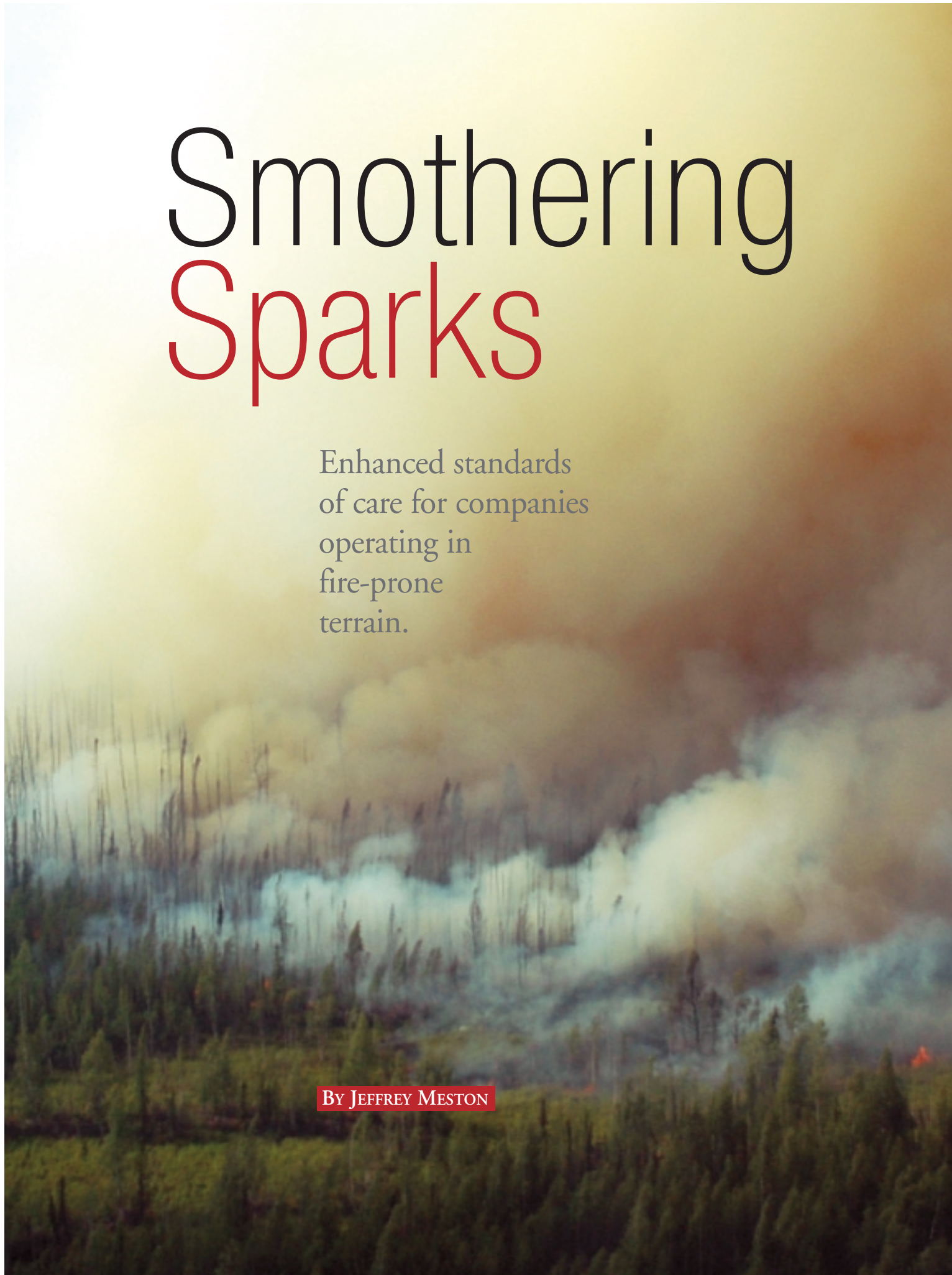


Smothering Sparks

Enhanced standards
of care for companies
operating in
fire-prone
terrain.

By JEFFREY MESTON





any companies, industries, and professions have adopted the setting of standards for the manner in which various procedural, technical, and critical activities are conducted. Those written standards are especially useful when prudence is a necessity for the performance of high-risk activities involving employee safety, financial risk, system integrity, and legal exposure. They're now common in manufacturing, medical, psychological, and real estate industries, as well as all forms of emergency medical response.

It might be time for regulated utilities to add such standards to their already significant library of safety best practices, accepted operating procedures, and standards of conduct, and in general begin including them in their overall culture of compliance. The first priority for such standards involves industry activities that present a high risk of ignition of wildfire in remote and fire-prone territory.

Rising Risks

A standard of care, as defined by the *People's Law Dictionary*, is the action that a prudent or reasonable person would exercise during the performance of duties, such that failure to provide such attention, caution, and watchfulness would constitute negligence from which claims could result. Applying this definition to the business of preventing wildfire ignition and suppression has brought new policies, practices, tools, and techniques. In turn, these innovations have led to major improvements in standardization and professionalism. However, continuing changes on several fronts have contributed to an increase, rather than a decrease, in risks, and the threats now are higher than ever before. Some of these changes include fuel conditions, climatic influence, fire-agency response capabilities, demographics and budgetary considerations.

For example, a historical review of California wildfires indicates that power lines were involved in, or responsible for, four of the 20 largest and most destructive fires since 1932. Careful examination of root cause indicates that high winds, downed power lines, transformer-caused sparking, routine installation and maintenance, and vegetation regularly produce ignition potential, and have been responsible for hundreds of fire starts in recent years. None of this is news to people in the industry.

Additionally, ongoing investment in new energy infrastructure—involving fuel transportation and electricity transmission and distribution—has spawned projects which, by their very nature, are potential generators of new inadvertent ignitions. In fact, routine maintenance, new construction, and

Jeffrey Meston has spent 34 years in the fire service, retiring as the fire chief of the Novato, California Fire District. He serves as a fire service consultant to many governmental organizations and companies including Capstone Fire Management.

weather-driven events, coupled with fuel conditions and shortage of fire resources, all have conspired to create a more dramatic and dangerous risk profile, which has led to a new and more demanding approach to mitigation.

Loss Recovery

While all responsible companies that operate in high-risk terrain and that perform high-risk activities are working hard at risk mitigation, fires do start, and fires do at times rage out of control and cause catastrophic losses. Trauma created by those losses is significant and felt heavily by people and society. Loss of life and property, damage to the environment, disruption of services, and disruption of business patterns all create outrage over agency policies, practices, and equipment availability. Many

Utility companies have become involved as defendants in fire cases. The claims are enormous.

affected parties have sought relief from those losses in the courts, and the courts frequently look toward complicit parties to provide that relief. Energy suppliers and utility companies have become regularly involved as defendants in such cases. And the claims, fines, and settlements have become enormous.

Utilities are involved in many examples of cost-recovery efforts, many resulting in multi-million dollar fines and settlements from across the United States.

■ Lack of adequate clearance near a power line in Butte County, not far from Lake Oroville, was identified as the cause of a fire that consumed over 8,000 acres in timber, brush and grass. The result was the destruction of 47 residences and 15 injuries. The utility company and the tree-trimming company ultimately reimbursed the State of California just over \$10 million.

■ In 1996, a major southern California utility company was billed \$7.9 million for fire suppression costs for the Calabasas fire. This cost was reduced to \$6.55 million in a settlement negotiated just prior to trial in 2003. The California Department of Forestry and Fire Protection (Cal Fire) determined the fire was caused when a eucalyptus branch was bent by the wind into a lightning arrester.

■ In 1990, a major northern California utility company

was billed \$8.2 million by Cal Fire. The Campbell Fire burned over 125,000 acres and destroyed 27 structures in Tehama County. Cal Fire determined the fire was caused by a tree limb that made contact with a 500-kV power line. It was alleged that vegetation hadn't been maintained properly to the 10-foot clearance around the power line as required by law. The parties negotiated a settlement of \$5 million.

■ In Nevada County, a major utility company was the first to face criminal prosecution for violating the 1963 state statute requiring utility companies to maintain power-line clearances up to 10 feet around high-voltage power lines. The failure to maintain clearance around facilities was alleged to cause the 1994 Trauner Fire. Five percent of the company's overhead lines consequently were surveyed in 1995, and 5,093 instances were documented showing tree-line contact in which branches were directly touching or within four feet of the power lines.

■ The settlement of dozens of claims from the destruction of hundreds of homes and thousands of acres in San Diego county from three separate, but closely spaced, fires in 2007 resulted in nearly \$1 billion in costs to a major southern California utility company for purported responsibilities from arcing and downed lines.

■ The Wilderness Ridge Fire in Bastrop County Texas is the focus of a claim against the local utility provider with the assertion that inadequate preparation was a major contributor to the loss of the use of a campground. Plaintiffs are seeking \$8 million in damages.

As evidenced, various states' attorneys general, the federal Department of Justice, and many state and local-level fire agencies have established cost-recovery units. Many citizen groups, environmental protection agencies and watchdog groups regu-

Fire threats now are higher than ever before.

lary file legal actions against all parties that can be shown to be negligent in any way in the event of traumatic loss. Energy suppliers and their contractors frequently are named as co-defendants.

All responsible and vigilant utility industry participants are aware of these evolving conditions. And all responsible companies have invested heavily in training, equipment, and policies that are intended to prevent losses to people and property, including their own. So what more can be done?

Fire-Mitigation Standards

The sources of fire hazard can be grouped in order to begin planning for mitigation. They are:

- Vegetation contact with conductors or lines;
- Exploding hardware, such as transformers or capacitors;
- Floating or wind-blown debris;
- Conductor-to-conductor contact;
- Wooden support poles blown down by high wind;
- Dust or dirt on insulators;
- Foreign object contact with conductors or support structures;
- Construction or maintenance of infrastructure;
- Re-energizing lines after failure or during construction;
- Road and ROW grading;
- Welding operations;
- Lightning;
- Personnel behavior such as smoking on-site; and
- All other spark or heat-creating activity.

Of course, the four basic ingredients needed to cause an ignition, and which should be accounted for in the creation of a good risk-mitigation policy, include: 1) fuel availability, such as grass, brush, trees, and wooden poles; 2) heat, such as ambient temperatures or heat created by work output; 3) oxygen, as found in ambient air; and 4) ignition source, such as sparks, spontaneous combustion, airborne embers, vehicle exhaust, *etc.*

Fire-mitigation and suppression policies, tools, and technologies are all built around the concept of denying one or more of the four basic ingredients. To extinguish a fire, one of those four ingredients must be eliminated. Fires start from many sources and





runaway wildfires and to provide on-site emergency medical services to crew personnel, while performing project work in the field (see *North County Times*, Sept. 23, 2009). As many as eight private fire engines and crews along with a strike team leader and an agency representative were deployed daily under the direction of SDG&E fire coordinators. SDG&E's fire coordinators worked with their district managers as well as local fire officials to determine the scope and operational guidelines of the program. Each morning an incident action plan—consistent with the national-standard incident command system—was published and distributed to SDG&E, the engine companies, and local fire authorities to outline the assignments for the day. Engine crews participated in a morning safety briefing alongside assigned utility crew and monitored vicinity weather, which was reported daily to the SDG&E meteorologist. Engine crews reacted to ignitions, medical emergencies and hazardous materials as needed by the utility crews. SDG&E also paired fire apparatus and utility crews overnight during red flag fire and wind events to ensure maximum safety for the citizens of San Diego County.

This pilot program blended utility crews and private fire crews all seeking to conduct safe work in a fire-prone ecosystem. Numerous interventions by the on-site resources extinguished several fire starts, and provided emergency medical treatment to employees. SDG&E, its fire coordinators, and the San Diego Fire Chief's Association demonstrated how this concept will reduce the risk of runaway wildfires and provide on-site emergency medical support without compromising full and complete protection from the professional agencies that provide those services.

Based on the leadership, creativity, precautionary mindset, and insights of this utility company, which works in fire-prone terrain every day, a new standard of care is emerging for installation, construction and maintenance of high-powered, long-distance, and mission-critical infrastructure within the flammable confines of the United States. The prudence that a reasonable person would exercise in the conduct of normal duties has been redefined in such a way that the likelihood of catastrophic and traumatic loss of life and property is reduced substantially. ■

under many conditions, but the part that power lines, pipelines, and transportation and communication infrastructure play are all very well documented.

New Standards of Care

In 2009, San Diego Gas and Electric (SDG&E) may have redefined the standard of care for wildfires for the utility industry by starting a pilot program for on-site wildfire protection.

SDG&E implemented a program to determine whether innovative actions could be taken that would reduce the risk of