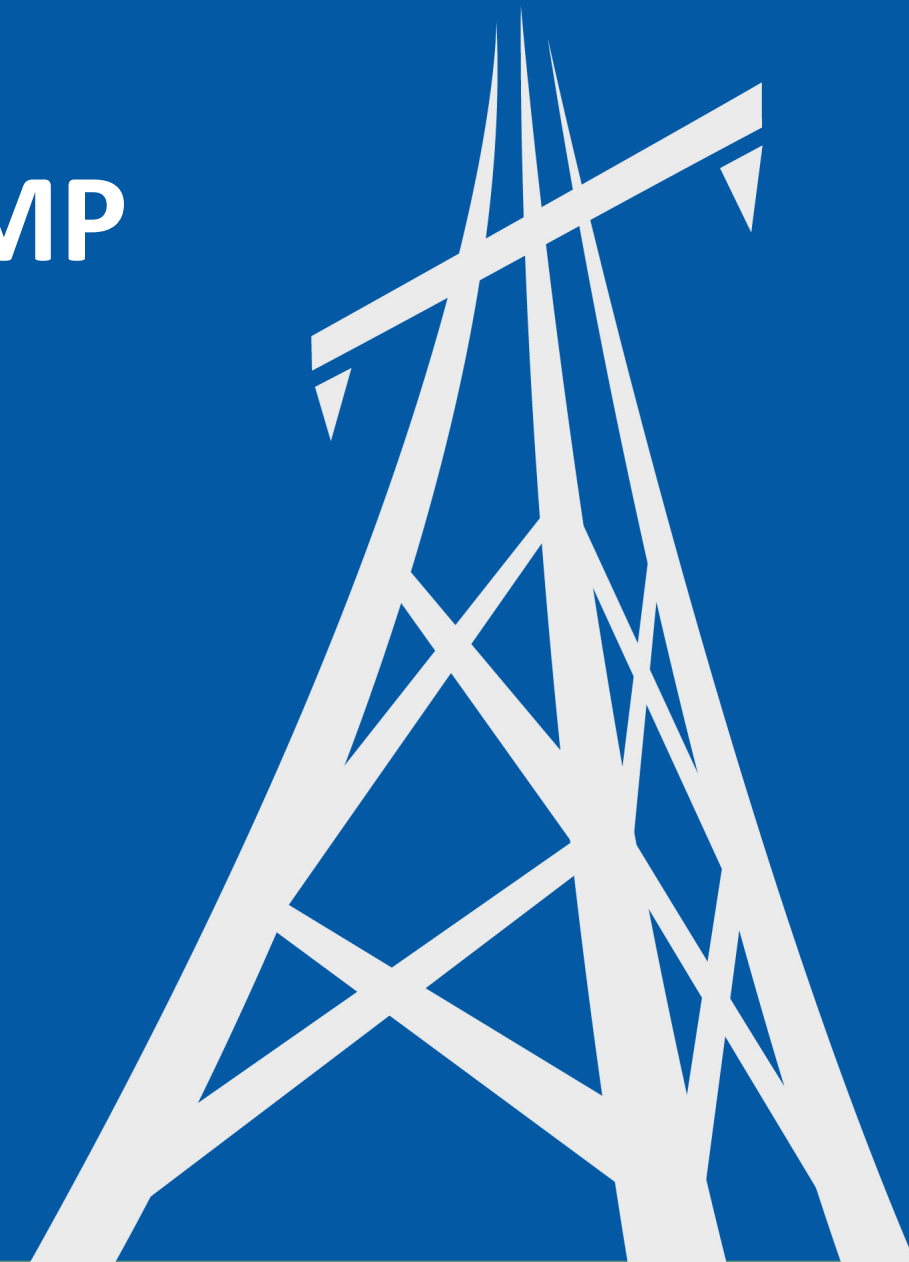
Evaluation of WSAB Recommendations for WMP Guidelines, Performance Metrics, and SCA Process

Presentation at Board Meeting
Sept. 4, 2024



Presentation Objective

- Provide an overview of the analysis and recommendations of the Office of Energy Infrastructure Safety (Energy Safety) regarding the Wildfire Safety Advisory Board (WSAB) Recommendations Report*

*Recommendations to Office of Energy Infrastructure Safety on Additional Wildfire Mitigation Plan Requirements and Performance Metrics, and Safety Culture Assessment (June 2024)

Background

- Public Utilities Code section 8389(b) directs the WSAB to make recommendations to Energy Safety annually regarding Wildfire Mitigation Plan requirements, performance metrics, and the Safety Culture Assessment process.
    - The WSAB adopted its Recommendations Report on June 5, 2024.
- Public Utilities Code section 8389(c) directs Energy Safety to issue an analysis and recommendation to the California Public Utilities Commission (CPUC) on the recommendations provided by the WSAB
    - Energy Safety published its Evaluation Report* on August 22, 2024

*Evaluation of the Wildfire Safety Advisory Board Recommendations for the Wildfire Mitigation Plan Guidelines, Performance Metrics, and Safety Culture Assessment Process

Overview of Energy Safety Recommendations

- Wildfire Mitigation Plans (WMPs) – 15 Recommendations from WSAB
  - Incorporate as proposed – 1
  - Incorporate with adjustments – 9
  - Potentially incorporate in the future – 2
  - Not incorporate – 3
- Performance Metrics – 1 Recommendation from WSAB
  - Not incorporate – 1
- Safety Culture Assessments (SCAs) – 5 Recommendations from WSAB
  - Potentially incorporate in the future – 4
  - Not incorporate – 1

WMP Recommendations

WMP RECOMMENDATIONS

1. **Cost benefit analysis (CBA) calculations should quantify the benefits of avoided PSPS events. Furthermore, Energy Safety should require the electrical corporations to describe how they calculate the benefits from avoided events and include these benefits as part of their CBA calculations.**

Energy Safety Recommendation: Incorporate with adjustments

- The Wildfire Mitigation Strategy section of the draft WMP Technical Guidelines will require electrical corporations to include a breakout of the amount of CBA influenced by PSPS risk, when CBA is required.

WMP RECOMMENDATIONS

1a. Energy Safety should require the electrical corporations to provide information on areas that have already been hardened that are still subject to PSPS events. This data should include the relevant metrics on customer outage minutes in hardened areas due to PSPS events.

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety can perform spatial analysis of existing spatial reporting to determine an electrical corporation's customer outage minutes due to PSPS events in hardened areas.
- However, this data is not public. Therefore, Energy Safety will require each electrical corporation to provide a narrative describing areas that have been hardened that are still subject to PSPS events and the electrical corporation's plan to mitigate the PSPS events in these hardened areas.

WMP RECOMMENDATIONS

1b. Energy Safety should require the electrical corporations to collect data and report on how effective the grid hardening work is in terms of estimated outage and PSPS event reduction.

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety will require electrical corporations to report on how effective each grid hardening initiative is in terms of estimated PSPS risk reduction.
- For the data collection portion, Energy Safety's Electrical Safety Policy Division and Data Analytics Divisions plan to collaborate to determine the data requirements necessary to allow us to analyze effectiveness for grid hardening initiatives.

WMP RECOMMENDATIONS

2. Energy Safety should require the electrical corporations to report in WMPs their evaluation of the risk of legacy, pre-GO 95 equipment in the electrical corporation's service territories in the HFTD, including the methods that they used and assumptions they made in that evaluation, and their plans to mitigate those risks.

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety will incorporate by requiring each electrical corporation to provide information on how it evaluates the risk of legacy, pre-GO 95 equipment in the HFTD, including any maintenance and/or replacement plans for this equipment, and any additional inspection practices.

WMP RECOMMENDATIONS

3. Energy Safety should issue guidance to the electrical corporations to prioritize undergrounding of circuits originating from transmission substations for areas where undergrounding is deemed to be the best-suited hardening measure. Energy Safety should require the electrical corporations to include information in the text or in the appendix of their WMPs regarding how individual undergrounding projects reduce both wildfire and PSPS risk. If the specific undergrounded segments are still at risk of PSPS events, then this needs to be clearly stated and the electrical corporation needs to clearly explain how it intends to virtually eliminate that PSPS risk within 5-10 years.

Energy Safety Recommendation: <u>Incorporate with adjustments</u>

- Energy Safety does not look at individual undergrounding plans as part of its WMP analysis.
- Energy Safety will require electrical corporations to describe their strategy for mitigating undergrounded segments that are still at-risk of PSPS events due to upstream mitigation efforts.

WMP RECOMMENDATIONS

4. Asset and vegetation management inspection and maintenance: In addition to annual targets, Energy Safety should require electrical corporations to include the total number of assets and total circuit miles that need to be inspected system-wide and the cadence of the inspections over the three-year reporting cycle of the WMP.

Energy Safety Recommendation: Incorporate with adjustments

- Can be calculated from data already submitted to Energy Safety by the electrical corporations.
- However, Energy Safety will require that electrical corporations report the percentage of the system their inspections cover for each year of the three-year cycle of the WMP.

WMP RECOMMENDATIONS

5. Energy Safety should require the electrical corporations to detail plans that remedy issues of improperly rated equipment accounting for both current and fault duty.

Energy Safety Recommendation: Potentially incorporate in the future

- Energy Safety will not incorporate this recommendation at this time as it would be too prescriptive, and outside the typical scope of the WMP evaluations.
- Energy Safety will further research this concept to determine if this recommendation or something similar could be beneficial to incorporate into future iterations of the WMP Guidelines.

WMP RECOMMENDATIONS

6. Energy Safety should require the electrical corporations to include in the WMPs an evaluation of the risk from the remaining non-exempt equipment from Public Resources Code (PRC) Section 4292 in the HFTD.

Energy Safety Recommendation: Incorporate

- Energy Safety will incorporate in the Grid Design section of the draft WMP Technical Guidelines.

WMP RECOMMENDATIONS

7. Energy Safety should require the small and multi-jurisdictional utilities (SMJUs) to include a brief narrative in their WMPs about how wildfire mitigation efforts fit within the broader context of the electrical corporation's enterprise risk management (ERM) as part of its risk informed framework.

Energy Safety Recommendation: Do not incorporate

- Energy Safety does not recommend prescribing different requirements/having different guidelines for the SMJUs, as opposed to the large IOUs.
- Electrical corporations' ERMs are outside of WMP Guidelines purview and is not information typically used to evaluate WMPs.

WMP RECOMMENDATIONS (1/2)

8. Energy Safety should require the electrical corporations to clearly articulate a strategy in their WMPs for mitigating PSPS vulnerability and enhancing the resiliency of areas of high societal and economic importance, such as central business districts and downtown areas, that are otherwise not required by law to have backup generation. This should include an overview of all of the areas that are currently at risk (i.e. listing all of the areas still at risk), the estimated economic impacts of PSPS events to those areas (if known), and a description of how the electrical corporation will use any combination of grid hardening from the transmission substation to the area, deployment of mobile generation, or installation of a microgrid and over what time frame.

Energy Safety Recommendation: Do not incorporate

- Energy Safety created a cross-utility area for continued improvement to improve PSPS modeling (wildfire and PSPS tradeoff transparency).
- Requiring the electrical corporations to include the economic impacts of PSPS without providing a recommended methodology for calculating those impacts may not provide useful results.

WMP RECOMMENDATIONS

9. Energy Safety should require the electrical corporations to report their risk analyses by ecological regions (or pyromes) in addition to their service territory as a whole. Once overall service territory analyses are made, these existing risk assessments should be refined by ecoregions as well.

Energy Safety Recommendation: Do not incorporate

- Energy Safety does not plan to incorporate this recommendation into the draft WMP Technical Guidelines, as it could reframe the electrical corporation's service territory by sectionalizing it into ecological regions as opposed to evaluating location-specifics.
- Energy Safety requires weather and location-specific information in electrical corporations' risk models and outputs that provide greater granularity than establishing ecological regions.

WMP RECOMMENDATIONS

10. Energy Safety should require the electrical corporations include risk matrices in their WMPs to depict the relative risks of the issues that they are addressing that relate to the areas of capital upgrades, and operations and maintenance expenditures including, but not limited to, their grid hardening, inspections, and vegetation work.

Energy Safety Recommendation: Potentially incorporate in the future

- Energy Safety prefers to promote location-specific mitigation implementation and decision-making in order to maintain specificity on addressing location-specific drivers with mitigations tailored to those drivers. However, Energy Safety sees the merit in pursuing risk/safety visual components.
- Energy Safety will research this recommendation further for potential inclusion of risk matrices and/or risk/safety visual components in future iterations of the WMP Guidelines.

WMP RECOMMENDATIONS

11. Energy Safety should require electrical corporations to report infrastructure component risks of failure against risk of ignition. A risk matrix should be included to illuminate the volume of a particular asset type (component) in the service territory. These should include (but not be limited to) different assets such as expulsion fuses, lightning arrestors, and conductors.

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety is interested in understanding particular ignition risk components.
- Energy Safety plans to incorporate by:
  - Requiring the electrical corporations to provide a narrative in their WMPs describing CPUC ignitions in the High Fire Risk Area (HFRA) attributed to each component.
  - Requiring electrical corporations to report their HFRA maps in data submissions to allow Energy Safety to analyze existing ignitions spatial reporting against each electrical corporations HFRA.
- Energy Safety already requires electrical corporations to report the above information for the High Fire Thread District (HFTD)
- Energy Safety will further research the potential inclusion of risk matrices in future WMP Guidelines iterations.

WMP RECOMMENDATIONS

12. Energy Safety should require electrical corporations to reorganize the required Table 6-1: Summary of Risk Models to show the relationship between models in a hierarchical way to reduce confusion and better illuminate the relationships between models.

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety is currently updating Table 6-1 in the Risk section of the draft WMP Technical Guidelines to include clearer diagrams of how models are interrelated.
- Will take this recommendation into account while updating.

WMP RECOMMENDATIONS

13. Energy Safety should require electrical corporations that deployed Machine Learning (ML) risk mitigation of wildfire to report the following: 1) Data collection methods; 2) Data preparation and cleaning methods; 3) Machine learning model; and 4) Model evaluation

Energy Safety Recommendation: Incorporate with adjustments

- Energy Safety agrees that Machine Learning and Artificial Intelligence processes deployed by electrical corporations should be more transparent and, at some point, included within the WMP. Energy Safety is currently developing its capabilities surrounding Machine Learning and integrating requirements into the guidelines is not yet feasible.
- Energy Safety will continue to develop its capabilities surrounding Machine Learning and pursue research related to this recommendation for potential future inclusion.
- Energy Safety plans to incorporate the data and model validation aspects from this recommendation throughout the draft WMP Technical Guidelines.

Performance Metrics Recommendation

PERFORMANCE METRICS RECOMMENDATION (1/2)

1. **Energy Safety should require the electrical corporations to provide updated metrics for outages and wires down events to indicate the number of these events that occur during the fire seasons in the electrical corporations' service territories. In addition, Energy Safety should also require the electrical corporations to provide these metrics broken down by ecological regions if feasible. Energy Safety should further require them to define the ecological region boundaries and fire seasons in the table notes or in a supportive narrative.**

Energy Safety Recommendation: Do not incorporate

- The work required to fulfill this recommendation would not result in significant additional benefit to its evaluations. However, Energy Safety will consider this recommendation in its future efforts to study, develop, and improve upon the existing performance metrics.
- Although not an exact match for the categories in the non-spatial reporting, risk events of interest are reported in Quarterly Data Reports (QDR) spatial data. Those events include time and location, which Energy Safety could use to aggregate events by a given "fire season," with consideration to HFTD as well.

SCA Recommendations

SCA RECOMMENDATIONS

1. Energy Safety should include a question about management integrity and ethics in the Workforce Survey.

Energy Safety Recommendation: Potentially incorporate in the future

- SCA currently has four integrity and ethics-related ranked questions* within the existing SCA workforce survey but will keep this in mind when during future revisions of the Workforce Survey.

**Existing Questions: (1) My supervisor would use whatever power they have to help me out; (2) My supervisor makes sure all employee concerns are heard before job decisions are made; (3) Managers treat workers with respect; and (4) I believe managers apply the same rules for all workers.*

SCA RECOMMENDATIONS

2. Energy Safety should include a question in the Workforce Survey about employee comfort level in reporting safety concerns or safety misconducts that have not been fully addressed.

Energy Safety Recommendation: Potentially incorporate in the future

- This recommendation is not covered by the current workforce survey. Energy Safety will keep this recommendation in mind during future revisions of the Workforce Survey.

SCA RECOMMENDATIONS

3. Energy Safety should include a question in the Workforce Survey about how frequently the electrical corporation performs workplace hazard assessments.

Energy Safety Recommendation: Potentially incorporate in the future

- This recommendation is not covered by the current workforce survey. Energy Safety will keep this recommendation in mind during future revisions of the Workforce Survey.

SCA RECOMMENDATIONS

4. Energy Safety should request that each electrical corporation develop or submit details of behavior-based safety programs that are currently driving its safety culture.

Energy Safety Recommendation: Potentially incorporate in the future

- This recommendation is not covered by the current management self-assessment. Energy Safety will keep this recommendation in mind during future revisions of the SCA process.

SCA RECOMMENDATIONS

5. Energy Safety should require each electrical corporation to create a required, trackable curriculum of safety culture trainings for their management teams which would include topics such as safety behaviors, regulations, policies, and laws with refresher intervals.

Energy Safety Recommendation: Do not incorporate

- SCA produces reports with findings and recommendations that the electrical corporations may agree to implement; it does not issue requirements with consequences for noncompliance.
- Energy Safety will consider how it may be able to incorporate tracking of safety culture trainings and/or existing mandatory trainings into the SCA process.

DATA DRIVEN
FORWARD-THINKING
INNOVATIVE
SAFETY FOCUSED

www.energysafety.ca.gov

OFFICE OF ENERGY INFRASTRUCTURE SAFETY
A California Natural Resources Agency

715 P Street, 20th Floor
Sacramento, CA 95814
916.902.6000