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Staff Workshop Agenda

Research Needs on Ignition Prevention and Utility System Vegetative Intrusion Detection and Suppression

Tuesday, October 16, 2018, 9:00 AM to 12:00 PM

California Energy Commission
Charles Imbrecht Hearing Room

This staff workshop will provide an opportunity for working group members, stakeholders, interested federal, state, local agencies, and the public to participate in the shaping of research consistent with the Electric Program Investment Charge (EPIC) 2018-2020 Investment Plan.

Invited members of the working group, and public participants will discuss research needs to reduce and eliminate combustive ignition events from the utility system and improve vegetative intrusion detection and suppression measures. They will also work to achieve consensus on near-term research needs by priority order.

9:00 AM – 9:10 AM: Welcome and Introduction

Introduction and the purpose of the workshop.

9:10 AM – 10:30 AM: Ignition Prevention Science and technologies

Only 5 percent of vegetative ignitions in California occur from the power system. Unfortunately, the probability of ignitions from power lines increases with wind speed. Greater wind speed means conditions are more favorable for vegetative ignition, and suppression is less effective. Ignition and combustion of material contacting the power system is a significant concern to homes and businesses, state government, local communities, and electric utilities.

The working group members will provide their perspectives on current work to prevent ignition events and discuss any planned research to enhance these efforts along with possible new research that is needed. Areas that may be explored are:

- Possible research areas:
 - Develop better information on conductor failure causation and prediction (e.g., from broken/falling vegetation, flying debris, wire slap, age and degradation, toppling poles)
 - Leverage voltage and phasing data to inform decisions on which circuits to de-energize in the event of an emergency
 - Develop a falling conductor detection scheme (e.g., detect a falling conductor and de-energize the circuit before it falls)
 - Improve methods for assessing the post-installation condition of overhead lines (beyond visual observation)
 - Evaluate the effectiveness of infrastructure hardening methods and ignition prevention of utility equipment
 - Investigate low energy automatic reclosers

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- Demonstrate advanced power poles with sensors for strike detection, wind, downed wire, and real-time loading
- Decentralize the control of safety equipment (e.g., automatic response) for faster system response to events

Discussion and questions from the audience

10:30 AM – 11:50 AM: Utility System Vegetative Intrusion Detection and Suppression

This session will discuss current research on Utility System Vegetative Intrusion Detection and Suppression.

Vegetation accounts for a quarter of reported ignition incidents from power lines. Arborists are not able to predict which trees will fail under wind conditions exceeding 55 miles per hour, but even tree failure with winds of 25 miles per hour is hard to predict.

The working group members will provide their perspectives on current work on Utility System Vegetative Intrusion Detection and Suppression and discuss any planned research to enhance these efforts along with possible new research that is needed. Areas that may be explored are:

- Possible research areas:
 - Identify more effective and accurate evaluation methods to assess the intrusion of vegetation
 - Leverage technology (e.g., augmented visualization) to be able to recognize increased hazardous conditions from vegetation
 - Pair LIDAR and other imaging/sensing with data analytics (approaching real-time analysis) to pin-point vegetation that poses the highest risks
 - Develop best approaches to reducing right-of-way risks from vegetation intrusion

Discussion and questions from the audience

11:50 AM – 12:00 PM: Next Steps and Concluding Remarks

Adjourn