

Innovative Solutions to Wildfire Mitigation

AEIC Members Develop Risk Reduction Measures

BY ASSOCIATION OF EDISON ILLUMINATING COMPANIES CEO STEVE HAUSER

In 2024, there were nearly sixty-five thousand wildfires reported across the U.S., causing loss of life, consuming almost nine million acres of land, and destroying approximately forty-five hundred structures, including more than twenty-four hundred residential homes.

In addition, the damage to the electric grid is estimated to be in the billions of dollars, particularly in regions like California where major wildfires have impacted power lines and substations, causing extensive service disruptions and repairs to critical infrastructure.

The Los Angeles area wildfires in January, fueled by a devastating combination of extremely dry conditions and high winds, were among the most deadly and destructive fires in the state's history. This is a growing national concern that is not expected to subside any time soon.

The U.S. Environmental Protection Agency states that, "multiple studies have found that climate change has already led to an increase in wildfire season length, wildfire frequency, and burned area. The wildfire season has lengthened in many areas due to factors including warmer springs, longer summer dry seasons, and drier soils and vegetation."

Last year's wildfire devastation was greater than the year before and noticeably higher than the five- and ten-year national averages. Historical data show that the ten years with the greatest acreage burned due to wildfires have all occurred in the last two decades.

Recognizing this ever-increasing threat from wildfires, AEIC's member companies, particularly in heavily impacted western states, have responded

by implementing measures to both reduce risk of wildfires and to better respond when they occur.

These include replacing bare overhead wires with covered conductor, burying lines underground, proactive vegetation management, and installing fast-acting fuses to interrupt current faster and reduce the risk of ignitions when there is an electrical fault, such as when a tree falls on a power line during high winds.

Utilities are also adding new technologies to improve grid monitoring, predictive climate modeling, risk assessment, and faster response. AEIC has recently recognized and rewarded member companies for their innovative, industry-leading approaches to wildfire mitigation.

Award-Winning Wildfire Mitigation Initiatives

San Diego Gas & Electric has developed WiNGS, a risk intelligence platform

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used to protect communities from wildfire threats by optimizing operational planning and prioritizing wildfire prevention efforts.

This state-of-the-art system combines visual representations of SDG&E infrastructure with real-time weather data, wildfire modeling, tree-strike analysis, and other critical information. WiNGS models climate scenarios and recommends grid-hardening initiatives, like ungrounding power lines in high-risk areas, to help prevent utility-related wildfires and mitigate the impacts of climate change.

SDG&E has also developed a Climate Intelligence Platform using its Digital Twin visualization software. The platform can generate detailed climate scenarios for SDG&E's service area,

(Cont. on page 41)

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(Cont. from p. 54)

providing access to key insights on how climate change will impact customers and the grid, particularly in San Diego's most vulnerable communities.

Using the Climate Intelligence Platform, SDG&E can also identify what assets are most vulnerable to failure due to climate scenarios. These solutions were designed by multi-disciplinary teams at SDG&E to build resilience through risk-informed actions.

By leveraging technological advancements and climate science, SDG&E created tools that not only enhance its infrastructure capabilities but also deepen its understanding of how the changing climate impacts the communities it serves.

Pacific Gas & Electric has taken resolute action to mitigate extreme wildfire risk in high fire risk areas by launching the Enhanced Powerline Safety Settings program. This program has impacted wildfire prevention by focusing on faster fault interruptions, reducing single-phase operation, and detecting high-impedance faults.

PG&E's Meteorology & Fire Science team played a pivotal role by developing dynamic daily circuit-level EPSS enablement based on forecasts from the

As of 2023, this approach yielded a 68% reduction in ignitions, a 99% reduction in fire size, a 56% reduction in outage time, a 20% reduction in number of customers affected by outages, and significant increases in customer and power line protection.

PG&E Fire Potential Index model, a state-of-the-art machine learning model that predicts the probability of catastrophic fires.

As of 2023, this proactive approach had yielded a sixty-eight percent reduction in ignitions, a ninety-nine percent reduction in fire size, a fifty-six percent reduction in outage time, a twenty percent reduction in the number of customers affected by outages, and significant increases in customer and power line protection.

This is just a snapshot of the recent award-winning wildfire mitigation initiatives from two AEIC member companies. These innovative approaches, as well as many others, are being shared across our organization to the benefit of all member utilities and the industry at large.

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Together, AEIC members are committed to elevating excellence and improving safety throughout all aspects of grid operations. Addressing the increasing threats of wildfire is an important part of that mission. [PDF](#)

