

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

PG&E Data Request No.:	TURN_005-Q001		
PG&E File Name:	WMP-Discovery2023_DR_TURN_005-Q001		
Request Date:	April 14, 2023	Requester DR No.:	TURN-PG&E- 5
Date Sent:	April 19, 2023	Requesting Party:	The Utility Reform Network
DRU Index #:		Requester:	Tom Long

SUBJECT: SYSTEM HARDENING

QUESTION 001

Please provide any decision tree schematic in PG&E's possession that shows, for a given location where PG&E believes that system hardening is necessary, how PG&E decides which mitigation technique to use – i.e., undergrounding, covered conductor, remote grid installation, etc. – including without limitation the criteria that PG&E uses to select the mitigation technique for that location. Please provide a narrative explanation of what the decision tree schematic shows.

ANSWER 001

PG&E has used three relevant decision trees to scope work for System Hardening: (1) System Hardening, (2) Targeted Undergrounding, and (3) Fire Rebuild taking place in an HFTD. Before the Targeted 10K UG program, PG&E predominantly used the System Hardening (see attachment WMP-Discovery2023_DR_TURN_005-Q001Atch03) and Fire Rebuild Decision trees (see attachment WMP-Discovery2023_DR_TURN_005-Q001Atch02) to scope work. Most of the system hardening work in 2023 was scoped using these decision trees.

Since late 2021, PG&E has completed most of our new planned scoping using a Targeted Undergrounding decision tree (see attachment WMP-Discovery2023_DR_TURN_005-Q001Atch01) after line removal is considered (if feasible). If undergrounding is ultimately determined to be infeasible, we typically proceed with overhead covered conductor.

Since our current scoping efforts primarily utilize the Targeted undergrounding decision tree, and the fire rebuild decision tree (where appropriate), we provide additional context regarding those trees below in response to this request.

The primary approach for selecting undergrounding 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. Both approaches used to select undergrounding projects represent approximately 70 percent of our total wildfire risk.

Please see attachment “*WMP-Discovery2023_DR_TURN_005-Q001Atch01.pdf*.” This decision tree reflects the process we followed to further analyze our highest risk undergrounding circuits included in the WMP. The process, as shown on the decision tree attachment and described below, is split into four key phases.

1. **Circuit Segment Risk Ranking (purple box):** First prioritize circuit segments in the locations where wildfire risk is the highest based on the latest wildfire distribution risk model (currently WDRM v3).
2. **Circuit Selection Prioritization Process (blue boxes):** Then identify potential environmental conditions that impact feasibility of undergrounding (water crossing, rock type, gradient), and calculate wildfire feasibility efficiency (WFE) by circuit segment to prioritize undergrounding in the locations where WFE is the highest.
3. **Feasibility Study (green boxes):** First, we confirm the segment identified is not already completed or included in existing work. Then, engineering review identifies opportunities to improve efficiencies and mitigate additional impacts, including adjusting the project to mitigate PSPS or EPSS impacts, determining if undergrounding is unfeasible (if so, identifying alternatives such as overhead, remote grid or hybrid), and confirming if there are any recent changes to the electric assets.
4. **Field Scoping (orange boxes):** Field scoping then takes place, which is focused on identifying impediments to the proposed project route and determining if a route or scope change is needed. If so, an alternative route is developed. Then, we sequence bundled miles and begin the planning phase of work.

We also have a decision tree for undergrounding during emergency response, set forth in standard EMER-4004S. This standard describes the required actions that must be taken while performing system hardening during emergency response. Please reference “*WMP-Discovery2023_DR_TURN_005-Q001Atch02.pdf*” for the referenced decision tree.

The following scenarios are considered as shown in the Fire Rebuild Decision Tree included in “*WMP-Discovery2023_DR_TURN_005-Q001Atch02.pdf*.”

1. **Consider for Line Removal** – If the facility is idle or redundant the line is removed.
2. **Consider for Remote Grid/Buyout** – If it is determined that the line serves isolated customers or a small group of customers that could be served through temporary generation, we consider remote grid or buyout.
3. **Consider for Hardening** – Where feasible, undergrounding is our preferred mitigation. If it is infeasible, we consider other hardening options.