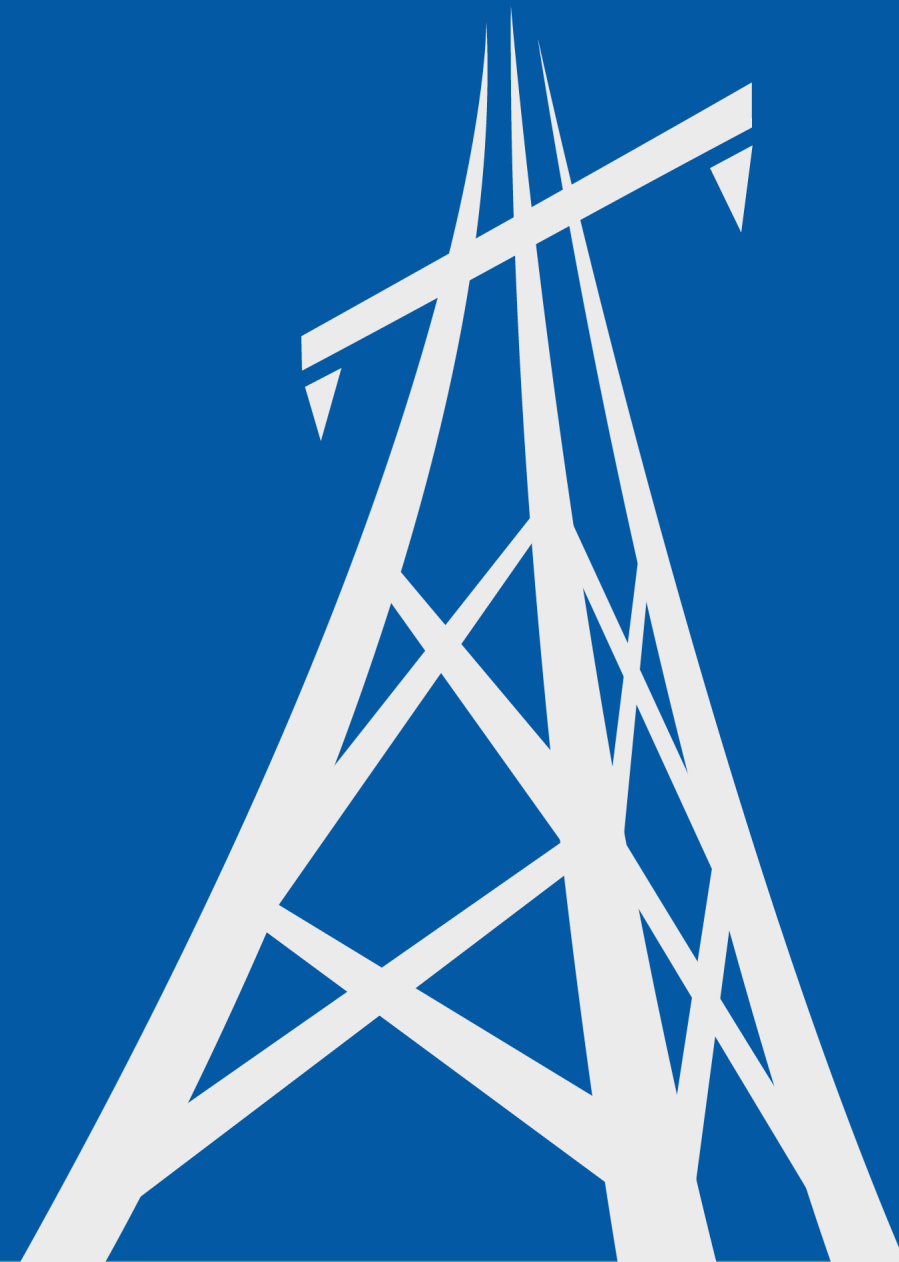
WILDFIRE MODELING WORKING GROUP INTRODUCTION

Suzie Rose, October 5, 2021



Working Group Background

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2021 WMP Action Statements Cross-Utility Issue:

The utilities do not have a consistent approach to wildfire risk modeling. For example, in their wildfire risk models, utilities use different types of data, use their individual data sets in different ways, and use different third-party vendors. Energy Safety recognizes that the utilities have differing service territory characteristics, differing data availability, and are at different stages in developing their wildfire risk models. However, **the utilities face similar enough circumstances that there should be some level of consistency in statewide approaches to wildfire risk modeling.**

Working Group Background

2021 WMP Action Statements Cross-Utility Associated Remedy:

The utilities must collaborate through a working group facilitated by Energy Safety to **develop a more consistent statewide approach to wildfire risk modeling**. After Energy Safety completes its evaluation of all the utilities' 2021 WMP Updates, it will provide additional detail on the specifics of this working group.

A working group to address wildfire risk modeling will allow for:

1. Collaboration among the utilities;
2. Stakeholder and academic expert input; and
3. Increased transparency

Working Group Background

The purpose of the working group is to bring more **consistency** across utilities in terms of risk modeling, and **determine the most effective and accurate methods, data sets, and analyses** for the utilities to utilize in modeling, specifically in terms of:

- The likelihood of ignitions;
- The consequences of ignitions; and
- The extent to which varying mitigation alternatives impact the frequency and duration of public safety power shutoff (PSPS) events.

Working Group Workplan Guidelines

Workplan Guidelines Background

- On 9/30, Energy Safety issued workplan guidelines to the utilities outlining topics for the Wildfire Risk Modeling Working Group
- Energy Safety asked the utilities to use these topics to inform today's presentations
- Utilities must submit a report to provide further details on these topics to establish:
    I. A baseline understanding of the utilities' current risk modeling efforts; and
    II. Intended changes between now and the 2022 WMP Update

Workplan Guidelines Background (cont.)

- The working group may not be able to cover all topics listed in the workplan guidelines between now and the 2022 WMP Update
- Tomorrow afternoon we will present the proposed format and schedule of topics for the working group, with time for feedback and discussion.
- Comments received today and post-workshop will help determine which topics to prioritize during working group meetings.
- The workplan guidelines are on the Energy Safety website at: https://energysafety.ca.gov/events-and-meetings/events/wildfire-risk-modeling-coordination-workshop/

Workplan Guideline Requirements

- Data used broken down by model, including:
  - Scale and geographical context
  - Topography
  - Quality of historical outage, fault, and ignition data
  - Usage of outage and fault events to augment ignition data
  - Integration of potential ignitions avoided due to PSPS events (to account for bias in ignition data post during PSPS events)
  - Asset data (including asset age, health, inspection results, type, etc.)
  - Impacts of system hardening and other initiative efforts

Workplan Guidelines Requirements (cont.)

- Data used broken down by model, including:
  - Climate conditions (including historical wind conditions, relative humidity, temperature, etc.)
  - Vegetation (including type, density, height, etc.)
  - Fuel characteristics (including load, size, continuity, vertical arrangement, moisture, etc.)
  - Impacts of Routine and Enhanced vegetation management activities (including tree-trimming, tree-removal, inspections, etc.)
  - Frequency of updates to datasets and inputs, including any associated triggers to determine the need for updates
  - Accuracy and quality checks for data and inputs

Workplan Guidelines Requirements (cont.)

- Model descriptions for ignition, consequence, and PSPS models, including:
  - Algorithms used and machine learning capabilities
  - Impact of climate change
  - Ingress and egress
  - Modeling components, linkages, and interdependencies
  - Weight of each data components and inputs
  - Automatization implemented
  - Frequency of updates to modeling, including the basis for updates

Workplan Guidelines Requirements (cont.)

- How model outputs are analyzed and utilized for each model, including:
  - Confidences for each modeling component, including how such confidences were determined
  - Range of uncertainty for model outputs, including how those ranges are determined and how uncertainty is minimized
  - Systems used to verify the model outputs, including verifier (subject matter experts, third-party) and description of implementing lessons learned
  - How uncertainty affects the interpretations of model outputs
  - Determination of highest risk areas based on model outputs
  - Use of subject matter expertise for inputs and further verification

Workplan Guidelines Requirements (cont.)

- Description of any collaborations previously undertaken among the utilities, as well as details on consistency across utilities, including:
  - What modeling approaches are already consistent
  - Which modeling approaches have the potential for more consistency and how approaches would benefit from consistency
  - Where consistency is infeasible or not necessary.

Workplan Guidelines Requirements (cont.)

- Description of any collaborations previously undertaken and/or ongoing with other entities
- Anticipated changes to any of the models between now and the 2022 WMP Update
- Attachments of any internal or third-party validations completed, and description of any peer review utilized