The name of the initiative as it is identified in your 2023-2025 WMP b) The WMP Initiative number in Table 11 of your 2023-2025 WMP c) The name of the initiative as it is identified in your 2022 WMP Update d) The WMP Initiative number in Table 12 of your 2022 WMP Update e) An explanation for the projected increase.	a) 2023 WMP financials are mapped per WMP Initiative Activities as laid out in Table 11 from Energy Safety. As the 2023 WMP is a new cycle with new mapping of financials by activities that align with the 2023 WMP narrative, there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view. Below are the 2023 WMP activities and section numbers where 2023 capital forecast is at least two times compared to the 2022 recorded costs. • Customer support in wildfire and PSPS emergencies – section 8.4.6 • Traditional Overhead Hardening Transmission – 8.1.2.5 b) See the response to part a). c) N/A. As explained in response to part a), there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view of 2022 recorded costs. d) N/A, please refer to part c). e) Explanations for the projected increase are below: • Customer support in wildfire and PSPS emergencies – There was a minor cost adjustment/correction in the 2022 recorded costs which resulted in a credit/negative in the 2022 recorded costs as shown in Table 11. • Traditional Overhead Hardening Transmission – We look to complete 43 miles in 2023 as compared to 38 miles in 2022. In addition, the 2022 recorded costs reported in Table 11 are too low due to missing some costs. The 2022 recorded for this initiative should be $7.9M instead of $4.9M. We will correct this item in Table 11 pursuant to the 2023-2025	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_004.zip	0	N/A	Section 4.3	Proposed Expenditures	N/A

Pre-Discovery 19	CalPA	Set WMP-04	CalPA_Set WMP-04	2	CalPA_Set WMP-04_Q2	For each WMP initiative for which you forecast capital expenditures in 2024 to be at least two times actual capital expenditures in 2022, please provide: a) The name of the initiative as it is identified in your 2023-2025 WMP b) The WMP Initiative number in Table 11 of your 2023-2025 WMP c) The name of the initiative as it is identified in your 2022 WMP Update d) The WMP Initiative number in Table 12 of your 2022 WMP Update e) An explanation for the projected increase.	a) 2023 WMP financials are mapped per WMP Initiative Activities as laid out in Table 11 from Energy Safety. As the 2023 WMP is a new cycle with new mapping of financials by activities that align with the 2023 WMP narrative, there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view. Below are the 2023 WMP activities and section number where the 2024 capital forecast is at least two times compared to the 2022 recorded costs. • Customer support in wildfire and PSPS emergencies – section 8.4.6 b) See the response to part a). c) N/A. As explained in part a) there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view of 2022 recorded costs. d) N/A, please refer to the response to part c). e) Explanations for the projected increase are below: • Customer support in wildfire and PSPS emergencies – There was a minor cost adjustment/correction in the 2022 recorded costs which resulted in a credit/negative in the	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_004.zip	0	N/A	Section 4.3	Proposed Expenditures	N/A
Pre-Discovery 20	CalPA	Set WMP-04	CalPA_Set WMP-04	3	CalPA_Set WMP-04_Q3	For each WMP initiative for which you forecast operating expenditures in 2023 to be at least two times actual operating expenditures in 2022, please provide: a) The name of the initiative as it is identified in your 2023-2025 WMP b) The WMP Initiative number in Table 11 of your 2023-2025 WMP c) The name of the initiative as it is identified in your 2022 WMP Update d) The WMP Initiative number in Table 12 of your 2022 WMP Update e) An explanation for the projected increase.	a) 2023 WMP financials are mapped per WMP Initiative Activities as laid out in Table 11 from Energy Safety. As the 2023 WMP is a new cycle with new mapping of financials by activities that align with the 2023 WMP narrative, there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view. Below are the 2023 WMP activities and section numbers where 2023 operating expense forecasts are at least two times compared to the 2022 recorded costs. • Other technologies and systems not listed above – section 8.1.2.12 • Environmental monitoring systems – 8.3.2 • Fall-in mitigation 8.2.3.4 b) See the response to part a). c) N/A. As explained in part a) there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view of 2022 recorded costs. d) N/A, please refer to the response to part c). e) Explanations for the projected increases are below: • Other technologies and systems not listed above – The 2022 recorded costs in Table 11 are too low due to missing some costs. The 2022 recorded costs need to be adjusted to pull in recorded costs for Substation animal abatement. We will correct this item in Table 11 pursuant to the 2023-2025 WMP Guidelines from Energy Safety. • Environmental monitoring systems – The forecast increase in 2023 is mainly driven by anticipated weather station maintenance work such as calibrations. • Fall-in mitigation – The forecast increase is due to implementing three new VM programs starting in 2023 that support fall-in mitigations (VM for Operational Mitigations, Tree Removal Inventory, Focused Tree Inspections). Please refer to the 2023 WMP narrative in	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_004.zip	0	N/A	Section 4.3	Proposed Expenditures	N/A
Pre-Discovery 21	CalPA	Set WMP-04	CalPA_Set WMP-04	4	CalPA_Set WMP-04_Q4	For each WMP initiative for which you forecast operating expenditures in 2024 to be at least two times actual operating expenditures in 2022, please provide: a) The name of the initiative as it is identified in your 2023-2025 WMP b) The WMP Initiative number in Table 11 of your 2023-2025 WMP c) The name of the initiative as it is identified in your 2022 WMP Update d) The WMP Initiative number in Table 12 of your 2022 WMP Update e) An explanation for the projected increase.	a) 2023 WMP financials are mapped per WMP Initiative Activities as laid out in Table 11 from Energy Safety. As the 2023 WMP is a new cycle with new mapping of financials by activities that align with the 2023 narrative, there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view. Below are the 2023 WMP activities and section numbers where 2024 operating expense forecasts are at least two times the 2022 recorded costs. • Other technologies and systems not listed above – section 8.1.2.12 • Microgrids – section 8.1.2.7 • Environmental monitoring systems – 8.3.2 • Fall-in mitigation 8.2.3.4 b) See the response to part a). c) N/A. As explained in part a), there is not an apples-to-apples re-mapping of costs back to the 2022 WMP view. Thus, the comparison can only be made using the 2023 WMP view of 2022 recorded costs. d) N/A. Please refer to the response to part c). e) Explanations for the projected increases are below: • Other technologies and systems not listed above – The 2022 recorded costs are too low by anticipated weather station maintenance work such as calibrations. • Fall-in mitigation – The forecast increase is due to implementing three new VM programs that support fall-in mitigations (VM for Operational Mitigations, Tree Removal Inventory, Focused Tree Inspections). Please refer to the narrative in section 8.2.3.4 of the 2023 WMP for more details due to missing some costs. The 2022 recorded costs need to be adjusted to pull in recorded costs for Substation animal abatement. We will correct this item in Table 11 pursuant to the 2023-2025 WMP Guidelines from Energy Safety. • Microgrids – The projected increase is based on forecast and anticipated projects put forward to the CPUC in PG&E's Microgrids Incentive Program Implementation Plan. The plan is currently awaiting a CPUC Decision. • Environmental monitoring systems – The forecast increase in 2023/2024 is mainly driven.	Holly Wehrman	2/7/2023	3/7/2023	3/7/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_004.zip	0	N/A	Section 4.3	Proposed Expenditures	N/A
Pre-Discovery 22	CalPA	Set WMP-05	CalPA_Set WMP-05	1	CalPA_Set WMP-05_Q1	In response to Data Request CalAdvocates-PGE-2022WMP-31 on September 8, 2022, PG&E provided information regarding its Wildfire Distribution Risk Model version 3 (WDRM v3). Please provide an updated response to questions 1-7 of the above-referenced data request, including any new or changed information since PG&E's original response. If the response to a question has not changed, please so indicate.	No changes have been made to WDRM v3 since the September 8, 2022 response.	Holly Wehrman	2/10/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_005.zip	0	N/A	2022 WMP Section 4.5	Model Metrics and Calculation Methodologies	WDRM v3
Pre-Discovery 23	CalPA	Set WMP-05	CalPA_Set WMP-05	2	CalPA_Set WMP-05_Q2	a) Have you identified transportation corridors within your service territory where falling or failing lines or poles could currently limit egress and/or ingress during an emergency? b) If the answer to part (a) is yes, please describe how you identify such transportation corridors. c) If available, please provide a geospatial data file that contains all current identified transportation corridors with ingress and egress hazards.	a) The potential of falling or failing lines or poles near identified transportation corridors is not currently reflected in our risk modeling. PG&E Public Safety Specialists with experience as career wildland firefighters have reviewed general egress and/or ingress concerns when evaluating circuits or circuit segments for potential system hardening work. b) Not applicable c) Not applicable	Holly Wehrman	2/10/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_005.zip	0	N/A	8.1.3	Asset Management and Inspections	N/A
Pre-Discovery 24	CalPA	Set WMP-05	CalPA_Set WMP-05	3	CalPA_Set WMP-05_Q3	Please fill out the attached spreadsheet, CalAdvocates-PGE-2023WMP-05 Attachment 1, requesting information regarding your asset inspections in 2022.	Please see attachment "WMP-Discovery2023_DR_CalAdvocates_005-Q003Atch01.xlsx" for the requested information	Holly Wehrman	2/10/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_005.zip	1	N/A	8.1.3	Asset Management and Inspections	Inspections completed in 2022
Pre-Discovery 25	CalPA	Set WMP-05	CalPA_Set WMP-05	4	CalPA_Set WMP-05_Q4	Please augment Table 13 of the non-spatial data tables in your WMP Quarterly Data Report for Q4 of 2022, which reports asset-related corrective notifications on electric circuits that were open at the end of the quarter, as follows. a. Add the following information in separate columns: i. Name of the associated circuit ii. ID number of the associated circuit iii. Geographic latitude in decimal degrees, truncated to seven decimal places iv. Geographic longitude in decimal degrees, truncated to seven decimal places v. Priority of the original notification, using PG&E's internal priority level codes vi. Object/damage code or other internal description of defect b. Please complete column b ("Equipment type") of Table 13. c. Please complete or explain why each of the below columns is not applicable: i. Column i ii. Column j iii. Column k	a-b. Please see attachments "WMP-Discovery2023_DR_CalAdvocates_005-Q004Atch01.xlsb" for the requested Distribution information and "WMP Discovery2023_DR_CalAdvocates_005-Q004Atch02.xlsx" for the requested Transmission information. c. Please note that columns i, j, k, and l will not be available for Distribution and Transmission circuits until the 2023 Q1 Quarterly Data Report (QDR) because the data is not ready, and due to recent changes to the standard that resulted in a substantial reassessment of our notification data.	Holly Wehrman	2/10/2023	3/10/2023	3/10/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_005.zip	2	N/A	2022 Q4 QDR	Asset Management and Inspections	tags

Pre-Discovery 26	CalPA	Set WMP-06	CalPA_Set WMP-06	1	CalPA_Set WMP-06_Q1	Provide your workplan that describes where you will undertake EVM projects in 2023. This workplan should be in an Excel format, with circuit-segments as rows. Please include the following information in separate columns in the Excel spreadsheet at a minimum: a) Circuit name b) Circuit ID number c) Circuit-segment name d) Circuit-segment ID number e) EVM miles to be completed in 2023 f) Risk ranking(s) for the circuit segment.	The EVM program concluded at the end of 2022. There is no EVM workplan for 2023	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2023-2025 WMP 8.2.3	Vegetation Management	EVM
Pre-Discovery 27	CalPA	Set WMP-06	CalPA_Set WMP-06	2	CalPA_Set WMP-06_Q2	Provide your workplan that describes where you will undertake EVM projects in 2024. This workplan should be in an Excel format, with circuit-segments as rows. Please include the following information in separate columns in the Excel spreadsheet at a minimum: a) Circuit name b) Circuit ID number c) Circuit-segment name d) Circuit-segment ID number e) EVM miles to be completed in 2024 f) Risk ranking(s) for the circuit segment.	The EVM program concluded at the end of 2022. There is no EVM workplan for 2024.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2023-2025 WMP 8.2.3	Vegetation Management	EVM
Pre-Discovery 28	CalPA	Set WMP-06	CalPA_Set WMP-06	3	CalPA_Set WMP-06_Q3	In response to Data Request CalAdvocates-PGE-2022WMP-11, Question 2, March 3, 2022, PG&E provided its 2022 EVM workplan. Please provide an updated version of this workplan that lists the actual EVM mileage performed in each circuit-segment in 2022 as a new column. Rows should be added as needed to cover all circuit-segments where you performed EVM work in 2022 (even if those circuit-segments were not included in the original workplan).	Please see "WMP-Discovery2023_DR_CalAdvocates_006-Q003Atch01.xlsx" for actual 2022 EVM mileage data broken down by circuit segment. Column G on tab '2022 EVM Miles Planned' contains the number of miles planned for EVM work in 2022. Column G on tab '2022 EVM Miles Completed' contains the number of miles that were completed and work verified in 2022.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2022 WMP 7.3.5.2	Vegetation Management and Inspections	Enhanced Vegetation Management
Pre-Discovery 29	CalPA	Set WMP-06	CalPA_Set WMP-06	4	CalPA_Set WMP-06_Q4	In response to Data Request CalAdvocates-PGE-2022WMP-16, Question 11, March 23, 2022, PG&E stated the following: "Through 2022, the EVM program includes strike trees evaluation and hazard trees mitigation, overhang clearing and radial clearance. Starting in 2023, Enhanced VM only includes overhang clearing." a) Is the statement above still accurate as of the date of this request? b) If the answer to part (a) is no, please update the above statement to reflect PG&E's vegetation management strategy for 2023. c) If the answer to part (a) is no, please update the above statement to reflect PG&E's vegetation management strategy for 2024.	a) To maximize reduction of wildfire risk effectively and efficiently, the Enhanced Vegetation Management (EVM) program concluded at the end of 2022. b) Three new VM programs will be incorporated into the 2023 workplan. These programs for VM are Focused Tree Inspections, VM for Operational Mitigations, and Tree Removal Inventory. • Focused Tree Inspections: We developed specific areas of focus (referred to as Areas of Concern (AOC)), primarily in the HFRA, where we will concentrate our efforts to inspect and address high-risk locations, such as those that have experienced higher volumes of vegetation damage during PSPS events, outages, and/or ignitions. • VM for Operational Mitigations: This program is intended to help reduce outages and potential ignitions using a risk informed, targeted plan to mitigate potential vegetation contacts based on historic vegetation caused outages on EPSS enabled circuits. We will initially focus on mitigating potential vegetation contacts in circuit protection zones that have experienced vegetation caused outages. Scope of work will be developed by using EPSS and historical outage data and vegetation failure from the WDRM v3 risk model. EPSS-enabled devices vegetation outages extent of condition inspections may generate additional tree work. • Tree Removal Inventory: This is a long-term program intended to systematically work down trees that were previously identified through EVM inspections. We will develop annual risk-ranked work plans and mitigate the highest risk-ranked areas first and will continue monitor the condition of these trees through our established inspection programs. c) The three programs identified above will continue in 2024. These combined three	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2022 WMP 7.3.5	Vegetation Management and Inspections	Program Costs
Pre-Discovery 30	CalPA	Set WMP-06	CalPA_Set WMP-06	5	CalPA_Set WMP-06_Q5	In response to Data Request CalAdvocates-PGE-2022WMP-15, Question 16, March 18, 2022, PG&E provided the following table, which shows spending on vegetation management programs in thousands of dollars (actual figures for 2019-2021 and forecast figures for 2022-2023): Please update this table as follows: a) Update the 2022 column to state actual spending in 2022. b) Update the 2023 column to show PG&E's current forecasts for 2023. c) Add a column that shows PG&E's current forecasts for 2024. d) Please add rows as necessary, if any changes in PG&E's vegetation management strategy have created new initiatives or categories of spending.	Please see updated table below with 2022 Actuals, and our current forecasts for 2023 and 2024.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	Vegetation Management	N/A	N/A
Pre-Discovery 31	CalPA	Set WMP-06	CalPA_Set WMP-06	6	CalPA_Set WMP-06_Q6	Please provide a list of any incidents in 2022 where the actions of a VM contractor posed a safety risk to workers and/or the public. "Safety risk" here is defined as any occurrence on a worksite where the contractor's actions created a safety hazard for either workers or the general public. For each instance, please provide: a) The date you were informed of the safety issue b) The date that the original work that created the safety issue was performed c) Whether the safety issue concerned a transmission or distribution circuit d) The vegetation management initiative involved in the original work e) A brief description of the safety issue involved.	Please refer to Attachment "WMP-Discovery2023_DR_CalAdvocates_006-Q006Atch01CONF.xlsx" for a list of all contractors involved safety incidents that took place in 2022. This data includes, but is not limited to: • Contractor Name/ParentCo: The contractor/parent company involved in the incident. • IncDate: The date of the incident. • Date EN: The date the incident was formally reported and logged. • Division: The division where the incident took place. • Inc Types: The incident type (ie line strike) • Incident Description: A brief description of the incident. • Program: Description on which initiative a contractor was working on, on the date of incident. • Corrective Action: A description of the action(s) PG&E took to prevent recurrence. Please note, both Distribution and Transmission contractor incidents are included in the attachment. These records are pulled from the Enterprise Contractor Incident Records Tool (ECIRT) database. The ECIRT database incident recording process does not have a space for inputting Distribution or Transmission circuit information, therefore we are unable to provide that information on the spreadsheet because our system does not track the	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	Vegetation Management	N/A	N/A
Pre-Discovery 32	CalPA	Set WMP-06	CalPA_Set WMP-06	7	CalPA_Set WMP-06_Q7	In response to Data Request CalAdvocates-PGE-2022WMP-14, Question 13, March 15, 2022, PG&E provided its 2022 system hardening workplan for the categories referred to in parts (a)-(d) below. Please provide an updated version of this workplan with additional columns to show the actual system hardening work performed in each circuit-segment in 2022 for each of these categories. Please add rows as needed to cover all circuit-segments where PG&E performed system hardening work in 2022 (even if those circuit-segments were not included in the original workplan). a) Installation of covered conductor b) Installation of underground conductor c) Removal of overhead conductor d) Removal of overhead conductor associated with remote grid work.	Note, for CalAdvocates-PGE-202ZWMP-14, Question 13, the projects listed in the 2022 columns were only for projects that overlapped with 2021 completed miles. It did not represent a comprehensive list of 2022 projects. Similarly, the 2020 columns were only for projects that overlapped with 2021 completed miles. It did not represent a comprehensive list of 2020 projects. See "WMP-Discovery2023_DR_CalAdvocates_006-Q007Atch01CONF.xlsx." This file includes the 2022 system hardening completed work in the below columns: a. Installation of covered conductor: See column O b. Installation of underground conductor: See column P c. Removal of overhead conductor: See column Q. Note, this removal work is not associated with the lines removed from overhead for installation of underground projects. It is strictly overhead conductor completely de-energized and removed. d. Removal of overhead conductor associated with remote grid work: N/A. There are no removals from remote grid work in 2022. Since the installation of remote grid generating units work occurred late in 2022, the associated line removal of de-energized conductor will take place in 2023. Similar to the response to CalAdvocates-PGE-2022WMP-14, Question 13, the data includes project information from 2021 and 2023 only where projects overlap with those years. Thus, the 2021 and 2023 data is not comprehensive. Additionally, because this question is associated with the System Hardening workplan only,	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2022 WMP Section 7.3.3.17	Grid Design and System Hardening	System Hardening

Pre-Discovery 33	CalPA	Set WMP-06	CalPA_Set WMP-06	8	CalPA_Set WMP-06_Q8	Provide your workplan that describes where and when you will perform system hardening on distribution circuits in 2023. For projects that you expect to partially complete in 2023 (i.e., projects that started before 2023 and are expected to continue in 2023, or projects that are expected to be completed after 2023), please include the project and report the work that you forecast will actually be performed in calendar year 2023. For each project, include the following information in separate columns, at a minimum: a) Order number b) MAT code c) Program d) Circuit ID number e) Circuit-segment name or ID number (if the project affects more than one circuit-segment, please identify each one) f) Relevant wildfire risk score(s) from the wildfire risk model that you are using to estimate distribution risk in your 2023-2025 WMP filing g) The expected or actual start date of the project. h) The expected completion date of the project. i) Length (in circuit miles) of covered conductor to be installed in 2023. j) Length (in circuit miles) of underground conductor to be installed in 2023. k) Length (in circuit miles) of overhead conductor to be permanently removed in 2023 and replaced by underground conductor (note that this may differ slightly from the previous section due to differing overhead and underground routes). l) Length (in circuit miles) of overhead conductor to be permanently removed in 2023 and not replaced with covered conductor or undergrounded) m) Length (in circuit miles) of any other type of system hardening project to be installed in 2023 (if this is greater than zero, please describe the type of system hardening project).	Please see attachment "WMP-Discovery2023_DR_CalAdvocates_006-Q008Atch01CONF.xlsx." a. See columns A (order number), and B (order description) b. See column C c. See column D d. See columns E e. See column F f. See columns G, I and K Column G shows the Applicable Risk Model that was used for selecting the project and putting it into scope. Risk Rank scores, shown in Columns I and K, are based on the Wildfire Distribution Risk Model (WDRM) for Version 2 and Version 3, respectively. The Risk ranking outcomes are the results of the relevant risk model (e.g., WDRM v2, WDRM v3) where circuit segments are ranked on a 1 to N basis, where 1 is the highest risk circuit segment, and N is the lowest risk. g. See column L h. See column M i. See column Z j. See column AA k. N/A – PG&E does not track length (in circuit miles) of overhead conductor to be permanently removed and replaced by underground. l. See column AB m. N/A The data includes project information from prior to 2022 and 2022 where projects overlap with these years. Data is provided in the same file for 2024 that is responsive to Question Q009. Additionally, because this question is associated with the System Hardening workplan only, this data does not include undergrounding mileage associated with the Butte Rebuild.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2023 WMP Section 8.1.2.5	System Hardening	N/A
Pre-Discovery 34	CalPA	Set WMP-06	CalPA_Set WMP-06	9	CalPA_Set WMP-06_Q9	Provide your workplan that describes where and when you will perform system hardening on distribution circuits in 2024. For projects that you expect to partially complete in 2024 (i.e., projects that are expected to start before 2024 and are expected to continue in 2024, or projects that are expected to be completed after 2024), please include the project and report the work that you forecast will actually be performed in calendar year 2024. For each project, include the following information in separate columns, at a minimum: a) Order number b) MAT code c) Program d) Circuit ID number e) Circuit-segment name or ID number (if the project affects more than one circuit-segment, please identify each one) f) Relevant wildfire risk score(s) from the wildfire risk model that you are using to estimate distribution risk in your 2023-2025 WMP filing g) The expected or actual start date of the project. h) The expected completion date of the project. i) Length (in circuit miles) of covered conductor to be installed in 2024. j) Length (in circuit miles) of underground conductor to be installed in 2024. k) Length (in circuit miles) of overhead conductor to be permanently removed in 2024 and replaced by underground conductor (note that this may differ slightly from the previous section due to differing overhead and underground routes). l) Length (in circuit miles) of overhead conductor to be permanently removed in 2024 and not replaced with covered conductor or undergrounded) m) Length (in circuit miles) of any other type of system hardening project to be installed in 2024 (if this is greater than zero, please describe the type of system hardening project).	Please see "WMP-Discovery2023_DR_CalAdvocates_006-Q008Atch01CONF.xlsx." a. See columns A (order number), and B (order description) b. See column C c. See column D d. See columns E e. See column F f. See columns G, I and K Column G shows the Applicable Risk Model that was used for selecting the project and putting it into scope. Risk Rank scores, shown in Columns I and K, are based on the Wildfire Distribution Risk Model (WDRM) for Version 2 and Version 3, respectively. The Risk ranking outcomes are the results of the relevant risk model (e.g., WDRM v2, WDRM v3) where circuit segments are ranked on a 1 to N basis, where 1 is the highest risk circuit segment, and N is the lowest risk. g. See column L h. See column M i. See column AD j. See column AE k. N/A – PG&E does not track length (in circuit miles) of overhead conductor to be permanently removed and replaced by underground. l. See column AF m. N/A The data includes project information from prior to 2022, 2022, and 2023 where projects overlap with these years. Data is provided in the same file for 2023 that is responsive to Question Q008. Additionally, because this question is associated with the System Hardening workplan only, this data does not include undergrounding mileage associated with the Butte Rebuild.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2023 WMP Section 8.1.2.5	System Hardening	N/A
Pre-Discovery 35	CalPA	Set WMP-06	CalPA_Set WMP-06	10	CalPA_Set WMP-06_Q10	For each of your 2023-2025 WMP system hardening initiatives, please provide disaggregated information related to expenditures and circuit miles treated in the attached table, CalAdvocates PGE-2023WMP-06 Attachment 1. Add columns as needed.	Please see details on the cost and mileage breakouts in attached file "WMP Discovery2023_DR_CalAdvocates_006-Q010Atch01.xlsx.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2023 WMP Section 4.3	Proposed Expenditures	System Hardening
Pre-Discovery 36	CalPA	Set WMP-06	CalPA_Set WMP-06	11	CalPA_Set WMP-06_Q11	Please provide a spreadsheet listing (as rows) each undergrounding project completed during the period of January 1, 2022, through December 31, 2022. For each project, please provide the following information (as columns): a) Project ID number or other identifier b) Circuit ID c) ID of each circuit segment that was entirely undergrounded in the project d) ID of each circuit segment that was partially undergrounded in the project e) County or counties where undergrounding took place f) Project start date g) Project completion date h) Total circuit-miles undergrounded i) Total miles of trenching required j) Total life-cycle electric costs5 of the project (i.e., costs attributed to your electric facilities), including costs for planning, design, permitting, and construction k) Total life-cycle costs of the project, including costs attributed to non-electric utilities, including costs for planning, design, permitting, and construction l) Whether this was a Rule 20 project6 (yes/no) m) Whether this was a WMP project (yes/no) n) Whether this was a post-wildfire rebuild project (yes/no) o) Whether you shared trenches for this project with any telecommunications utilities (yes/no) p) Whether you shared trenches for this project with gas facilities (yes/no).	See "WMP-Discovery2023_DR_CalAdvocates_006-Q011Atch01CONF.xlsx." a) Project ID number or other identifier – See columns A (order Number) and B (Order Description) b) Circuit ID – See column C c) ID of each circuit segment that was entirely undergrounded in the project – Our undergrounding projects are split into multiple phases within a given circuit protection zone (CPZ) shown in Column E. The undergrounding of complete CPZs is a multi-year effort that cannot be captured in the data shown for a single year. d) ID of each circuit segment that was partially undergrounded in the project – Per response to (c), our undergrounding projects are split into multiple phases within a given circuit protection zone (CPZ). By reviewing data solely from a single year, it is not possible to determine completion of an entire CPZ. e) County or counties where undergrounding took place – See column I f) Project start date – see column J g) Project completion date – See column K h) Total circuit-miles undergrounded – Column U i) Total miles of trenching required – This information is not tracked by PG&E. j) Total life-cycle electric costs4 of the project (i.e., costs attributed to your electric facilities), including costs for planning, design, permitting, and construction – See column X k) Total life-cycle costs of the project, including costs attributed to non-electric utilities, including costs for planning, design, permitting, and construction. – There is no non electric utility work in the scope of system hardening undergrounding l) Whether this was a Rule 20 project5 (yes/no) – See column F m) Whether this was a WMP project (yes/no) – See column G n) Whether this was a post-wildfire rebuild project (yes/no) – See column H o) PG&E did not share trenches for any projects identified in "WMP Discovery2023_DR_CalAdvocates_006-Q011Atch01CONF.xlsx p) Whether you shared trenches for this project with gas facilities (yes/no) – No. For system hardening, we do not share trenches with gas. The data includes project information from 2021 where projects overlap with 2022	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2023 WMP 8.1.2.2	Grid Design and System Hardening	Undergrounding
Pre-Discovery 37	CalPA	Set WMP-06	CalPA_Set WMP-06	12	CalPA_Set WMP-06_Q12	Please provide a geodatabase file with a polyline feature for each undergrounding project completed during the period of January 1, 2022 through December 31, 2022. In addition to the spatial location, please provide the following attributes for each project: a) Project ID number or other identifier, matching part (a) of the previous question b) Circuit ID c) Project completion date.	See attachment "WMP-Discovery2023_DR_CalAdvocates_006-Q012Atch01CONF.zip." Please note that the data reflected in this GIS geospatial file will not match the data set from Q11 due to the process time lag between construction completion and being fully mapped in GIS.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	1	N/A	2023 WMP 8.1.2.2	Grid Design and System Hardening	Undergrounding

Pre-Discovery 38	CalPA	Set WMP-06	CalPA_Set WMP-06	13	CalPA_Set WMP-06_Q13	Identify any ignitions in 2022 associated with assets where you had an existing corrective notification at the time of the ignition. Please provide a spreadsheet listing each such ignition (as rows) with the following information in separate columns: a) Unique ignition ID b) Date of ignition c) Cause of ignition d) Type of asset associated with the ignition e) Acres burned f) Number of structures burned, if any g) Number of injuries associated with ignition, if any h) Asset ID of asset associated with ignition i) Circuit ID number of circuit associated with ignition j) Notification number(s) for the existing maintenance tag on the asset in question.	Please see the table below identifying 2022 CPUC reportable ignitions where the asset involved in the ignition was associated with an existing open corrective maintenance notification at the time of the event. Ignition ID Date of Ignition Suspected Cause Equipment Type Associated With Ignition Fire Size Structures Destroyed Injuries Asset ID Circuit ID Existing Maintenance Notifications 20220374 4/6/2022 Equipment Failure Conductor - Primary 0.26- 9.99 Acres 0 0 101894229 MESA 1103 121931783 20220613 5/17/2022 Equipment Failure Splice/ Clamp/ Connector 1 meter - <3	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2022 WMP Section 7.3.4	Asset Management and Inspections	N/A
Pre-Discovery 39	CalPA	Set WMP-06	CalPA_Set WMP-06	14	CalPA_Set WMP-06_Q14	a) Has PG&E's Asset Failure Analysis Team causally connected any ignitions that occurred in 2022 to assets with existing asset or vegetation corrective notifications at the time of ignition? b) If the answer to part (a) is yes, please provide the following information on each such ignition: i. Unique ignition ID (matching the previous question) ii. Date of ignition iii. Cause(s) identified by the Asset Failure Analysis Team iv. The type of corrective notification that was linked to the ignition (i.e., the priority level and whether it related to asset management or vegetation management). v. Copies of associated reports or investigations performed by the Asset Failure Analysis Team.	a) Yes, please see below. b) Two ignitions have been identified that meet these criteria: Ignition ID Date of Ignition Cause Type of Corrective Notification Copies of Associated Reports 20221278 7/28/2022 The cause of this ignition is still being finalized. EC Notification 118429275 – Pole Replacement The report in question is still being finalized and can be provided upon completion. 20222013 11/16/2022 Broken crossarm EC Notification 123866774 – Crossarm replacement (later updated to pole replacement) The report in question is still being finalized and can be provided upon completion.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2022 WMP 7.3.7	Data Governance	Asset Failure Analysis
Pre-Discovery 40	CalPA	Set WMP-06	CalPA_Set WMP-06	15	CalPA_Set WMP-06_Q15	Per PG&E's response to Data Request CalAdvocates-PGE-2022WMP-17, Question 13, March 24, 2022, PG&E's inspection strategy in 2022 was to complete detailed inspections on all assets in HFTD Tier 3 and Zone 1, and approximately one-third of assets in HFTD Tier 2. a) Please describe any changes to the above strategy for PG&E's detailed distribution inspections in 2023. b) Please describe any changes to the above strategy for PG&E's detailed transmission inspections in 2023. c) Please describe any changes to the above strategy for PG&E's detailed distribution inspections in 2024. d) Please describe any changes to the above strategy for PG&E's detailed transmission inspections in 2024.	a) Beginning in 2023, PG&E's detailed inspections of distribution structures in high fire areas will be informed by wildfire consequence as provided PG&E's Wildfire Distribution Risk Model v3. PG&E will complete a detailed inspection on each structure every one to three years. For additional details on this strategy, please refer to Section 8.1.3.2 of our 2023 WMP. This differs from our 2022 strategy where we inspected all of Tier 3 and one-third of Tier 2. b) There are no major changes in our strategy compared to last year. Transmission detailed inspections in 2023 are informed by predictive models of asset health and wildfire consequence. HFTD (Tier 3, Tier 2, and Zone 1) and HFRA structures have a baseline inspection frequency of once every three years. In addition to this baseline frequency, structures may be added to the detailed inspection scope annually based on the following considerations: • Wildfire Risk, which is informed by the asset health Transmission Composite Model V1 (TCM) annualized probability of failure and the Wildfire Consequence Model V3.4. • Other factors involving data not currently integrated into the Wildfire Transmission Risk Model V1 (ex: inspection result trends, historic fire locations etc.) For additional details on this strategy, please refer to Section 8.1.3.1 of our 2023 WMP. c) No major changes are anticipated to the detailed distribution ground inspections strategy in 2024. However, as PG&E's risk models and understanding of the distribution system continues to mature, we may adjust the strategy described above or establish additional criteria to define the structures for inspection each year. d) There is no major anticipated change to detailed inspection scoping strategy in 2024. However, the considerations or thresholds used to define the additional structures may vary	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	2022 WMP 7.3.4.1 and 7.3.4.14	Asset Management and Inspections	N/A
Pre-Discovery 41	CalPA	Set WMP-06	CalPA_Set WMP-06	16	CalPA_Set WMP-06_Q16	Regarding your PSPS circuit modeling capabilities: a) Please describe your present circuit modeling capabilities with regard to PSPS decision making ("PSPS circuit modeling capabilities"), including with what level of granularity they are able to determine how circuit hardening efforts or other changes to a line segment will affect PSPS thresholds. b) Please describe any improvements to the present PSPS circuit modeling capabilities that you expect to implement in 2023. c) Please describe any improvements to the present PSPS circuit modeling capabilities that you expect to implement in 2024. d) Please describe the expected state of your PSPS circuit modeling capabilities at the conclusion of the 2023-2025 WMP cycle.	a) For all questions below, PG&E understands circuit modeling to mean the level of granularity at which a utility can model the configuration of its electrical assets and de-energize them as such. PG&E models and de-energizes circuits utilizing all switching devices on the system that do not pose ignition risks. The effects of hardening and other changes to lines will be accounted for by our IPW model which uses machine learning to quantify past outages and ignitions and uses those as a basis for ignition and outage potential going forward which feeds into our PSPS modeling. Thus, any improvements to the system or changes would be incorporated as their historical performance changes. b) As mentioned, PG&E models circuits at the most granular level for de-energization taking into account all devices on the system that do not pose an ignition risk. c) As mentioned, PG&E models circuits at the most granular level for de-energization taking into account all devices on the system that do not pose an ignition risk. d) As mentioned, PG&E models circuits at the most granular level for de-energization taking	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	0	N/A	PSPS	N/A	N/A
Pre-Discovery 42	CalPA	Set WMP-06	CalPA_Set WMP-06	17	CalPA_Set WMP-06_Q17	a) Have you developed Public Safety Power Shutoff (PSPS) risk scores at the circuit-segment level? b) Have you developed Enhanced Powerline Safety Settings (EPSS) risk scores at the circuit segment level? c) If the answer to either parts (a) or (b) is yes, please provide a geodatabase file containing, as line features, the most recent spatial data for all circuit segments for which you have modeled PSPS or EPSS risk scores. Include the following attributes for each circuit segment: i. Circuit Identification Number ii. Circuit Name iii. Circuit Segment Identification Number iv. Circuit segment-level PSPS Risk Score (if applicable) v. Circuit segment-level EPSS Risk Score (if applicable). d) If the answer to either parts (a) or (b) is yes, please provide a spreadsheet that lists (as rows) each circuit-segment for which you have modeled PSPS or EPSS risk scores. Include the following attributes for each circuit segment: i. Circuit Identification Number ii. Circuit Name iii. Circuit Segment Identification Number iv. Circuit segment-level PSPS Risk Score (if applicable) v. Circuit segment-level EPSS Risk Score (if applicable) e) If the answer to part (a) is no, does PG&E intend to develop PSPS risk scores for circuit segments? f) If the answer to part (b) is no, does PG&E intend to develop EPSS risk scores for circuit segments?	a) Yes. This is cited in Section 6.2.1, figure 6.2.1-3. b) No. c) Please see "WMP-Discovery2023_DR_CalAdvocates_006-Q017Atch01CONF.zip" which is a geodatabase file containing the circuit segments along with PSPS risk values and Circuit Segment names. Due to the different circuit segment vintages approximately 400 of the circuit segments are not mapped. d) Yes, please see "WMP-Discovery2023_DR_CalAdvocates_006-Q017Atch02CONF.xlsx" which provides the circuit segment PSPS risk values. e) Not applicable. f) PG&E produces an annual reliability study of EPSS outage activity, which informs reliability mitigation actions. Furthermore, PG&E is exploring incorporating this data into an "EPSS reliability risk" score for circuit segments.	Holly Wehrman	2/10/2023	3/29/2023	3/29/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/2023/CalAdvocates_006.zip	2	N/A	PSPS/EPSS	N/A	N/A

Pre-Discovery 43	CPUC - SPD (Safety Policy Division)	001	CPUC - SPD (Safety Policy Division)_001	1	CPUC - SPD (Safety Policy Division)_001_Q1	REFCL Inquiries: •REFCL Pilot at Calistoga Circuit Segment ID 1102131531 oDescribe various active settings profiles. oDescribe how staged fault testing is planned to be conducted. oExplain how REFCL rides through momentary faults & when REFCL deenergizes line for permanent faults. •Substation Configuration – Describe any substation and/or circuit configuration issues to deploy REFCL •Availability of REFCL – Describe any known barriers to increasing deployment in CA •Explain which risk drivers per Table PG&E-7.1.4-1 REFCL mitigates. •Explain why REFCL is not preferred mitigation for broader deployment and confirm PG&E no longer plans to install REFCL at 2 substations per year per GRC filing.	a. i. The REFCL equipment installed in the substation protects all the primary lines on both Calistoga circuits. Three settings profiles allow for changing fault sensitivity and tripping behavior on the fly based on field conditions/risk. Setting 1 is for low risk with a three second delay before switching the neutral to solid grounding for line protection to clear the fault. Setting 2 is for medium risk with a three second fault ride through before directly tripping the faulted feeder circuit breaker for a sustained fault. Setting 3 is for high risk with no time delay and greatest fault sensitivity and tripping the faulted feeder circuit breaker. ii. Staged fault testing was performed in 2022 with preliminary data collected. A mobile high voltage resistor bank is momentarily connected to stage a fault on the circuit. Normally the system rides through the neutral shift with no service outage from the test. Due to greater line to ground voltages during the testing, the possibility of unplanned outage of line equipment failing is slightly increased. iii. All service transformers on REFCL circuits are connected line to line, so service voltage is maintained during the ground fault. If setting 1 or 2 is active, once a ground fault is detected, a three second time delay elapses before the fault confirmation is performed. If the fault confirmation determines that the fault vanished (momentary fault), then the neutral voltage is returned to normal with no service interruption. If the fault confirmation determines that it is a sustained fault, then the tripping is handled based on the active setting group described in 1ai. b. Due to equipment failures in the substation and on the line in the REFCL demonstration project, PG&E is still evaluating the technology and gaining operational experience with it. In order to deploy REFCL, the primary considerations for deployment are: • Substation voltage regulators: Replace wye-ground connected regulators with line-line connected regulators • Substation feeder breakers: High accuracy current transformers retrofitted • Substation secondary neutral: clearance of substation transformer bank and installation of grounding switch and cable connections to arc suppression coil • Substation physical space: Enough room within the substation for an 16 ft x 28 ft footprint per Ground Fault Neutralizer (GFN). Some substations may require 2 GFNs right away for	Wendy Al-Mukdad	2/23/2023	3/9/2023	3/9/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/SPD_001.zip	0	N/A	8.1.8.1.3	Grid Operations and Procedures	Settings of Other Emerging Technologies (e.g., Rapid Earth Fault Current Limiters)
Pre-Discovery 44	CPUC - SPD (Safety Policy Division)	001	CPUC - SPD (Safety Policy Division)_001	2	CPUC - SPD (Safety Policy Division)_001_Q2	EPSS & Supporting Technologies (DCD & Partial Voltage Detection) Inquiries: •Explain all activities planned to mitigate EPSS reliability impacts. oAre customer support programs (e.g., battery backup) distinct from or linked to those in place for PSPS implementation? •Explain Sensitive Ground Fault settings for EPSS enabled circuit segments. •Explain Downed Conductor Detection (DCD) technology and how it isolates high impedance faults with EPSS. oExplain DCD 2023-2025 Targets (i.e. 500, 400 & 250 protective device controllers or relays) and whether they will cover all HFTD and buffer EPSS circuits. Explain why says To Be Updated. oExplain how many DCD are currently installed including on top 5% risk circuit segments. •Explain Partial Voltage Detection using SmartMeters and how supplements DCD and EPSS.	a. The following incudes activities on-going and planned to mitigate EPSS reliability impacts: Enhanced Outage Review Team (ORT) process that includes additional review of circuit/Circuit Protection Zone (CPZ) performance that when multiple outages occur triggers a Multiple Outage Review (MORE) to drive additional actions if needed to reduce repeat outages going forward. • Continuing Proactive Vegetation Trimming on the Top 12 circuit segments that were identified last year based on number of outages experienced and a projected enablement of over 50% for the fire season. For 2023 we looked at CEMI (customers experiencing multiple outages) impacted customers and evaluated vegetation outages and identified 9 additional circuit protection zones to be added to this approach. • Continuing Extent of Condition assessment and trimming. When a vegetation related EPSS outage occurs the incident location and 5 spans in all directions is inspected by our vegetation management team to identify trimming opportunities to prevent an outage from occurring near the previous location reducing risk and improving reliability. • EPSS CEMI 8+ Targeted customers: 1. Vegetation clearing for CPZ's with multiple veg caused outages as covered above 2. Developing an animal mitigation strategy for animal interaction reduction due to high animal-caused outages when EPSS is enabled. • Fault Indicator Installations Proactively installing 1360 Fault Indicators on EPSS Circuits to expedite outage restoration and assist in finding the cause of outages to be addressed to prevent future unknown outages i. In general, customer support programs for EPSS are linked to those in place for PSPS implementation. In most cases, such as with PG&E's Portable Battery Program (PBP), Disability and Disaster Access and Resource Program (DDARP), and Generator and Battery Rebate Program (GBRP), the programs are the same; PG&E simply expanded eligibility criteria such that programs initially targeting PSPS customer outages now also include the most impacted EPSS customers. One notable exception is the new residential Fixed Power Solutions offering (aka, the Residential Storage Initiative or RSI), which was launched in late 2022. As a new offering, RSI was targeted at EPSS-impacted customers, which happen to	Wendy Al-Mukdad	2/23/2023	3/9/2023	3/9/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/SPD_001.zip	0	N/A	8.1.8.1.1	Grid Operations and Procedures	Protective Equipment and Device Settings
Pre-Discovery 45	CPUC - SPD (Safety Policy Division)	001	CPUC - SPD (Safety Policy Division)_001	3	CPUC - SPD (Safety Policy Division)_001_Q3	EPSS & REFCL Inquiries: •EPSS vs REFCL – Describe the major similarities and differences. oWhat are advantages and disadvantages? □In terms of capability, sectionalization, safety, and reliability? •Phase-to-Ground Faults vs Complex (Multiphase) Faults – What is the risk profile of existing ignitions on PG&E's system and how does REFCL & EPSS mitigate these risks? •Combination of REFCL with EPSS & Other Mitigations – Explain how these could work together, and if PG&E has quantified combined risk-reduction benefits. •Explain the differences in fault energy for EPSS vs REFCL including for low and high impedance faults. oExplain why EPSS is preferred if REFCL fault energy is less than 10% of EPSS fault energy for low impedance faults. oExplain the effectiveness of DCD vs REFCL on high impedance faults	a. In concept, EPSS and REFCL are two very different approaches that share a common goal of attempting to reduce risk associated with ignitions on primary electric distribution systems. i. EPSS – advantages: • Can be implemented on mostly existing equipment and relays • Reduces incident fault energy across all types of faults (Three-phase, line-to line, line-to-ground, etc.) • Reduces incident fault energy through fault clearing time reduction • Helps to reduce backfeed issues associated with 3-wire distribution system by prioritizing gang trip behavior versus single phase fuse operation • Incorporates various technologies for high impedance fault detection (Sensitive Ground Fault (SGF), Downed Conductor Detection (DCD), etc.) • Does not require extensive field high speed measurements or communication beyond traditional SCADA and remote access. (I.e. does not rely on synchrophasor technology) • Does not require changes to system grounding configuration or load connections to implement REFCL – advantages: • Potential for 90% ignition probability reduction for single line to ground faults (Victorian ignition testing). Considering all fault types, an overall ignition probability reduction can be calculated to approximately a 59% reduction. • Fault current limited to 1 Amp for single line to ground faults based on 2022 field testing • Greater sensitivity to high impedance faults (> 5k ohm fault resistance) • Lower short circuit forces for line equipment for ground faults EPSS – disadvantages: • Less capability to sectionalize the system during fault events as compared to traditional protective settings due to the minimal coordination time provided in which can result in lower reliability performance • Fault current is not limited - fault energy is reduced by faster clearing times -	Wendy Al-Mukdad	2/23/2023	3/9/2023	3/9/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/SPD_001.zip	0	N/A	8.1.8.1	Grid Operations and Procedures	Equipment Settings to Reduce Wildfire Risk
Pre-Discovery 46	CPUC - SPD (Safety Policy Division)	001	CPUC - SPD (Safety Policy Division)_001	4	CPUC - SPD (Safety Policy Division)_001_Q4	General risk reduction inquiry: •What's PG&E's goal for long-term risk reduction, particularly reduction of likelihood of ignition and also reduction of consequences, for circuits in HFTDs that are not undergrounded?	PG&E's long term goal is to maximize risk reduction by undergrounding high wildfire risk locations. For locations that will not be undergrounded, we will continue to deploy our suite of Operational Mitigations and other System Resilience Mitigations. Operational Mitigations include programs such as EPSS, equipment maintenance and repair, vegetation management for operational mitigations, and PSPS. System Resilience Mitigations include programs such as covered conductor installation, transmission conductor replacement, line removal, and distribution and transmission HFTD and HFRA open tag reduction. We will also manage system risk through our Comprehensive Monitoring and Data Collection programs include detailed distribution and transmission asset inspection programs, vegetation inspection programs, and monitoring programs such as Distribution Fault Anticipation Installations, Early Fault Detection Sensors and our network of wildfire cameras and weather stations. A complete listing of PG&E's mitigation programs is included in Section 7.2.1. of PG&E's WMP. Table 7.4 in PG&E's WMP shows how we layer different mitigation programs at the circuit segment level to provide system protection and reduce risk. While Table 7.4 shows only PG&E's top risk circuit segments, we apply this approach across all the circuits in the HFTD and HFRA. PG&E will continue to explore new technologies to reduce the risk of ignitions and the consequences of wildfires and may incorporate new technologies into our mitigation	Wendy Al-Mukdad	2/23/2023	3/9/2023	3/9/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/SPD_001.zip	0	N/A	7.2.1	e Mitigation Strategy Develo	Overview of Mitigation Initiatives and Activities
Pre-Discovery 47	Green Power Institute (GPI)	001	Green Power Institute (GPI)_001	1	Green Power Institute (GPI)_001_Q1	Please provide PG&E's Pre-submission 2023-2025 WMP Base Plan filed on February 13, 2023, with the OEIS per the 2023 WMP Guidelines and Schedule document. Including all attachments and associated supporting documents required for the Pre-submission 2023-2025 WMP Base Plan filing.	PG&E has designated the entire pre-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. In addition, the pre-submission contains contact information for individuals that is considered confidential. As noted in our correspondences to you on March 8th and March 10th, we can provide you with a copy of the pre-submission documents that were submitted upon execution of a non-disclosure agreement. Alternatively, we will be submitting our final 2023-2025 Wildfire Mitigation Plan (WMP) for public review on March 27, 2023 if you would prefer to wait for a copy of the completed WMP following Energy Safety's completeness check. Please feel free to reach out to us to discuss how you would prefer to move forward with this request.	Zoe Harrold	3/1/2023	3/14/2023	3/14/2023	https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/reference-docs/GPI_001.zip	0	N/A	All	All	All