July 28, 2023 **Via Electronic Filing**

Caroline Thomas Jacobs, Director
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Subject: **Comments of the Public Advocates Office on the Public Workshop regarding Safety Requirements to Address Increasing Wildfire Risk**

Docket: **2023-WSRR**

Dear Director Thomas Jacobs,

The Public Advocates Office at the California Public Utilities Commission (Cal Advocates) respectfully submits the following comments regarding the Public Workshop on Safety Requirements to Address Increasing Wildfire Risk from Climate Change and Aging Infrastructure, held July 13-14, 2023. Please contact Nathaniel Skinner (Nathaniel.Skinner@cpuc.ca.gov) or Henry Burton (Henry.Burton@cpuc.ca.gov) with any questions relating to these comments.

We respectfully urge the Office of Energy Infrastructure Safety to adopt the recommendations discussed herein.

Respectfully submitted,

/s/ ***Joseph Lam***

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I. INTRODUCTION

Pursuant to the Office of Energy Infrastructure Safety's (Energy Safety) workshop notice inviting public comments,[1] the Public Advocates Office at the California Public Utilities Commission (Cal Advocates) submits these comments in response to the Public Workshop on Safety Requirements to Address Increasing Wildfire Risk from Climate Change and Aging Infrastructure, held July 13-14, 2023. Appendix A of these comments includes the presentation slides that Cal Advocates used in the workshop regarding the costs of utility-caused wildfires in an environment of climate change.

II. OVERVIEW

A. Utility requests for additional flexibility in safety regulations are misguided.

During the workshop, the large utilities repeatedly urged that the Commission's general orders be updated to allow greater "flexibility" in their operations. This concept was particularly prevalent during discussions of asset inspection frequency and asset-repair timelines. Utility representatives suggested that inspection frequencies should be reduced in areas with low wildfire risk[2] and repair timelines should be extended for increased operational flexibility.[3]

Such requests are misguided. The regulations currently allow for ample flexibility in both inspections and maintenance. Although General Order (GO) 165 lists minimum inspection frequencies,[4] utilities are both allowed and encouraged exceed the minimum (e.g., conduct inspections more frequently than required) in areas of higher risk to public safety. Furthermore, GO 95's Rule 18 currently allows utilities to temporarily repair and downgrade level 1 and level 2 maintenance issues. Utilities may also request exceptions to certain level 3 corrective timeframes.[5]

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[1] Office of Energy Infrastructure Safety, Workshop Notice and Agenda: Public Workshop on Safety Requirements to Address Increasing Wildfire Risk from Climate Change and Aging Infrastructure, June 8, 2023, Docket 2023-WSRR. Available at https://efiling.energysafety.ca.gov/Lists/DocketLog.aspx?docketnumber=2023-WSRR

[2] Discussed further in section III.A of these comments.

[3] Discussed further in section IV.A of these comments.

[4] GO 165, Table 1.

[5] CPUC General Order 95, Rule 18, part B. https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M338/K730/338730245.pdf

Further flexibility is unjustified and unnecessary. The existing regulations reasonably prescribe minimum performance standards that utilities must meet to provide safe and reliable service to ratepayers. Beyond those minimum standards, the regulations allow flexibility in how utilities meet those standards, and the regulations allow flexibility for utilities to determine under what circumstances they choose to do better than the minimum. It is unreasonable and imprudent to increase flexibility by lowering or removing the minimum performance standards; such a change amounts to de facto deregulation, reducing oversight of utility practices.

Cal Advocates notes that utilities have failed to comply with both inspection requirements and repair timelines in the past.[6] A history of noncompliance is not a valid argument for loosening standards. Rather, Energy Safety should require that utilities provide justification for why the current minimum performance standards are overly strict. For example, if the current general orders require asset inspections too frequently, utilities should be able to show that most asset inspections find no problems (or, at minimum, only level 3 problems that present low risk to public safety) and—crucially—that these inspections pass quality control checks. Until and unless utilities can provide such evidence, those minimums should not be adjusted in a misguided attempt to increase flexibility.

III. ASSET INSPECTIONS

A. Energy Safety should not support changes to the minimum asset inspection frequencies currently set by GO 165.

During the discussion of asset inspection, Green Grid Inc. (GGI) discussed the advantages and disadvantages of both compliance-based and risk-based inspection frequencies.[7] In the ensuing panel discussion, representatives from the three large utilities focused on the advantages of adopting risk-based inspection frequencies.

Currently, GO 165 sets minimum inspection frequencies for assets (e.g., compliance-based frequencies).[8] Though utilities may utilize different methods to complete their

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[6] *See, e.g.*, *Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large Investor-Owned Utilities*, May 26, 2023, p. 29 (discussing failures in PG&E's intrusive inspection programs), and pp. 31-34 (discussing PG&E's substantial backlog of overdue maintenance resulting from noncompliance with GO 95's Rule 18).

[7] Energy Safety and Green Grid Inc., Safety Requirements Addressing Increasing Wildfire Risk Public Workshop slide deck (workshop slides), slide 112.

[8] GO 165, Table 1 sets minimum inspection frequencies for patrol, detailed, and intrusive inspections. In these comments we primarily refer to detailed inspections; however, the discussion applies to all

inspections, every overhead electric asset in California should receive a detailed inspection *at least* once every five years under GO 165.

Though the utilities touted the benefits of moving to a purely risk-based approach, they have not provided evidence that such an approach would increase, or even maintain, the level of safety achieved by the current minimum inspection frequencies dictated in GO 165.

1. Purely risk-prioritized inspections would decrease uniformity across California.

GGI's presentation suggested that risk-focused inspections are more resource-efficient and remove subjectivity compared to compliance-focused inspections. Cal Advocates respectfully disagrees.

A risk-based approach relies on the existence of high-quality and accurate data about a utility's assets. With poor asset data, such as the data produced from the types of inspections that Pacific Gas and Electric Company (PG&E) was performing prior to the Camp Fire, a utility would have a poor risk-based model for prioritizing its work.[9] A risk-focused approach to inspections requires utilities to develop and utilize tools to identify the risk of their assets and set inspection schedules accordingly.

While utilities have made great strides in developing such risk models, risk modeling practices are still rapidly evolving. For example, as Cal Advocates has previously pointed out, each version of PG&E's wildfire distribution risk model has involved significant changes to the circuit segments considered highest risk.[10] It is premature and unreasonable to set inspection schedules based on risk when the utility's understanding of risk is not yet stable across several years. If inspection schedules are updated each year with the latest wildfire risk model, the result could be that a given circuit's targeted inspection cycle changes multiple times between inspections—a logistical headache for the utility and a nightmare for verifying compliance.

In addition to evolving understandings of risk, there are currently major differences between the utilities' use of risk to inform their inspection practices. During the workshop, San

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inspections governed by GO 165.

[9] *PG&E inspections of equipment that sparked deadly Camp fire were flawed, state regulators say*. Los Angeles Times, December 3, 2019, available at https://www.latimes.com/california/story/2019-12-02/pge-camp-fire-equipment-inspections

[10] *See, e.g.*, *Public Advocates Office Comments on the Draft Decision Approving PG&E's 2022 Wildfire Mitigation Plan Update*, October 26, 2022 at 2-5.

Diego Gas & Electric (SDG&E) stated that it had developed a tool for inspection scoping that uses both the consequence of failure and probability of failure to prioritize inspections.[11] In contrast, PG&E stated that it prioritizes inspections only by consequence.[12] Bear Valley Electric Service, Inc. (BVES) has no risk-informed prioritization of detailed overhead inspections whatsoever.[13] The utilities currently have no consistent approach to the application of risk to their inspection practices. This means that updating the general orders to prioritize inspections purely by risk would lead to very different implementation of risk-based inspections.

2. Utility inspection results do not support reducing the frequency of asset inspections even in low-risk areas.

Southern California Edison Company (SCE) stated that in some areas with lower wildfire risk, current inspection cycles may be too frequent.[14] SCE appears to be advocating for decreasing or removing the minimum inspection frequency for detailed inspections in these locations.

Given the currently known facts, Cal Advocates opposes any reduction to the minimum inspection frequencies currently prescribed by GO 165. At present, there is no evidence that California's regulations are overly skewed toward safety. On the contrary, electric utilities' data shows that asset inspections continue to reveal numerous safety hazards and that more robust asset management is needed.

Figures 1 and 2 below show the average number of level 1 and level 2 issues per mile that utilities have identified during detailed inspections in the 2020-2022 Wildfire Mitigation Plan (WMP) cycle. These images disaggregate these values by utility and by High Fire-Threat District (HFTD) versus non-HFTD.

[11] Recording of the July 14, 2023 workshop, approximate timestamp 3:44:50, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

[12] Recording of the July 14, 2023 workshop, approximate timestamp 4:03:50, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

[13] BVES, *Bear Valley Electric Service 2023-2025 Wildfire Mitigation Plan*, revised June 7, 2023 at 144.

[14] Recording of the July 14, 2023 workshop, approximate timestamp 3:48:50, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

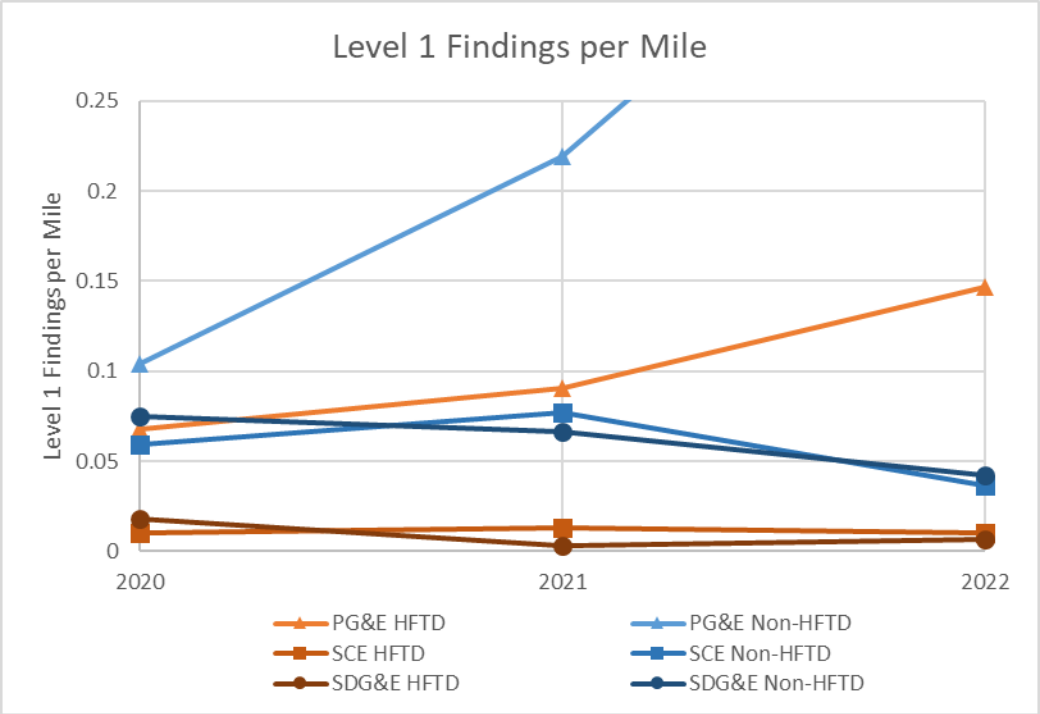

Figure 1 – Detailed inspections: level 1 findings per mile for the large Investor-Owned Utilities (IOUs)[15]

Note: the vertical axis of Figure 1 was truncated for ease of identifying trends in all six lines. Due to the number of non-HFTD findings by PG&E in 2022, this data point is not visible.[16]

[15] This chart is derived by dividing the number of level 1 findings from "other" detailed inspections by the number of miles inspected by "other" detailed inspections. All data is sourced from Table 2 of the 2023 Q1 quarterly data reports with the exception of the number of miles of detailed inspections performed by PG&E in 2020; those data are sourced from the 2021 Q1 quarterly data report, Table 1.

[16] In 2022, PG&E's find rate of level 1 issues in non-HFTDs was 0.42 findings per mile.

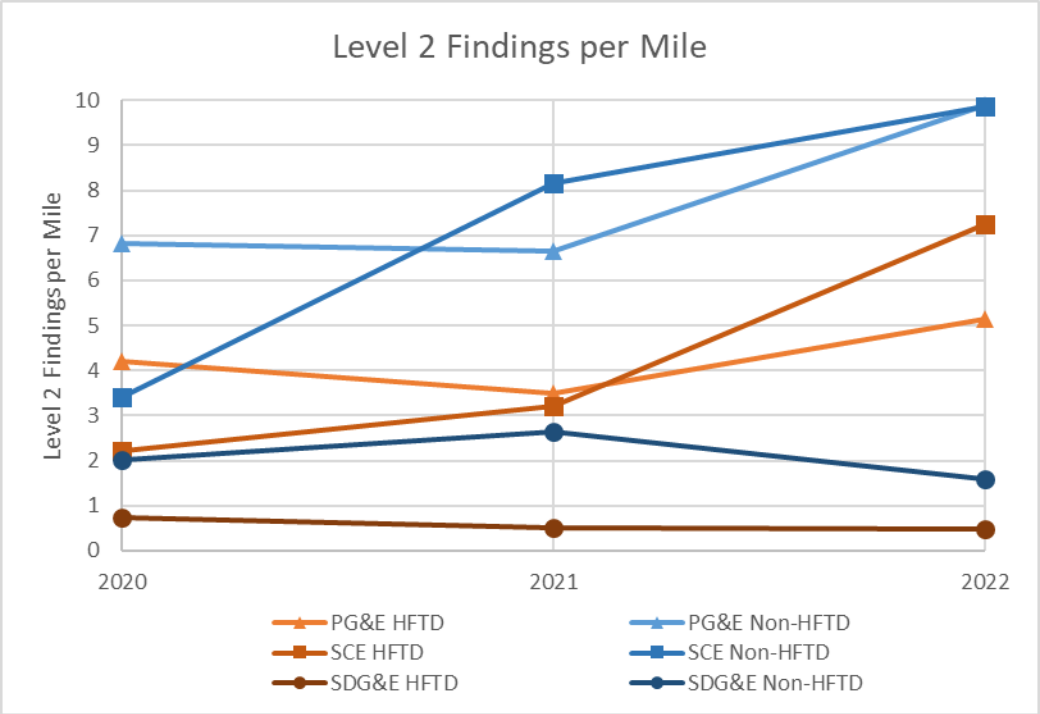

Figure 2 – Detailed inspections: level 2 findings per mile for the large IOUs[17]

The finding rate of inspection issues for all three utilities fluctuated across the three years, with no obvious downward trends that would indicate utilities are finding fewer severe issues. In fact, the find rate for level 2 inspections increased across this period for both SCE and PG&E, both within and without the HFTDs.

The current trends do not support SCE's claim that inspection cycles in areas with lower wildfire risk should be lengthened. In fact, all three utilities have *higher* rates of findings outside the HFTD (both level 1 and level 2). While it is reasonable to assume that utility infrastructure failures in non-HFTD areas are less likely to result in a catastrophic wildfire, such areas appear to have higher rates of equipment issues, which could lead to a variety of safety hazards.

Lastly, the history of enhanced wildfire inspections is still brief, with enhanced inspections associated with formal wildfire mitigation plans dating back only to 2019.[18] With only four years of data, and no obvious downward trends in the number and severity of

[17] This chart is derived by dividing the number of level 2 findings from "other" detailed inspections by the number of miles inspected by "other" detailed inspections. All data is sourced from Table 2 of the 2023 Q1 quarterly data reports with the exception of the number of miles of detailed inspections performed by PG&E in 2020; those data are sourced from the 2021 Q1 quarterly data report, Table 1.

[18] *See, e.g.*, SCE, *2020-2022 Wildfire Mitigation Plan*, revised March 2, 2020 at 54; PG&E, *2020 Wildfire Mitigation Plan Report Updated*, revised February 28, 2020 at 5-153.

inspection findings, it is premature to discuss relaxing the inspection frequencies at this point, even in areas that the utilities consider low-risk.

The utilities requests for flexibility also come as the average age of assets is increasing across much of California. The independent safety monitor for PG&E noted that PG&E is not proactively replacing assets at a sufficient rate to maintain the asset age base.[19] Increased asset age is likely to lead to increased failures.[20] In PG&E's case, at least, it would be especially imprudent to reduce the inspection frequency for an aging system.

3. Energy Safety and GGI should consider advocating for a hybrid approach of risk-based and compliance-based inspections.

While Cal Advocates opposes reducing the minimum inspection frequency, we do support efforts to create a risk-based decision-making to drive inspections above the current minimum frequency. Such risk-based inspections could target certain geographical areas, equipment types, or ages of assets. Both PG&E and SCE have recognized the increased wildfire risk associated with specific locations and categories of assets, and they have implemented increased inspection frequencies above the minimum dictated by GO 165.[21]

Cal Advocates recommends that GO 165 be updated to incorporate such risk-based decision-making in a hybrid manner with compliance-based inspections. Specifically, we recommend Energy Safety and GGI explore the benefits of the following:

- Continue to require detailed inspections to occur at a minimum frequency of once every five years for all assets.
- Require utilities to identify high-risk areas and assets within their service territories. As part of this risk assessment, the utilities would be required to consider the risk of assets within the HFTD,[22] assets

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[19] Filsinger Energy Partners, PG&E Independent Monitor Status Update Report, April 3, 2023, at 13-15.

[20] "PG&E has indicated that it believes 'Wire down rate is a key indicator of public safety. Wire downs per year has stayed steady over the past five years. **However, we expect the number of wire downs to increase as conductors are aging faster than the replacement rate**.'" Filsinger Energy Partners, PG&E Independent Monitor Status Update Report, April 3, 2023 at 13 (emphasis added).

[21] PG&E, *2023-2025 Wildfire Mitigation Plan R1*, April 6, 2023, section 8.1.3.2.1, at 400-403;

SCE, *2023-2025 Wildfire Mitigation Plan*, March 27, 2023, section 8.1.3.1, at 282-289.

[22] Cal Advocates does not recommend differentiating between Tier 2 and Tier 3 HFTDs in this case. HFTDs are primarily a measure of wildfire *consequence* and do not account for the *probability* of ignition associated with utility infrastructure. The main purpose of inspections is to reduce the probability of asset failure. Newer or hardened assets in Tier 3 are likely to have lower probability of failure than older or

over 50 years of age, and assets for which the utilities' risk models identify a high probability or consequence of ignition.

- Require utilities to implement more frequent inspections in high-risk areas. The definition of "high-risk areas" could, as an example, include the 20 percent of assets with the highest risk of contributing to a catastrophic wildfire, taking into account asset age, location, and condition.

Such an approach would require utilities to examine their infrastructure and implement risk-based inspections, but would leave much of the specifics to the utilities.[23] This would allow utilities the flexibility they request, without compromising safety by reducing inspections in areas considered lower risk.

An alternative approach would be to require more frequent inspections of all high-risk assets in a manner that creates uniform inspection standards across the state. For example, it would likely be prudent to require detailed inspections every three years within the HFTDs and for all assets over 50 years of age. For other assets, the current five-year cycle would remain, with additional risk-based inspections at the utility's discretion. Such an approach may be more prescriptive than utilities would prefer, but this approach has the benefit of creating uniform standards across all utility territories.

Energy Safety and GGI should consider both recommendations discussed above. Cal Advocates is open to other configurations and welcomes alternative proposals supported by empirical evidence. However, Energy Safety should reject consideration of any change that would reduce or eliminate the minimum inspection frequencies currently prescribed in GO 165.

B. Energy Safety should advocate for GO 165 to require detailed overhead inspections of distribution assets.

During the 2020-2022 WMP cycle, the three large utilities either used or piloted overhead inspections[24] of distribution assets in addition to ground-based detailed inspections.[25] These

unhardened assets in Tier 2; they may also present lower total wildfire risk.

[23] Each utility should describe its approach to risk-based inspections in its annual WMP filings.

[24] **Overhead** inspections may also be referred to as **aerial** inspections. These inspections are often performed with drones.

[25] PG&E, *2023-2025 Wildfire Mitigation Plan R1*, April 6, 2023, section 8.1.3.2.7 at 407-410; SCE, *2023-2025 Wildfire Mitigation Plan*, March 27, 2023, section 8.1.3.1 at 282-289; SDG&E, *2023-2025 Wildfire Mitigation Plan*, March 27, 2023, section 8.1.3.7 at 194-200.

inspections can identify issues not easily seen from the ground, such as damaged pole tops.[26] Overhead inspections are likely to see more and different issues than ground-based detailed inspections,[27] and such inspections are therefore complementary to their ground-based counterparts.

Cal Advocates therefore recommends that GO 165 be updated to require detailed overhead inspections of assets in addition to detailed ground-based inspections and patrol inspections. Cal Advocates recommends that detailed overhead inspections be performed at the same frequency as detailed ground-based inspections (that is, at a minimum frequency of every five years). Detailed overhead inspections may be concurrent or staggered with detailed ground-based inspections. As discussed in section III.A above, utilities would be encouraged to increase the inspection frequency in high-risk areas.

To allow utilities operational flexibility, Cal Advocates does not recommend that general orders require specific technologies for detailed overhead inspections.[28] As the utilities correctly pointed out, technology is constantly evolving, and utilities should be free to choose the best available tool on the market.[29], [30]

C. Energy Safety should recognize that grid-awareness technologies are complementary to asset inspections, but they are not a substitute for asset inspections.

During the workshop, both SCE and SDG&E referred to early fault detection (EFD) as part of their suite of inspection methods. SCE suggested that EFD and similar technologies could decrease the necessity for asset inspections.[31] Cal Advocates views EFD as a situational-

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[26] SCE, *2023-2025 Wildfire Mitigation Plan*, March 27, 2023 at 282.

[27] Energy Safety, *Revision Notice for Pacific Gas and Electric Company's 2023-2025 Wildfire Mitigation Plan*, June 22, 2023 at 13-14.

[28] Overhead inspections are often performed with drones. Alternatives include manned aircraft or climbing a structure (as long as the utility worker can see the top of the structure).

[29] Recording of the July 14, 2023 workshop, approximate timestamp 3:54:20, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

[30] This is akin to how federal gas pipeline safety requirements work. Federal code establishes the frequency and category but does not prescribe the tool type. *See*, for example, 49 Code of Federal Regulations 192, Subpart O, available at https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I/subchapter-D/part-192/subpart-O

[31] Recording of the July 14, 2023 workshop, approximate timestamps 3:43:00 and 3:52:20, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

awareness tool that provides a utility greater insight into the health of its system. Like many situational-awareness tools, EFD is complementary to asset inspections, but it cannot be considered a replacement for other inspection methods.

EFD can identify conditions that generate radio frequencies, such as broken conductor strands, failing splices, and more.[32] Such insights may spur utilities to schedule additional inspections to examine the failing equipment. However, EFD does not identify the exact nature of the problem,[33] so a utility still needs a skilled human inspector to pinpoint and identify the problem. Moreover, EFD is unlikely to detect non-electrical issues such as woodpecker damage to a pole, or rot damage to the top of a wooden crossarm. Therefore, routine asset inspections remain necessary.

Grid sensors can complement detailed inspections performed by an experienced electrical worker, but they are not a replacement. EFD and other sensor technologies can be understood as providing risk alerts, which allow a utility to conduct targeted, risk-based inspections. Cal Advocates cautions Energy Safety and GGI against allowing the utilities to justify reducing the frequency of inspections based on the use of situational-awareness technologies.

D. Energy Safety should support standardizing requirements for quality-assurance and quality-control for asset inspections.

Quality Assurance and Quality Control (QA/QC) are important safety elements that serve to verify that field inspections of infrastructure accurately detect potential hazards and compliance issues.[34] Energy Safety should support regulations that establish basic QA/QC requirements and should support the standardization of QA/QC processes for asset inspections across the utilities. Currently, the utilities differ with respect to their definitions and in their applications of quality control on asset inspections.

Cal Advocates has noted in previous comments that several utilities need to improve their quality control of asset inspections.[35] For example, Cal Advocates has noted PG&E's asset

[32] Response to data request CalAdvocates-PG&E-2023WMP-13, question 2, April 12, 2023.

[33] Recording of the July 14, 2023 workshop, approximate timestamp 5:27:15, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

[34] In general, QA is prospective (taking proactive steps to ensure work is done well and achieves good results) while QC is retrospective (checking whether the work performed met the desired standards of quality).

[35] *Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large*

inspections suffered from low pass rates in quality control: approximately 20 percent of the structures that were audited in 2022 had at least one finding that was not identified originally by PG&E's inspectors.[36] SDG&E states a 100 percent audit pass rate for detailed distribution audits from 2019 to 2022, but SDG&E's QA/QC methodology may not uncover inspection quality problems.[37] Lastly, BVES informally cross-checks findings between different inspection types but has no formally documented QC processes and has repeatedly failed to implement QC for asset inspections.[38]

To address the wide-ranging issues across the electric utilities, Energy Safety should support or develop basic QA/QC standards for asset inspections. Energy Safety should consult industry standards and best practices while developing the QA/QC regulations. At a minimum, the QA/QC standards should require the following:

- Each utility should have an established quality-control program that covers all inspection types.
- Each utility should have a documented internal protocol that describes its methods for both quality assurance and quality control of asset inspections.
- Each utility should develop a sampling method for QC audits and include sample sizes that achieve acceptable confidence levels.
- Each utility should set target pass rates (in advance) for QC audits, and the target pass rates should be based on risk analysis and industry-leading practices rather than past results.
- General orders should require remedial actions (such as repeating inspections) if QC pass rates do not meet targets.
- Utilities should use QC results to identify weaknesses and improve future inspections. The use of these QC results could lead to flagging types of asset conditions that are frequently missed, monitoring trends, identifying poorly performing contractors or inspectors, and other similar actions.

Investor-Owned Utilities, May 26, 2023.

[36] *Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large Investor-Owned Utilities,* May 26, 2023 at 26.

[37] *Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large Investor-Owned Utilities,* May 26, 2023 at 70.

[38] *Comments of the Public Advocates Office on Bear Valley Electric Service's 2023 to 2025 Wildfire Mitigation Plan and General Wildfire Mitigation Issues,* June 29, 2023 at 19-20.

Including the requirements above would improve the quality of asset inspections over time and allow for easier comparison amongst the utilities. It will also enable Energy Safety and interested stakeholders to understand if each utility is properly identifying and rectifying problems before they become hazards to public safety.

IV. Asset Management and Repairs

A. Energy Safety should not support changes to the asset-repair timeframes currently set by GO 95.

During the recent workshop, the utilities proposed to expand the use of deadline extensions for asset-maintenance tags. These ideas aim at operational flexibility but also necessitate an examination of their impact on safety. Simply requesting operational flexibility without providing supportive quantitative data and a clear management plan is insufficient. A proposal for operational flexibility should be backed by a substantive amount of planning and quantitative data demonstrating its prudence and safety.

Cal Advocates is not fundamentally opposed to allowing the extension of regulatory deadlines for maintenance tags under specific circumstances. However, such extensions must adhere to reasonable limits. This adherence to reasonable limits means extensions cannot be indefinite or continually recurring, particularly when a utility's plans are subject to change. Furthermore, any significant deadline extension must be supported by the utilities' determination that no immediate or imminent safety risks will result from the associated delay or deferral.

During the workshop, utilities brought to light a specific circumstance in which they see a compelling need for operational flexibility. This situation arises when utilities are planning a capital project that involves upgrading or removing an asset that currently has an impending work order due for completion. For example, SDG&E raised the question of whether it makes sense to repair a maintenance tag by its due date if a larger project is slated to be completed in the same location two months later.[39] The proposed extension of the asset work order deadline in this situation is not inherently problematic, but it creates a new layer of complexity to the process.

One concern is that capital projects regularly change in schedule or scope. For example, if GO 95's Rule 18 were revised to allow a modest extension of repair due dates in the case of an

[39] Recording of the July 14, 2023 workshop, approximate timestamp 4:23:10, available at https://www.youtube.com/watch?v=qD32vhe0-zQ

impending upgrade or replacement project, it is unclear how such issues would be tracked and remediated if the capital project were subsequently delayed or canceled. Therefore, the utilities should provide a thorough and comprehensive plan outlining their methodology for managing the extended work orders. This plan needs to cover not just the logistical aspects of postponing work on the asset, but also demonstrate an understanding and mitigation of the potential risks that might arise from the delay. For example, the plan should detail the actions the utility will take to comply with safety standards during the extension. Such details ensure that the utilities are prepared to handle any complications and that public safety remains their top priority despite the change in timelines.

Moreover, it is crucial that utilities support their plans with robust quantitative data. This type of support means showing, with clear evidence, how operational flexibility in the form of deadline extensions will not compromise safety standards. Cal Advocates notes that, in the last two years, PG&E has causally linked at least 13 ignitions with pre-existing maintenance tags.[40]

The onus is on the utilities to substantiate their desire to loosen the requirements for asset-repair timeframes by showing solid planning and quantitative data. In addition to providing concrete plans and substantive data, utilities must also be prepared to bear the liability for exceeding the GO 95 timelines if they choose to extend a work order. The responsibility for managing the safety risks associated with delaying needed repairs remains with the utility delaying the repairs.

Finally, current non-compliance with GO 95 timeframes by some utilities is concerning. Both PG&E and SCE have large backlogs of overdue work orders that have arisen from repeated noncompliance with GO 95's Rule 18.[41] It is hard to justify any changes to safety regulations when some utilities are failing to meet current obligations. Rather than seeking to amend regulations for their convenience, utilities should enhance their compliance processes.

Cal Advocates recommends maintaining the existing requirements for asset-repair deadlines until sufficient data is collected to guide future regulatory changes. While Cal

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[40] *Comments of the Public Advocate's Office on the 2022 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities*, April 11, 2022 at 27;

Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large Investor-Owned Utilities, May 26, 2023 at 32.

[41] *Comments of the Public Advocates Office on the 2023 to 2025 Wildfire Mitigation Plans of the Large Investor-Owned Utilities*, May 26, 2023 at 31-34, 57-60.

Advocates welcomes utility proposals for improved operational flexibility, the responsibility for proving that such changes will be safe and prudent remains on the utilities.[42]

V. New and Replacement Construction

A. Energy Safety should advocate for improvements to GO 95 construction standards to incorporate understandings of the changing climate.

The workshop segment on new construction listed, among other things, the effects of climate change as an opportunity for increasing specificity in regulations.[43] Cal Advocates supports this recommendation. New construction presents an opportunity to plan for future risk. When utilities build new lines or replace a sizable section of line that has reached the end of its service life, they should plan for and mitigate future adverse climate conditions and risks. Any changes to general orders in this regard should align with the Commission's decisions in the Climate Adaptation rulemaking (R.18-04-019).[44]

1. GO 95 should require utilities to develop climate adaptation plans for new and replacement construction.

GO 95's Rule 43 currently defines "heavy loading" and "light loading" requirements for new construction, depending on elevation above sea level. Similarly, GO 95's Rule 44 defines minimum safety factors for various grades of construction.

As the climate in California changes, it is possible that construction that withstands the physical loads (e.g., wind and ice) prevalent today may not adequately withstand expected loads over the service life of new equipment. Therefore, it would be prudent to expand the loading categories and construction grades to accommodate not only differences in the physical location of infrastructure, but expected future changes to the climate that may adversely affect infrastructure.

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[42] See, e.g., Public Utilities Code section 451, requiring every public utility to "furnish and maintain" such facilities "as are necessary to promote the safety, health, comfort and convenience" of the public.

[43] Energy Safety and Green Grid Inc., Safety Requirements Addressing Increasing Wildfire Risk Public Workshop slide deck (workshop slides), slide 72.

[44] Decision D.19-10-054, October 24, 2019, ordering paragraphs 2-6 at 56-57 describe the appropriate climate data for use in forecasting. Further updates may be adopted in future phases, as described in *Assigned Commissioner's Phase 2 Scoping Memo and Ruling*, R.18-04-019, June 2, 2023.

Energy Safety and GGI should research the benefits of expanding new and replacement construction standards to account for expected future loading conditions that may come to pass during the lifetime of a newly installed asset.

Utilities should be required to perform a system-wide, 30-year climate forecast every four years.[45] This climate forecast should model likely changes to wind loading, winter storms, summer heat waves, and other extreme weather events across the utility's service territory.

Each utility should incorporate the results of these climate studies into the design of new infrastructure to ensure that new construction is designed and built to withstand these expected future conditions. Incorporating expected future loading conditions will potentially reduce the need for costly replacements in the future, and doing so will also lead to stronger infrastructure today; and stronger infrastructure may lead to fewer failures and ignitions.

In addition, when performing repairs or replacements on existing infrastructure, the utility should utilize the results of the climate study to assess whether it would be prudent to strengthen the structure rather than repairing or replacing in kind.

2. GO 95 should require utilities to harden new and replacement construction in the HFTDs.

In addition to requiring new construction to withstand expected future loads, utilities should also be required to assess whether it would be prudent to harden new construction in the HFTD and in places where system hardening is likely to be needed within 30 years.

For example, if a utility's climate forecast study suggests that the wildfire risk in a given location will increase over the next 30 years, it may be prudent to construct new infrastructure with covered conductor, underground cable, or overhead hardening methods. While hardened infrastructure is more expensive than installing traditional bare conductor, it may obviate the need for a costly replacement project in the near future.

This strategy would result in gradual system hardening as assets age out. This approach would minimize incremental costs of later system hardening to ratepayers, and it would minimize the impacts of construction to residents by reducing the number of rebuild projects that occur on assets prior to their end of life.

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[45] This recommendation generally aligns with Decision D.20-08-046, August 27, 2020, ordering paragraph 9 at 124-128, in the Climate Adaptation Rulemaking (R.18-04-019).

Energy Safety and GGI should evaluate the merits of requiring such proactive system hardening, and they should incorporate the findings of this evaluation into their recommendations on general orders.

VI. Vegetation Management

Due to the changing environment across the state, it is necessary for regulators to develop or update vegetation-management requirements in several areas. Energy Safety should solicit specific proposals to revise the current regulations on the vegetation-management topics noted below. Cal Advocates acknowledges that these issues need further consideration and development, with input from stakeholders and experts.

A. Energy Safety should develop objective standards and criteria for hazard tree identification.

In the recent workshop, utility representatives stated that the determination of a hazard tree is very subjective and that several arborists could inspect the same tree and come to different conclusions on whether the tree should be removed.[46] This subjectivity poses a major challenge. Hazard trees present serious wildfire risks; they have been implicated as causal factors in recent catastrophic wildfires, including the Zogg Fire and the Dixie Fire. Moreover, removing hazard trees is time-consuming and expensive, so it is important to ensure that vegetation-management crews are removing the right trees.

Cal Advocates recommends that Energy Safety work with experts to develop regulations that define a hazard tree and provide criteria or guidelines for identifying hazard trees. Energy Safety should develop a standard that is more objective than subjective in the process for identifying hazard trees. Such a standard could help improve safety while avoiding unnecessary tree removals. For instance, Energy Safety could develop a standard tree assessment tool. Though making this tool may require substantial effort and require collaboration among regulators, utilities, and interested stakeholders, the development of a standardized tool would enhance findings based on individual arborist experience.

Lastly, Cal Advocates stresses that each utility bears responsibility for prudent vegetation management. Any revised regulations should make clear that guidelines regarding hazard trees

[46] Recording of the July 13, 2023 workshop, approximate timestamp 6:05:19, available at https://www.youtube.com/watch?v=k1DQmhPWe9I

are meant to aid the utility in making prudent decisions, but they would not relieve the utility of its fundamental obligation to prudently operate and maintain its system.

B. Energy Safety should clarify rules regarding removal and disposal of debris from vegetation management.

Proper removal of vegetation-management waste is crucial in reducing the risk of a catastrophic wildfire. It is also important to alleviate tensions between private landowners, utility workers, and contractors assigned to perform vegetation-management work. Addressing this persistent challenge would aid in creating an atmosphere of trust and professionalism between the utility workers and customers.

Cal Advocates recommends that Energy Safety consider developing regulations on how to properly dispose of vegetation-management waste (especially when vegetation-management work occurs on private property). The regulations could, among other things, state that the utilities are responsible for the cleanup of debris and fuel that results from vegetation-management work. Utilities should not leave behind fuel that could contribute to a catastrophic wildfire. The Green Power Institute and the Joint Local Governments raised this issue during the workshop.

C. Energy Safety should establish greater oversight of utility-hired contractors performing vegetation-management work.

Both in-house and contract labor serve a vital role in carrying out vegetation-management work. Contract labor employed by the utilities is flexible and able to adapt to changes as needed. In-house labor provides the utilities with increased control over work consistency and staff training. In-house labor is also more accountable to utility management, to whom it reports directly rather than through an intermediary organization. Cal Advocates has noted in previous comments that the utilities have experienced numerous challenges with the contracted workforce conducting vegetation-management work.[47]

Because most of the vegetation-management work is currently performed by contractors, Energy Safety should develop regulations to improve utilities' oversight of contractors. The utilities are responsible for the quality of the contractors' work.[48] Utilities should track the

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[47] *Comments of the Public Advocate's Office on the 2022 Wildfire Mitigation Plan Updates of the Large Investor-Owned Utilities Docket 2022-WMPs,* April 11, 2022.

[48] Utility companies are responsible for their independent contractors' work. The requirement that the utility company must do "everything necessary to secure compliance with the law and rules by its agents

quality of work of individual contractors and develop specific action plans to address problematic contractors. Each utility should consistently perform QC audits of its contractors. When QC reveals problems, the utility should require remedial work, perform spot checks of other jobs by the same contractor, and take action to either improve quality or terminate underperforming contractors.

Establishing regulations that create oversight across vegetation-management contractors will promote safety and can help highlight best practices in quality control. These regulations would also serve as a tool that can help Energy Safety and regulators hold utilities accountable for failures and provide remedial actions as needed. Though the utilities hire contractors to perform vegetation-management work, doing so does not absolve the utility of responsibility if failures occur and corrective actions are needed.

VII. Additional Safety Considerations: Safety-Management and Safety-Reporting Systems

A. California should adopt proactive safety-management system standards, patterned after General Order 167.

In an escalating risk environment, it is necessary for regulators to develop and enforce safety requirements that are proactive, adaptable, and robust. This development and enforcement of proactive safety requirements will encourage electric utilities to identify and correct problems before they become catastrophic incidents.

Regulators in other high-risk industries have adopted "Safety Management System" requirements for this purpose. GO 167 applies to electric generating facilities operating in California, but not to the maintenance and operation of transmission and distribution system assets.[49] However, the Commission's General Order 167 Safety, Maintenance, and Operation Standards for Power Plants provides a template that could be adapted to electric utility grids.[50]

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and officers is nothing more than an additional precautionary measure to prompt the utilities with regard to compliance by those persons. It does not mean that it may evade the duty by the independent contractor device or limit the scope of its duties thereby. It does not negate the existence of a nondelegable duty." Snyder v. Southern California Edison Co. (1955) 44 Cal.2d 793, 801-802 [285 P.2d 912] (citing Public Utilities Code section 702); see also Decision (D.) 04-04-065, *Opinion Finding Violations and Imposing Sanctions*, at 24-25 ("The Commission has similarly held that utilities have a nondelegable duty to comply with all applicable safety codes and regulations in certain instances.").

[49] Public Utilities Code § 761.3.

[50] GO 167B Maintenance Standards and Operations Standards links at the bottom of this link include a detailed listing of "Performance Standards and Assessment Guidelines":

Creating a standard akin to GO 167 for electric infrastructure resembles GGI's "Electronworthiness" proposal, which was adapted from the Federal Aviation Administration's (FAA) "Airworthiness" and the FAA's Continuing Analysis and Surveillance System (CASS) systems.[51]

Compared to other safety-management system standards, GO 167 is particularly suited to be adapted to California's electric system because of its detailed guidelines for maintenance and operations.[52]

1. Key elements of GO 167 standards.

GO 167 standards have many similarities with safety-management system standards adopted by regulators in other high-risk industries to improve safety and reduce incidents. GO 167 standards are broad and easily tailored to an electric grid with multiple maintenance and operations units. These are a few of the key elements:

a) GO 167 is designed to uncover and correct maintenance and operations issues, such as incomplete work, plant condition problems, backlog problems, procurement problems, and other problems that often go uncorrected until after an incident and subsequent investigation.

b) The regulator should audit the operator against the standards.

c) The operator should have time to assess its operations and to bring its programs into compliance with standards.

d) Once an operator is compliant with the standards, an officer of the company should certify compliance with the standards on a recurring basis.

e) GO 167 standards and audits establish an enduring safety regulatory system to proactively oversee safety for the future.

https://www.cpuc.ca.gov/regulatory-services/safety/electric-safety-and-reliability-branch/electric-generation-safety-and-reliability

[51] Office of Energy Infrastructure Safety, Regulatory Recommendations Workshop Slides, Slide 120. Available at: https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=54369&shareable=true

[52] More information on GO 167 was provided at the Energy Safety July 14, 2023, Workshop. The presentation is attached as Appendix A.

B. California should adopt a safety-reporting system for energy utilities.

A safety-reporting system (SRS) is a tool that can help utilities and their regulators uncover near misses and other safety issues before they cause fatalities, serious injuries, or environmental harm. Safety-reporting systems have been adopted by regulators in other high-risk industries (such as aviation) to improve safety and reduce the number of incidents.[53] [54] However, safety-reporting systems are not whistleblower programs.

Safety-reporting systems adopted by other regulators typically have the following common elements:

- Voluntary
- Confidential (operator-specific information is removed)
- Non-punitive
- Independent (the reporting system is independent of the utility and regulator)

Reports to the SRS should include near misses, safety issues, as well as incidents that are below mandatory reporting thresholds. After submission, reports are screened and go through a process of de-identification so that personal, company, and other revealing information is removed. Information from the reports can then be used to inform the industry via safety alert bulletins, online databases, and other communications. Such a program of sharing enables utilities, the regulator, and others to learn from one another and identify blind spots within their practices.

VIII. CONCLUSION

Cal Advocates respectfully requests that Energy Safety adopt the recommendations discussed in these comments.

[53] https://asrs.arc.nasa.gov/

[54] NASA presentation to the CPUC on Safety Reporting System, February 2014. Accessible at https://web.archive.org/web/20150905235447/http:/www.cpuc.ca.gov/NR/rdonlyres/392F9108-B5F3-428F-A59C-0761FC1DD13D/0/CPUCASRSConnellFINALFeb2014.pdf

Respectfully submitted,

/s/ ***Joseph Lam***

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July 28, 2023

APPENDIX A

The Public ADVOCATES OFFICE

Additional Safety Considerations: Proactive Regulatory Changes

OEIS July 13-14, 2023, Workshop on Safety Requirements to Address Increasing Wildfire Risk from Climate Change and Aging Infrastructure

Chris Parkes | July 14, 2023

Agenda

1. Background: Electric Utilities and Wildfires
2. Objective: Develop safety requirements for electrical infrastructure to address the dynamic risk from climate change and to mitigate wildfire risk. (per PU Code 326 (a)(7))
3. Recommendation: Move towards proactive safety regulation by developing and auditing safety management system standards patterned after the CPUC's GO 167 maintenance and operation standards for power plants.
4. Recommendation: Implement a Safety Reporting System program to uncover near misses and share those across the industry to reduce incidents.

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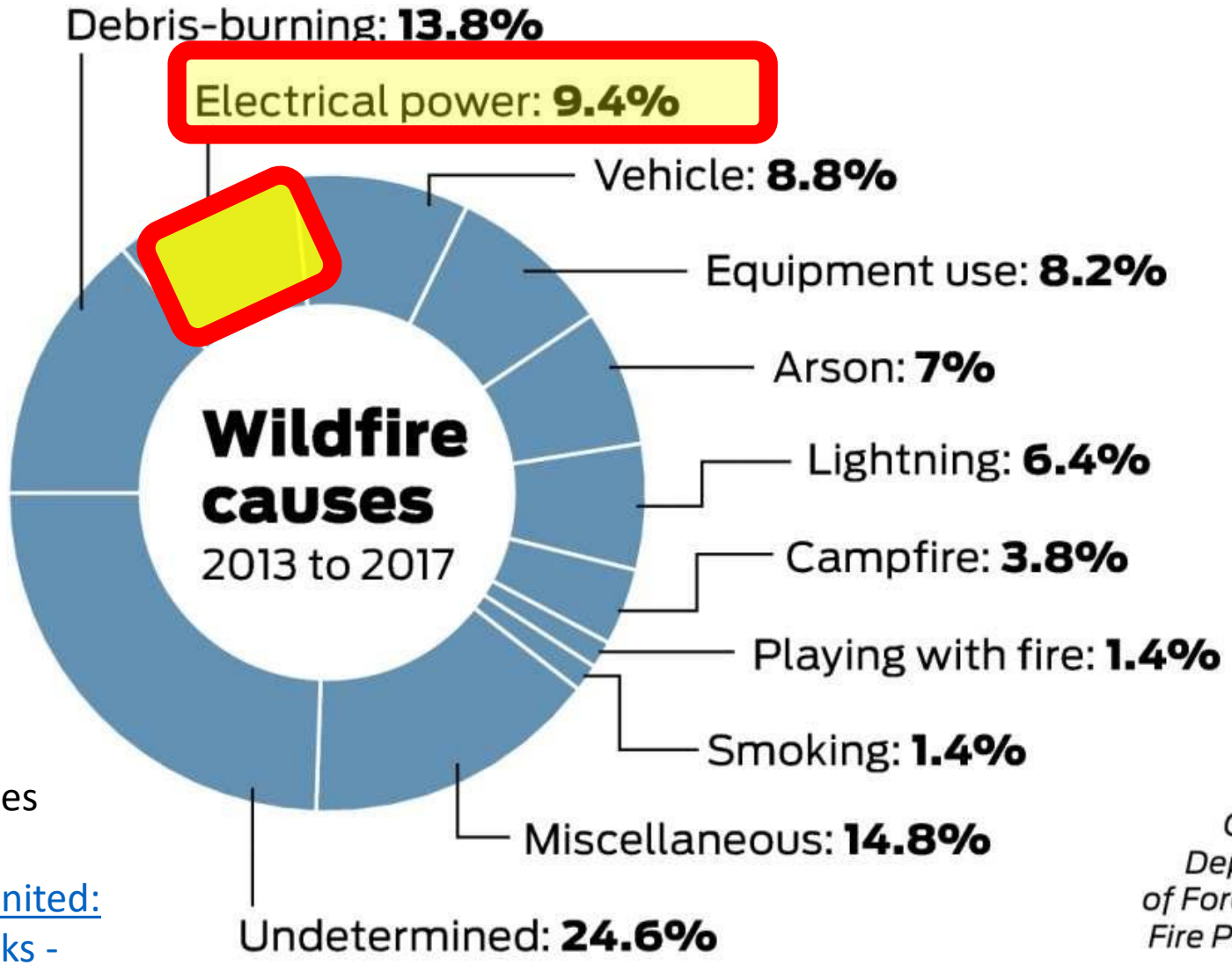
Electrical Power (inc. Powerlines) cause ~10% of Wildfires



San Francisco Chronicle: What causes wildfires? May 31, 2019

[How California's biggest wildfires ignited: power lines, cars, arsonists, fireworks - San Francisco Chronicle (sfchronicle.com)]

Powerline caused wildfires are among the most destructive

Top 20 Most Destructive California Wildfires

	FIRE NAME *(CAUSE)*	DATE	COUNTY	ACRES	*STRUCTURES*	DEATHS
1	CAMP *(Powerlines)*	November 2018	Butte	153,336	18,804	85
2	TUBBS *(Electrical)*	October 2017	Napa & Sonoma	36,807	5,636	22
3	TUNNEL - Oakland Hills *(Rekindle)*	October 1991	Alameda	1,600	2,900	25
4	CEDAR *(Human Related)*	October 2003	San Diego	273,246	2,820	15
5	NORTH COMPLEX *(Lightning)*	August, 2020	Butte, Plumas, & Yuba	318,935	2,352	15
6	VALLEY *(Electrical)*	September 2015	Lake, Napa & Sonoma	76,067	1,958	4
7	WITCH *(Powerlines)*	October 2007	San Diego	197,990	1,650	2
8	WOOLSEY *(Electrical)*	November 2018	Ventura	96,949	1,643	3
9	CARR *(Human Related)*	July 2018	Shasta County, Trinity	229,651	1,614	8
10	GLASS *(Undetermined)*	September 2020	Napa & Sonoma	67,484	1,520	0
11	LNU LIGHTNING COMPLEX *(Lightning/Arson)*	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
12	CZU LIGHTNING COMPLEX *(Lightning)*	August 2020	Santa Cruz, San Mateo	86,509	1,490	1
13	NUNS *(Powerlines)*	October 2017	Sonoma	44,573	1,355	3
14	DIXIE *(Powerlines)*					
15	THOMAS *(Powerline)*	December 2017	Ventura & Santa Barbara	281,893	1,063	2
16	CALDOR *(Human Related)*	September 2021	Alpine, Amador, & El Dorado	221,835	1,005	1
17	OLD *(Human Related)*	October 2003	San Bernardino	91,281	1,003	6
18	BUTTE *(Powerlines)*	September 2015	Amador & Calaveras	70,868	965	2
19	JONES *(Undetermined)*	October 1999	Shasta	26,200	954	1
20	AUGUST COMPLEX *(Lightning)*	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1

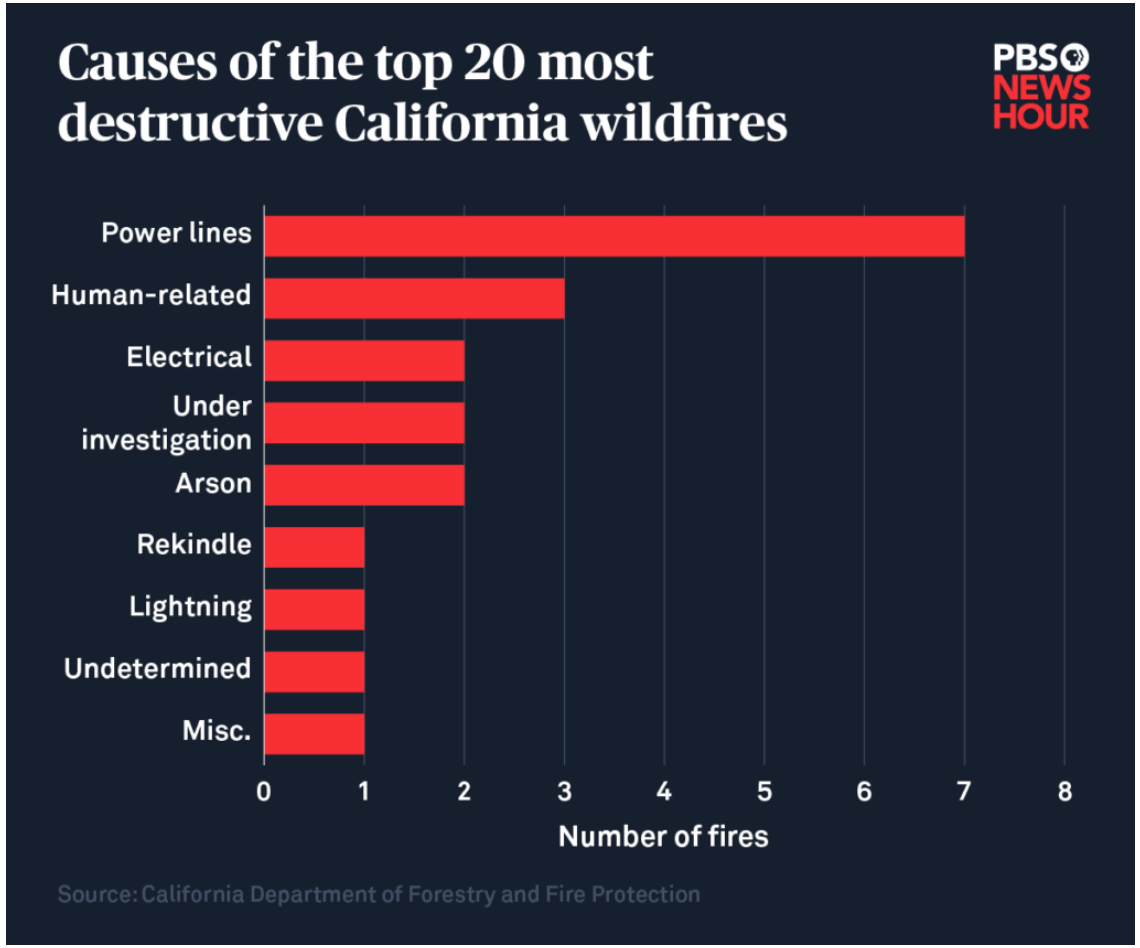
"Structures" include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.
*Numbers not final

10/24/2022

CalFire Top 20 Most Destructive Wildfires: Oct 24, 2022

[CalFire Top 20 Most Destructive Wildfires]

Powerline caused fires are among the most destructive



PBS NewsHour: Sep 14, 2020

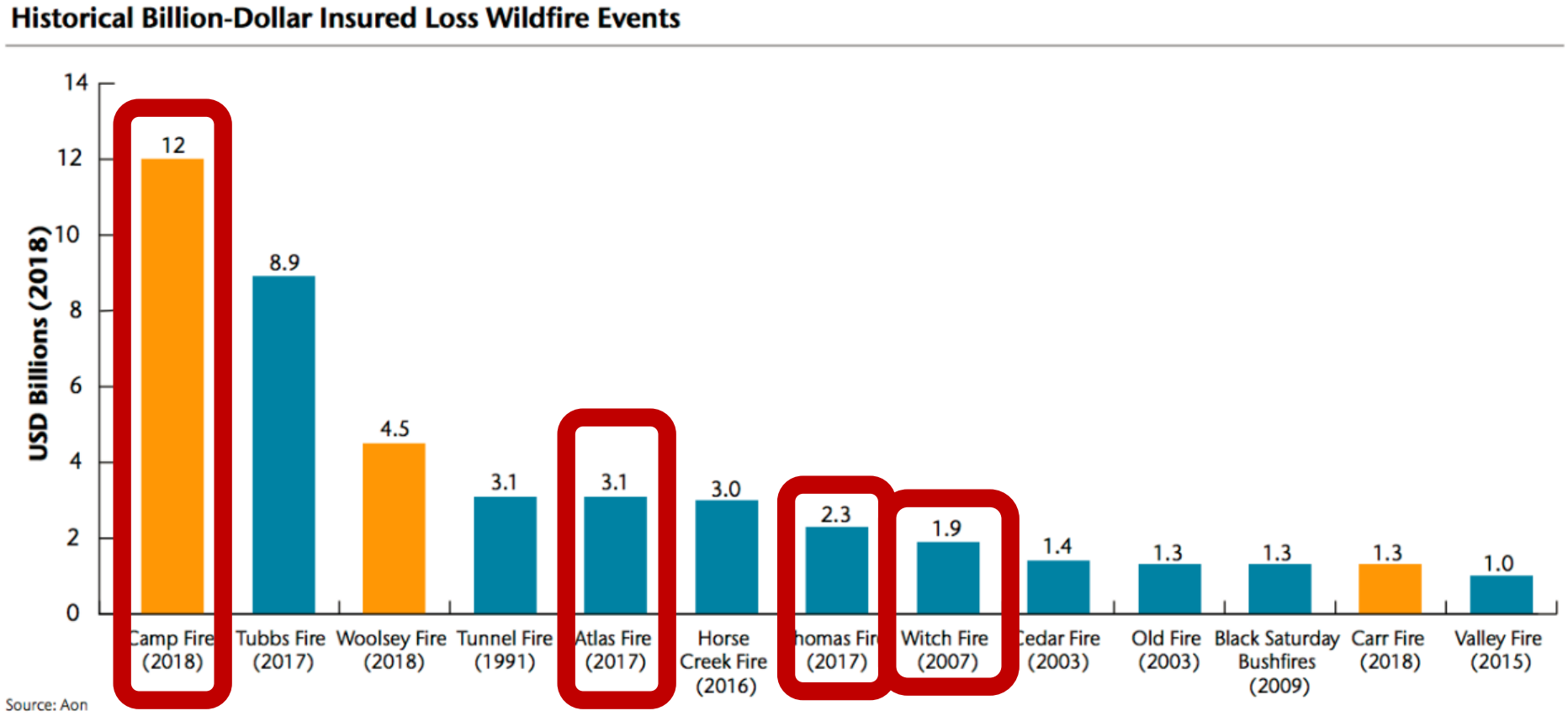
[California's catastrophic wildfires in 3 charts | PBS NewsHour]

Powerline caused wildfires can result in tragedies

Since 2017, there have been 117 fatalities and 23 serious injuries caused by utility-caused wildfires in California.

Most of the fatalities occurred as a result of the 2018 Camp Fire.

Powerline caused wildfires are costly



Reinsurance News: January 29, 2019

[Industry wildfire losses near $20bn in record year for insurers: Aon - Reinsurance News]

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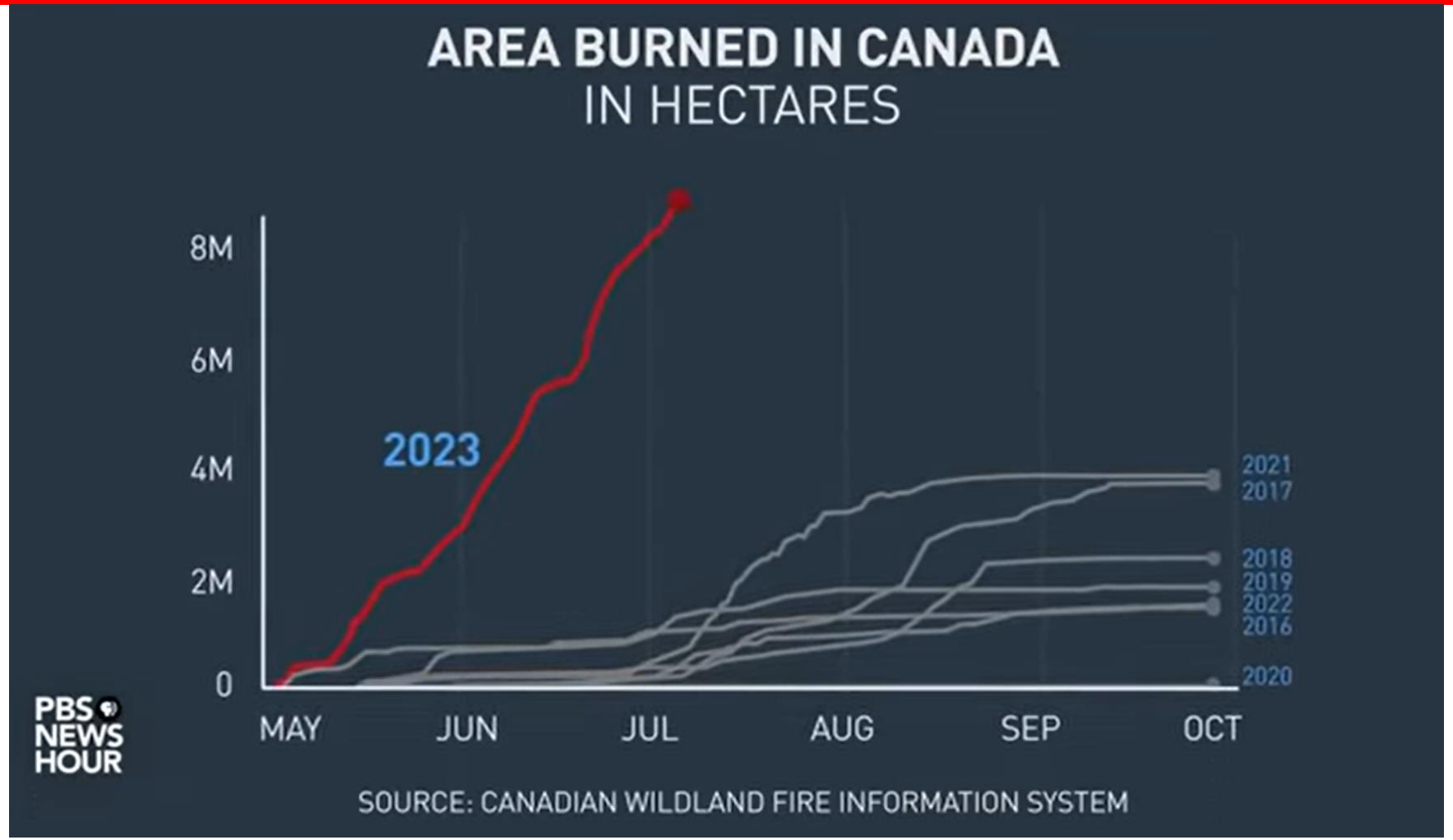
4. Recommendation: Implement a Safety Reporting System program to uncover near misses and share those across the industry to reduce incidents.

Today's Workshop:
Developing safety requirements for electrical infrastructure to address the dynamic risk from climate change and to mitigate wildfire risk.

Public Utility Code (PU Code) 326 (a)(7) directs Energy Safety to develop recommendations for:

"Review, as necessary, in coordination with the California Wildfire Safety Advisory Board and necessary commission staff, **safety requirements for electrical transmission and distribution infrastructure** and infrastructure and equipment attached to that electrical infrastructure and provide recommendations to the commission **to address the dynamic risk of climate change and to mitigate wildfire risk."**

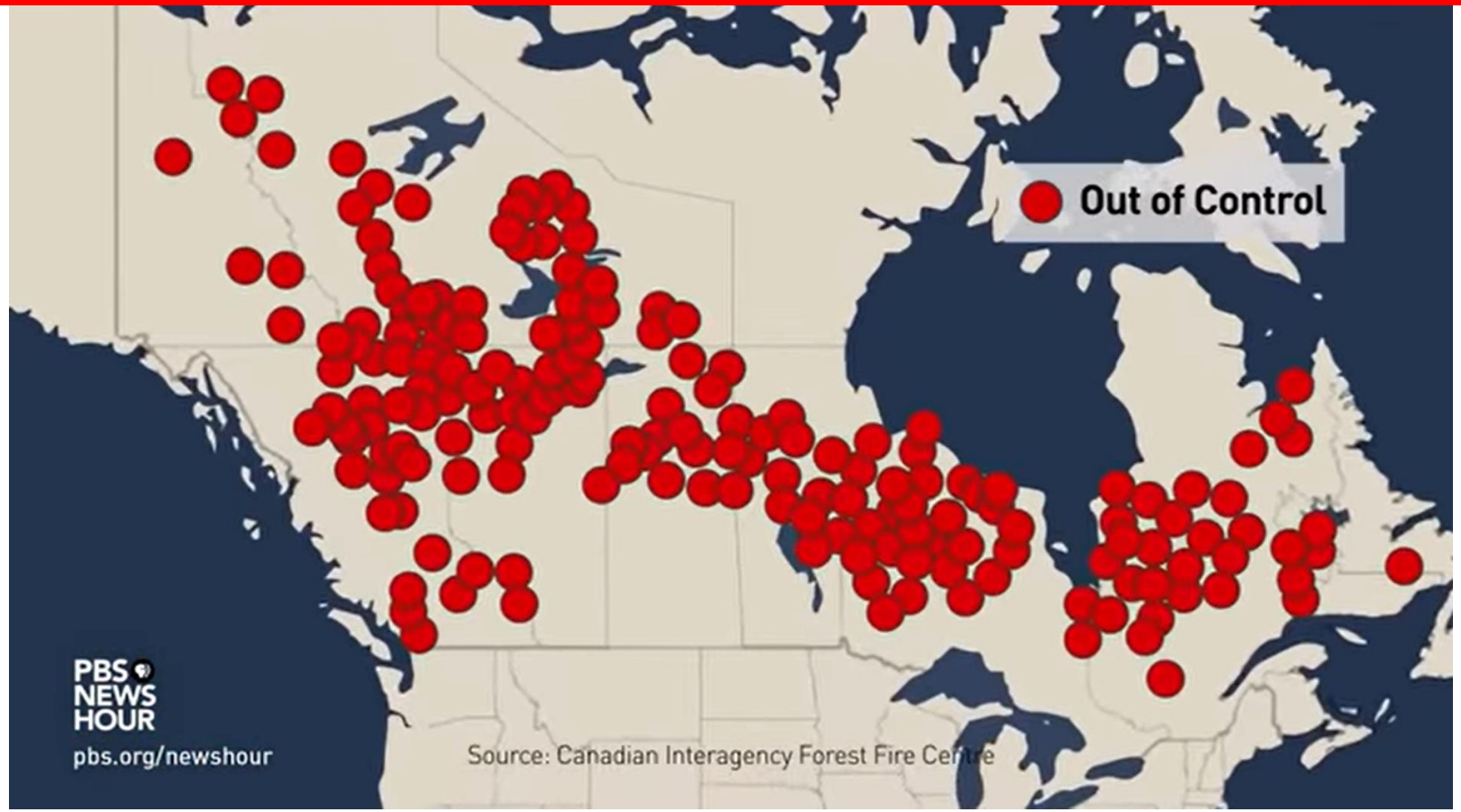
A rapidly escalating risk environment



PBS News Hours: July 6, 2023

[Record-breaking global temperature, raging wildfires highlight effects of climate change - YouTube]

A rapidly escalating risk environment



PBS News Hours: July 6, 2023

Record-breaking global temperature, raging wildfires highlight effects of climate change - YouTube

July 4 Was Earth's Hottest Day In Over 100,000 Years—Breaking Record For 2nd Day In A Row (forbes.com)

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4. Recommendation: Implement a Safety Reporting System program to uncover near misses and share those across the industry to reduce incidents.

Today's Workshop: Developing safety requirements to address wildfire risk considering aging infrastructure and climate change.

We should be proactive and less reactive in mitigating safety risk.

Past improvements have often come from reactive corrective actions:

1. An Incident occurs.
2. The Commission investigates the incident.
3. Deficiencies are uncovered.
4. Corrective actions are implemented.

Problems with this approach:

- Deficiencies are not identified until AFTER an incident, loss of life, and economic impacts.
- Follow-up is often transitory: follow-up audits and implementation may not endure.
- Improvements are operator specific.

Recommendation:

Move towards proactive safety regulation by developing and auditing safety management system standards patterned after the CPUC's GO 167 maintenance and operation standards for power plants.

What are GO 167 Maintenance and Operation Standards?

The Legislature and Governor passed SB 39X2 in response to the 2000/2001 Electrical Energy Crisis and Rolling Blackouts.

SB 39X2 directed the CPUC, in concert with the CAISO, to develop Maintenance and Operations Standards for power plants, and for the CPUC to then enforce those standards.

GO 167 Maintenance and Operational Standards are broad. The Maintenance Standards are relatively short. The Commission developed guidelines to support them. In a sense, these guidelines can serve as best practices. The guidelines can be useful indicators for operators and the Commission to evaluate compliance with the standards.

The Commission conducts recurring audits against these standards, and power plants institute corrective action plans.

Why should a regulator adopt Electric Utility standards patterned after GO 167?

1. GO 167 standards have a lot in common with safety management system standards adopted by regulators in other industries to improve safety and reduce incidents.
2. Investigations and special audits after wildfire incidents in California often find work that was incomplete, plant condition problems, utility backlog problems, procurement, and other problems that could have been uncovered under GO 167 type program standards and audits.
3. The development of other new CPUC risk management programs is less effective, if implementation of those new programs, and the implementation of the operator's existing programs, continue to suffer from flaws that are not detected and corrected prior to becoming an incident.
4. It is necessary that the regulator audit the operator against the GO 167 type standards.
5. It is necessary that the operator have time to assess its operations and to bring its programs into compliance with GO 167 type standards.
6. Once compliant with the standards, it is necessary that an officer of the company certify compliance with the standards on a recurring basis.
7. GO 167 standards and audits create an enduring infrastructure to pre-emptively address issues normally not uncovered until after issues become incidents.

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4. **Recommendation: Implement a Safety Reporting System program to uncover near misses and share those across the industry to reduce incidents.**

What is a Safety Reporting System?

A Safety Reporting System is a tool that can help utilities and their regulators uncover near misses and other safety issues before they cause incidents, which can lead to fatalities, serious injuries, and/or environmental harm.

Safety Reporting Systems have been adopted by regulators in other risky industries (such as aviation) to increase safety.

Safety Reporting Systems are:

- Voluntary
- Confidential
- Non-Punitive
- Independent

Safety Reporting Systems are NOT whistleblower programs.

Adopting a Safety Reporting System will help improve utility safety in California.

Thank you for your consideration!

Chris Parkes
Program and Project Supervisor
Safety Branch
Public Advocates Office
California Public Utilities Commission