

**BEFORE THE OFFICE OF ENERGY INFRASTRUCTURE SAFETY
OF THE STATE OF CALIFORNIA**

**COMMENTS OF THE UTILITY REFORM NETWORK
ON PACIFIC GAS AND ELECTRIC COMPANY'S
2023-2025 WILDFIRE MITIGATION PLAN
SUPPLEMENTAL RESPONSE TO REVISION NOTICE**



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**COMMENTS OF THE UTILITY REFORM NETWORK
ON PACIFIC GAS AND ELECTRIC COMPANY'S
2023-2025 WILDFIRE MITIGATION PLAN
SUPPLEMENTAL REPOSE TO REVISION NOTICE**

The Utility Reform Network (TURN) submits these comments on the Supplemental Response of Pacific Gas and Electric Company (“PG&E”) to the Revision Notice issued by the Office of Energy Infrastructure Safety (“Energy Safety”).

I. PERTINENT BACKGROUND

PG&E’s inadequate system hardening decision-making process, in which it defaults to undergrounding, has been a recurring problem that Energy Safety first identified in its decision on PG&E’s 2022 Wildfire Mitigation Plan (WMP) in Area of Continuing Improvement (ACI) 22-34. Energy Safety based ACI 22-34 on findings that included:

Upon review, Energy Safety found that PG&E’s system hardening decision-making flowchart does not give sufficient weight to quantitative factors such as costs, risk reduction values, and RSE estimates. For example, the flowchart hierarchy prioritization is influenced more by construction limitations than by RSE estimates. This may lead PG&E to fast-track more expedient locations rather than considering the option with the highest RSE estimate. In addition, it is notable that PG&E’s decision-making process heavily favors undergrounding. PG&E did not provide a thorough analysis of other mitigation options to demonstrate how alternatives factor into its decision-making process. Currently, PG&E’s decision-making process is particularly driven by whether undergrounding is feasible; if undergrounding is not feasible, another mitigation strategy is chosen. Energy Safety asserts that mitigation strategies must be chosen for a given area based on risk model output, prioritized by the risks present at that location. PG&E’s goal must be to conduct a rigorous, quantitative analysis of alternative strategies that prioritizes a mitigation strategy according to highest risk, addresses risk by location and uses limited resources effectively. Quantitative measures must have higher placement in the decision tree hierarchy than is currently shown.¹

¹ OEIS Final Decision re PG&E 2022 WMP, p. 144.

Energy Safety also stated: “PG&E must weigh a multitude of factors for its evaluation of system hardening alternatives *and demonstrate that it has not primarily defaulted to undergrounding*. In PG&E’s 2023 WMP, it must provide further analysis of its decision-making process, demonstrating a full evaluation of system hardening alternatives including considering combinations of system hardening initiatives.”² ACI 22-34 directed PG&E to correct these problems in its 2023 WMP.

TURN’s May 26, 2023 opening comments on PG&E’s 2023-2025 WMP (pp. 12-19) addressed in detail PG&E’s failure to comply with ACI 22-34. TURN will not repeat that discussion here.

On June 22, 2023, Energy Safety issued a Revision Notice identifying “critical issues” associated with PG&E’s 2023-2025 WMP. Energy Safety explained that, if PG&E does not satisfactorily address the identified critical issues, PG&E’s WMP may be denied. Critical Issue 5 (RN-PG&E-23-05) of that Revision Notice continued to point out significant problems with PG&E’s undergrounding-focused grid hardening strategy, repeating concerns and directives that Energy Safety identified in ACI 22-34. Among other problems specified in the Revision Notice, RN-23-05 criticized PG&E’s “inadequate decision-making process for mitigation and undergrounding location selection” that prevents it from “determin[ing] the most suitable mitigation selection, potentially including a combination of various mitigations, for a given area.”³

PG&E submitted its response to the Revision Notice on August 7, 2023, and TURN submitted comments on that response on August 22, 2023. TURN’s comments (pp. 5-11)

² *Id.*, pp. 79-80 (emphasis added).

³ OEIS Revision Notice, pp, 16, 17.

explained that PG&E’s response did not make the changes required by RN-23-05 and still had not complied with the requirements of ACI 22-34. TURN will not repeat that discussion here.

PG&E’s September 27, 2023 Supplemental Response is yet another opportunity for PG&E to show that it has reformed its default-to-undergrounding decision-making process for system hardening. For the reasons discussed below, PG&E has failed again.

II. PG&E’S SUPPLEMENTAL RESPONSE REAFFIRMS THE UNDISPUTED FACT THAT PG&E’S CURRENT SYSTEM HARDENING DECISION-MAKING PROCESS DEFAULTS TO UNDERGROUNDING

PG&E’s Supplemental Response does not announce that it has changed its system hardening decision-making process as required by ACI 22-34 and RN 23-05 to no longer default to undergrounding. Instead, the Supplemental Response reaffirms that PG&E has made no changes to that process.

In describing its current decision-making process using WDRM v3, PG&E simply re-states that it has chosen undergrounding “as the preferred mitigation solution.”⁴ In addition, the Supplemental Response does not change the original statement in PG&E’s 2023-2025 WMP that, under WDRM v3, overhead hardening is only selected “where undergrounding was deemed infeasible.”⁵

Thus, PG&E’s current system hardening decision-making process is no different from what PG&E described in its original 2023-2025 WMP. As stated in TURN May 26, 2023 comments, TURN’s discovery regarding PG&E’s WMP confirmed that this process is a default-to-undergrounding approach. In data request 5, question 1, TURN asked PG&E to provide any decision-tree schematic that shows, for a given location where PG&E believes that system

⁴ PG&E Supplemental Response, p. 91.

⁵ Redline 2023-2025 WMP, p. 401, submitted with Supplemental Response.

hardening is necessary, how it decides which mitigation technique to use, including the criteria for making that selection. In response, PG&E stated that, *since late 2021*, PG&E has completed most of its planned scoping of system hardening projects using a Targeted Undergrounding decision tree, which is attached in the Appendix to these comments.⁶ That Undergrounding decision tree – which PG&E does *not* share in its Supplemental Response -- describes a process in which, after line removal is considered, undergrounding is the default alternative. Overhead hardening, i.e., covered conductor, only is considered if undergrounding is ultimately found to be infeasible. PG&E confirms this point in the text of its data request response, where it states that, “if undergrounding is ultimately determined to be infeasible, we typically proceed with covered conductor.”⁷

In sum, PG&E’s Supplemental Response still does not satisfy the requirements of ACI 22-34 and RN-23-05 for PG&E to change its inadequate decision-making process. Instead, PG&E makes no changes to the process it has used since late 2021, in which it makes undergrounding the default option and only considers overhead hardening if undergrounding proves infeasible. To be consistent with the requirements stated in ACI 22-34, Energy Safety may not approve PG&E’s WMP unless and until PG&E makes the changes required by ACI 22-34 and RN-23-05.

III. PG&E’S AFTER-THE-FACT ANALYSIS IS IRRELEVANT AND DOES NOT JUSTIFY PG&E’S NON-COMPLIANCE WITH ENERGY SAFETY’S REQUIREMENTS TO CHANGE ITS DECISION-MAKING PROCESS

Rather than reform the decision-making process PG&E has used since late 2021 to satisfy Energy Safety’s requirements, PG&E presents an after-the-fact analysis to try to show that, even

⁶ Appendix to these Comments, PG&E response to TURN DR 5, question 1 and Attachment 1.

⁷ *Id.*, PG&E response to TURN DR 5, question 1.

if it had used the process required by Energy Safety, it would have selected undergrounding for virtually all of its planned undergrounding projects in 2023 and 2024.⁸

The most important point is that this after-the-fact analysis is not what Energy Safety has required. PG&E was supposed to show – *in the WMP it submitted in February 2023* -- that it has changed its process to no longer default to undergrounding and that it has revised its selected mix of undergrounding and overhead hardening projects accordingly. As discussed in the previous section, PG&E has not made the required changes. As a result, this rear-guard effort is irrelevant to satisfying Energy Safety’s requirements and should be disregarded.

In any event, Energy Safety should view as highly suspect an analysis that purports to show that doing what Energy Safety required would have made no difference to its selection of mitigations. Instead, all that PG&E has demonstrated is that the after-the-fact analysis it presents is highly skewed toward undergrounding and does not accurately consider the benefits of overhead hardening.

TURN understands that the comments of the CPUC’s Public Advocates Office (Cal Advocates) will demonstrate the many ways in which PG&E’s analysis, including its use of “secondary filters,” is skewed to support a pre-determined conclusion to use undergrounding rather than to make an accurate, fact-based comparison of alternatives. TURN endorses Cal Advocates’ analysis and will not repeat its many salient points. However, the following points warrant emphasis:

- For projects selected using WDRM v2, the EASOP analysis and follow-up use of secondary filters is opaque. In its Attachment 2 spreadsheet, PG&E provides only the EASOP model, not the model results for each project. Similarly, PG&E does not show how the use of secondary filters applied to individual projects and how the facts about the locations triggered a filter that justified undergrounding. For

⁸ PG&E Supplemental Response, pp. 85-93.

example, as Cal Advocates points out, the WDRM v3 post-hoc analysis shows that some locations are shown as having tree strike potential despite having no trees. The WDRM v2 attachment provides no information to assess whether PG&E applied the filters based on accurate data.

- In both the WDRM v2 and v3 analyses, PG&E seems to assume that overhead hardening, including covered conductor combined with current limiting technologies such as REFCL, cannot provide any benefits of reduced reliance on PSPS and EPSS. However, PG&E admitted in response to TURN discovery that PG&E has not assessed the extent to which covered conductor, with or without other supplemental current limiting technologies, mitigates that risk.⁹ Thus, PG&E simply assumes, without studying the actual facts, that overhead hardening is not useful for reducing reliability risk. SCE’s experience points to a contrary conclusion. SCE states that it has determined that “lines with covered conductor have a **90% reduction** in PSPS activations”¹⁰ and has increased its PSPS thresholds, *i.e.*, decreased the likelihood of calling a PSPS event, on circuit segments with covered conductor.¹¹
- Both the WDRM v2 and v3 analysis do not consider the use of covered conductor combined with other mitigations, such as current-limiting technologies (*e.g.*, REFCL and Downed Conductor Detection) that can provide further protection against tree-fall and other ignition drivers. In so doing, PG&E ignores Energy Safety’s persistent statements in ACI 22-34 and RN-23-05 that such a combination of mitigation alternatives must be considered.

Thus, even if Energy Safety considers PG&E’s after-the-fact analysis to be relevant (which would be incorrect in TURN’s view), the analysis fails to show that PG&E’s selection of 2023-2024 undergrounding projects is consistent with a decision-making process that, for each

⁹ PG&E response to TURN DR 8, question 6. For example, in response to TURN’s question 6(a), PG&E states, “[w]e have not performed studies or have reports to support whether lines with covered conductors experienced a reduction in PSPS activations.” And in response to TURN’s question 6(b), PG&E states, “We have not performed studies or have reports to support whether any de-energization thresholds should be changed for circuits (or portions thereof) with covered conductor.”

¹⁰ SCE 2023-2025 WMP, p. 252 (emphasis added).

¹¹ *Id.*; Joint IOU 2023 Covered Conductor Working Group Report, p. 38.

project, made an accurate, fact-based determination of the best mitigation, or combination of mitigations.

IV. PG&E'S SUPPLEMENTAL RESPONSE ABUSES ENERGY SAFETY'S ESTABLISHED PROCESS FOR WILDFIRE MITIGATION PLANS

With respect to RN-23-05, PG&E's Supplemental Response submits complex and opaque information that was not previously provided, including a computer model, EASOP,¹² and a complex analysis embodied in a multi-tab Excel workbook¹³ that purports to justify PG&E's selection of undergrounding projects under the WDRM v3. Equally notable, as stated in the previous section, is the incompleteness and opacity of the information that is provided in the Supplemental Response. These supplemental analyses cry out for numerous data requests to attempt to fill in the huge information gaps and to understand key elements of the analysis, such as how, on a project-by-project basis, the secondary filters would change a preliminary finding that overhead hardening was warranted to a final decision overriding that preliminary conclusion.

PG&E should not be allowed to submit such attempted showings so late in the WMP process. If PG&E believed this information was relevant to its WMP, there is no reason why it could not have been submitted *with its WMP*. Had it done so, Energy Safety and the parties would have had time to give it careful consideration and to ask the many data requests that would be needed to understand the analyses. PG&E never attempts to explain why this information could not have been provided earlier. Indeed, it is a mystery why PG&E chose to submit the information at all, after it already had ample opportunity to provide a complete

¹² Attachment 2 to PG&E's Supplemental Response.

¹³ Attachment 3 to PG&E's Supplemental Response.

response to RN-23-05. One can only surmise that PG&E finally realized that it would face an adverse determination unless it scrambled to throw more information before Energy Safety.

If Energy Safety gives these supplemental analyses any credence, it will seriously undermine its WMP process and the legislative goal of expeditious decisions.¹⁴ Utilities will learn that they can withhold complex information until late in the process, when other parties and their experts are not expecting or prepared for an onslaught of new data and computer models, and when there is no longer adequate time for parties and Energy Safety to adequately scrutinize the information.

In addition, if Energy Safety allows PG&E's Supplemental Response to influence its decision, it will violate its own rules regarding the Revision Notice Process. Section 4.4.2 of Energy Safety's WMP Guidelines unequivocally states: "Energy Safety will not accept any updates or errata to the Revision Notice Response after the due date."¹⁵ A decision on PG&E's WMP ratified by the CPUC that is based in any respect on PG&E's Supplemental Response would be subject to judicial annulment because of Energy Safety's failure to adhere to its own clearly stated rules.

V. CONCLUSION

For the reasons set forth above and in TURN's prior comments, TURN urges Energy Safety to require PG&E to fully comply with the requirements of ACI 22-34 in its 2022 decision and RN-23-05 in Energy Safety's Revision Notice. Energy Safety should adopt the

¹⁴ PU Code Section 8386.3 (a) (prescribing a three-month decision deadline, unless Energy Safety makes written findings why the deadline cannot be met.)

¹⁵ 2023-2025 Wildfire Mitigation Plan Process and Evaluation Guidelines, Dec. 6, 2022, p. 7 (item 3 in Section 4.4.2).

recommendations presented in the Summary of Recommendations in TURN's May 26, 2023
Comments.

Date: October 13, 2023

Respectfully submitted,

By: _____ /s/ _____
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APPENDIX

PG&E's Response to TURN Data Request 5, Question 1, including Attachment 1

**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.

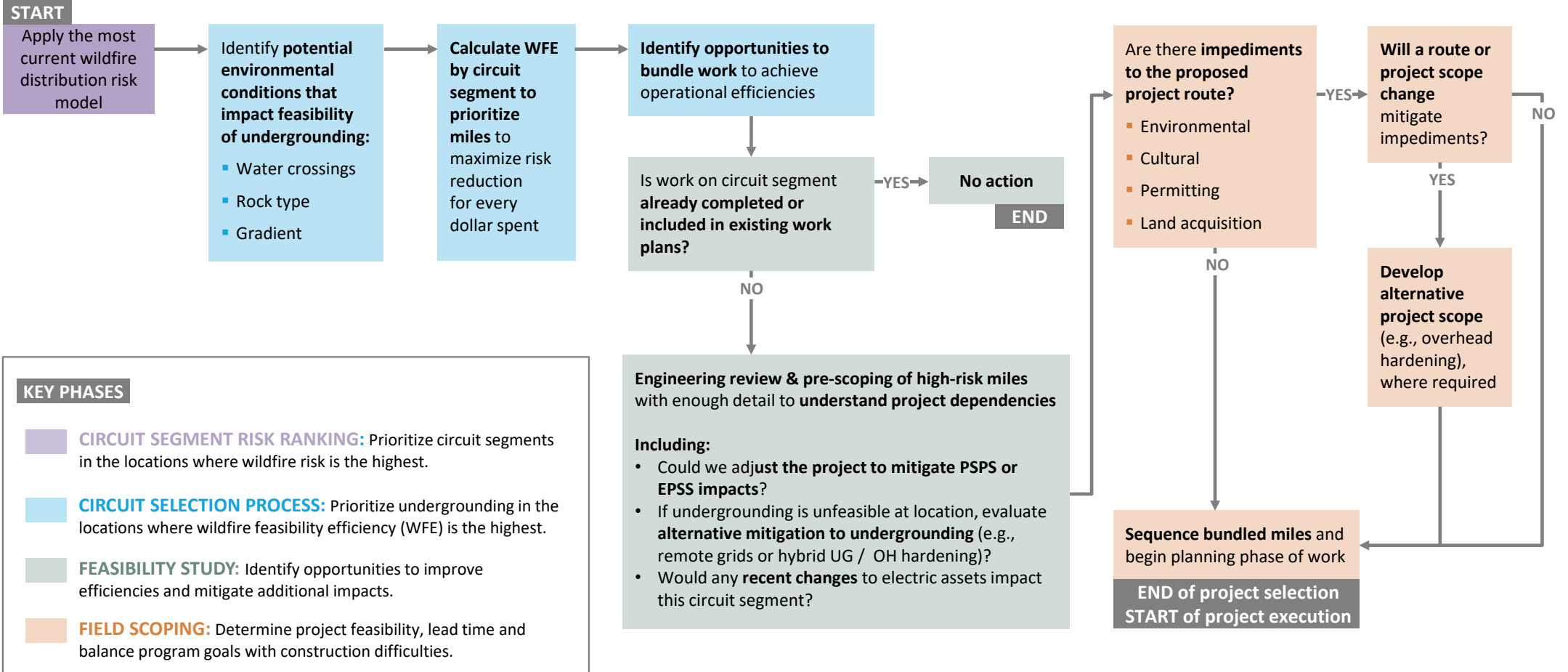
We also have a decision tree for undergrounding during emergency response, set forth in standard EMER-4004S. This standard describes the required actions that must be taken while performing system hardening during emergency response. Please reference “*WMP-Discovery2023_DR_TURN_005-Q001Atch02.pdf*” for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



Current Undergrounding Mitigation Selection Decision Process



**Does not include Fire Rebuild undergrounding miles. This document is for illustrative purposes only. There may be additional considerations when identifying and scoping undergrounding projects.*

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.