

WILDFIRE MITIGATION AND GRID RESILIENCY

ENSURING SAFETY AND MAINTAINING RELIABILITY

Southern California Edison's employees work vigilantly year-round to strengthen our system and protect against a variety of natural and man-made threats.

Roughly a quarter of SCE's service territory, covering about 9 million acres, is considered high fire risk. We have long taken substantial steps to reduce the risk of wildfires in our territory and continue to look for ways to improve our operational practices and enhance our infrastructure.

The unprecedented scale of wildfires, like those that hit both Northern and Southern California last year, make it increasingly clear that California needs to take comprehensive steps to strengthen its ability to prevent and suppress wildfires. SCE supports the call to action by Gov. Brown and legislative leaders to address this "new normal" environment and we are committed to being part of the broader solution to this statewide issue.

Prior to the 2017 fires, SCE was already employing robust design and construction standards, vegetation management activities, and operational practices to mitigate wildfire risk, and had established collaborative partnerships with fire agencies to maintain fire safety. SCE is evaluating a variety of tools and technologies to advance fire safety even further throughout our system. In some instances, deployment will take time and may require the approval of SCE's regulators, but SCE remains committed to protecting public safety and maintaining the reliability of our system, which serves approximately 15 million people.

OPERATIONAL PRACTICES

SCE has operational practices in place to reduce fire risk during extreme weather conditions. When the National Weather Service declares Red Flag Warnings, the company restricts certain types of work and does not automatically re-energize distribution power lines in high fire risk areas after a circuit interruption. Most electric circuit interruptions, or "faults," are momentary, caused, for example, by a bird or metallic balloon making contact with power lines. Under normal conditions, the grid automatically tests the circuit and, if the fault condition no longer exists, the circuit is quickly re-energized. During Red Flag conditions, affected circuits are not automatically re-energized and SCE crews physically inspect the lines before they are re-energized.

Another operational practice that can reduce fire risk is a pre-emptive power shutoff, where a utility shuts down power pre-emptively in limited, high fire risk areas only during the most extreme weather conditions. Because extended power outages create additional risks for essential services and have significant impacts on utility customers, they are sparingly used. In light of increasing wildfire risk, however, SCE is evaluating the more frequent use of this measure during extreme conditions. We are also strengthening our collaboration and partnerships with communities across our service territory to increase awareness of the possibility of a pre-emptive power shutoff and to explore options for enhancing community resilience during major events.

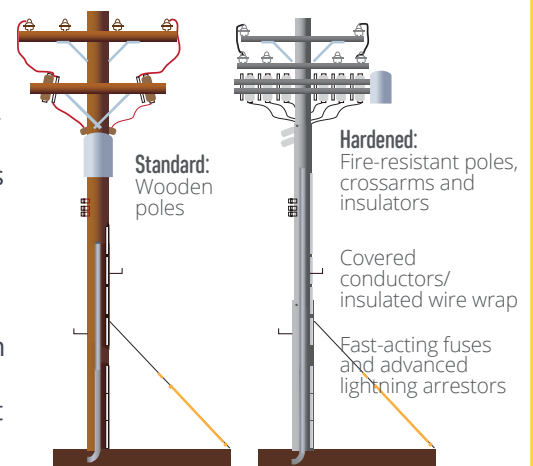


SYSTEM HARDENING

SCE's system serves 50,000 square miles of Southern, Central and Coastal California and includes more than 1.4 million power poles, with approximately a quarter located in high fire risk areas. In 2013, SCE completed a system-wide meteorological study and used the updated wind speed data to implement new pole designs and construction standards appropriate for expected conditions. SCE then launched a comprehensive pole replacement program in 2014, concentrating first on poles located in areas that posed both high wind and high fire risks, and assessing those poles against the updated wind standards. SCE's pole replacement programs replace up to 30,000 poles annually across SCE's service territory, resulting in a stronger, more resilient system overall. Since 2014 through the beginning of this year, SCE replaced 39,000 poles in high fire risk areas alone in connection with these programs.

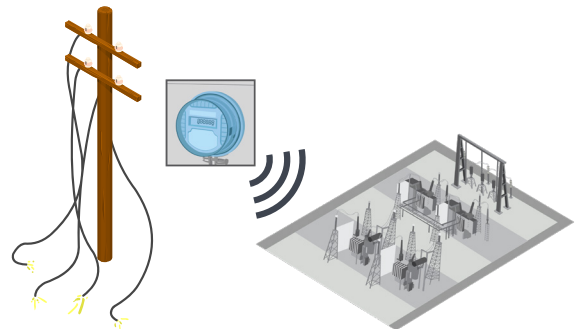
Besides these pole replacement programs, SCE is hardening the design of our infrastructure in other ways. We are increasing the use of fire-resistant poles, composite cross-arms, and covered conductor in select high fire risk areas to enhance the resiliency of our infrastructure and reduce the risk of ignitions, such as wind-borne debris that is blown into our overhead lines.

We will continue to evaluate opportunities, where the geology and terrain permit and other overhead mitigations are not an appropriate solution, to relocate lines underground in high fire risk areas.



ENGINEERING ADVANCES

SCE is evaluating design approaches and next-generation engineering technology to further increase public safety. We are deploying equipment and device configurations in our infrastructure such as fast-acting fuses, and other devices that can react more quickly to reduce fire risk. We are also using infrared scanning technology that could potentially identify equipment before it fails and developing technology that leverages smart meter data and advanced analytics to quickly detect downed, energized wires. As these and other promising technologies prove themselves, we will continue to incorporate them into our system.



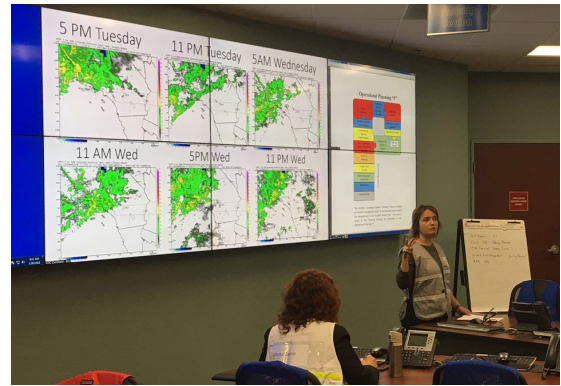
VEGETATION MANAGEMENT

Trees, shrubs and other vegetation can cause safety hazards and power outages if they grow near or into power lines. We have increased the frequency of vegetation patrols in the most severe high fire risk areas to identify potential hazards. SCE inspects approximately 900,000 trees annually and trims nearly 690,000 of them per year. The company also frequently monitors trees outside SCE's designated trimming zones that could potentially fall into lines to determine whether they are dead, dying, diseased or hazardous. On average, about 40,000 dead or dying trees affected by drier-than-normal conditions are removed each year and this number has increased in recent years. SCE is also evaluating opportunities to perform more expansive trimming and removal of trees to further reduce the fire risks associated with trees falling into our lines.

SCE is expanding the application of LiDAR technology, an advanced laser surveying method, to enhance vegetation management in remote areas of our service territory. This technology allows us to more precisely and efficiently assess vegetation near power lines in difficult to access areas, further reducing fire risk. We are also expanding the use of LiDAR to additional high fire risk areas in our territory, which should enable us to more closely monitor hundreds of square miles of rugged high fire risk areas.

SITUATIONAL AWARENESS

In addition to our extensive existing practices, which include a 24-hour situational awareness center, and round-the-clock incident command teams when conditions merit, SCE is enhancing our meteorological monitoring and forecasting capabilities. We are installing additional weather stations to provide localized data that will enable more detailed wildfire-related weather forecasting and high-definition cameras to help fire agencies more quickly assess and respond to reported fires. These tools are expected to strengthen our current prevention strategies and increase coordination with first responders and affected communities when a wildfire starts.



PARTNERSHIPS

SCE actively participates in wildfire response planning with fire agencies throughout our service territory. These partnerships improve service reliability during critical incidents, support public and firefighter safety, and foster relationships that improve response times. These efforts are led by SCE's fire management team, which serves as our single point of contact for all fire agencies in the service territory.

During wildfire incidents, members of this team are typically on scene working closely with fire agencies to advise them of any issues related to our electrical system. Members of SCE's fire management team serve on the board of directors of the California Fire Safe Council and on the board of the Southern California Association of Foresters and Fire Wardens, which have representatives from every county, state and federal fire agency in our service territory.



Given the complexity of the extraordinary environmental challenges facing California, wildfire prevention and mitigation programs and activities will require broader statewide partnerships in order to maximize effectiveness. SCE will continue to work with state and local governments, regulatory agencies, first responders and fire agencies, as well as the communities where our customers live, work and operate businesses to ensure that our efforts are fully coordinated and to protect California's critical energy infrastructure.