

SOUTHERN CALIFORNIA EDISON

Wildfire Mitigation, Safety & Grid Resiliency

Malibu Public Safety Commission

August 1, 2018



Energy for What's Ahead®

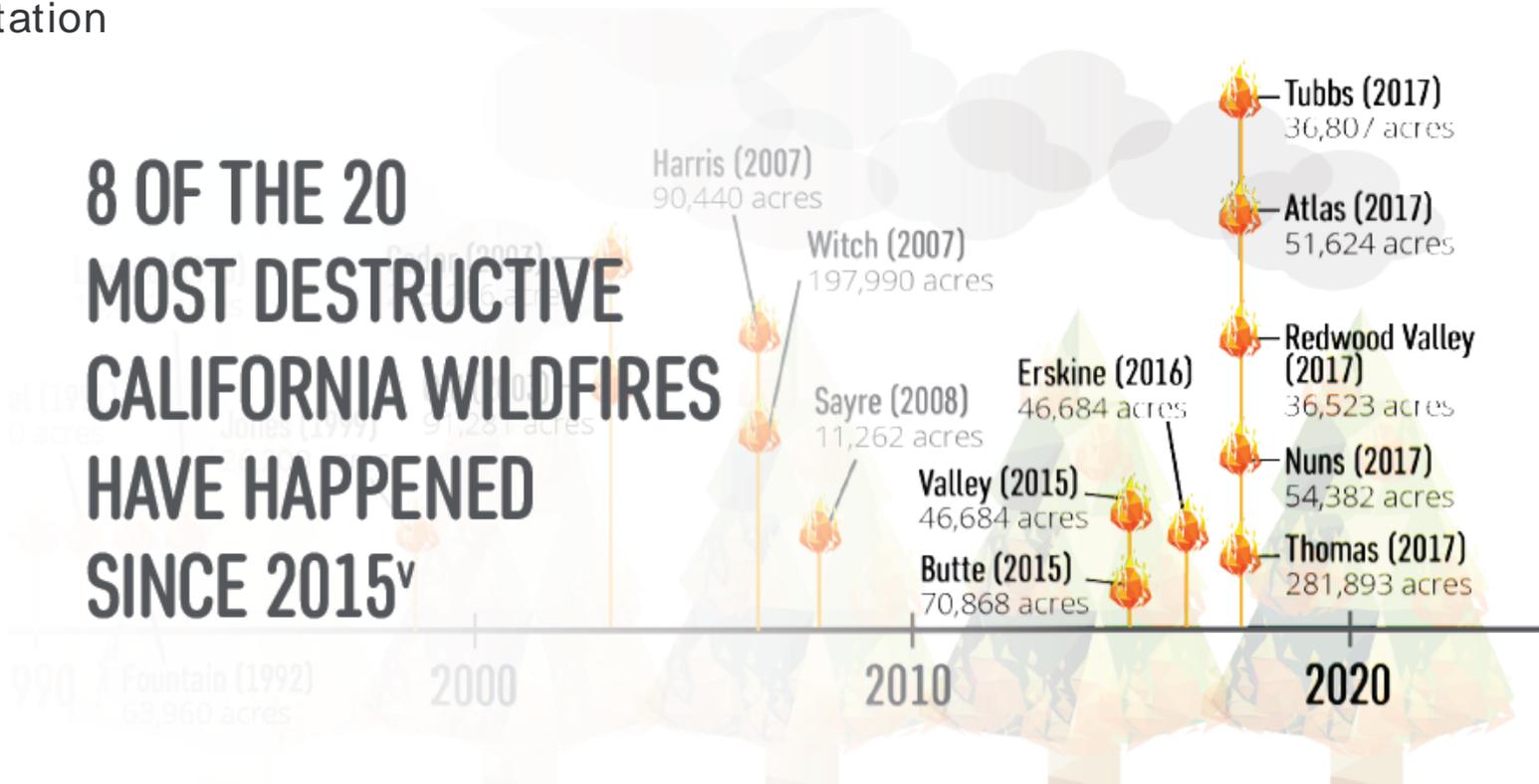


CALIFORNIA'S WILDFIRE RISK

Year-Round Fire Season: Changes to California's climate mean that the traditional notion of fire "season" no longer exists

Hazardous fuel is building up: 9M acres of land contain ready-to-burn kindling from nearly 129M trees that have been killed or weakened by drought and bark beetle infestation

**8 OF THE 20
MOST DESTRUCTIVE
CALIFORNIA WILDFIRES
HAVE HAPPENED
SINCE 2015^v**



WORK PRACTICES FOR A SAFE & RELIABLE GRID

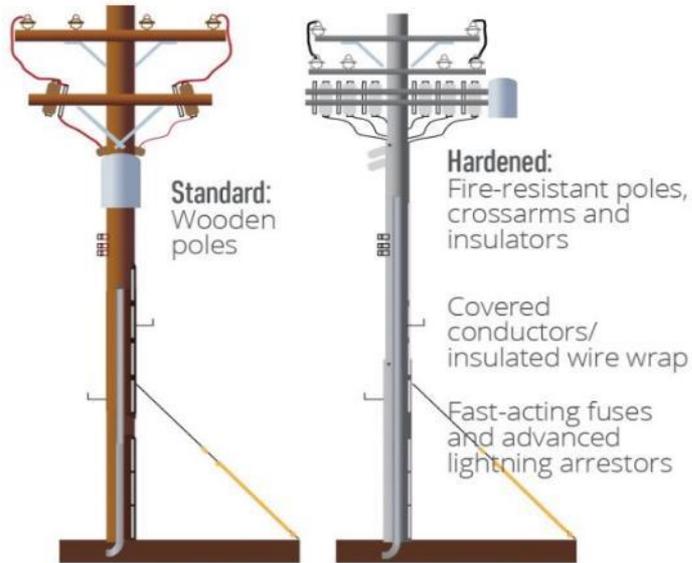
Southern California Edison works vigilantly year-round to strengthen our system and protect against a variety of natural and man-made threats



SCE has long taken substantial steps to reduce wildfire risk and continuously seek ways to enhance our efforts through:

- Operational practices
- System hardening
- Engineering advances
- Vegetation management
- Situational awareness

Prevention > Mitigation > System Hardening



Fault Tamer



X-Limiter CLF



VEGETATION MANAGEMENT

Volume of work continues to grow

- Inspect: 900,000 a year
- Trim: 690,000 per year
- Volume/magnitude of tree trimming and removal accelerating due to more frequent extreme weather, the impact of drought and bark beetle
- Expanded use of LiDAR (light detection and ranging)



FIRE AND SEVERE WEATHER MONITORING



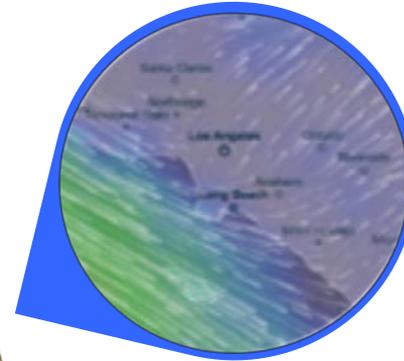
Weather Stations

- Collects hi-resolution local weather data
- Enables more accurate forecasting



Situational Awareness Center

- 24/7 weather and situational awareness monitoring
- Co-located with SCE's Emergency Operations Center and Watch Office
- SCE meteorologists on-site



High-Resolution Weather Data Visualization

- Visualization of weather conditions at circuit level
- Alerts when conditions reach thresholds



Fire Monitoring Cameras

- High-Definition
- Remote-controlled pan-tilt zoom

SCE WILDFIRE OUTREACH ACTIVITIES

SCE is committed to educating customers and stakeholders about its Grid Resiliency and Public Safety Activities

- Direct Mail to customers in High Fire Risk Areas
- Dedicated wildfire website www.sce.com/wildfire
- Community Meetings
- Meetings with local government officials
- City Council presentations
- Workshops with local government emergency management officials
- Traditional media

PRACTICE OF LAST RESORT: PUBLIC SAFETY POWER SHUTOFF

In alignment with its operational safety practices, SCE may proactively shut off power in high fire risk areas when extreme fire conditions present a clear and imminent danger to public safety

- Operational practice of last resort that may reduce fire risk in limited, high fire risk areas
- SCE is committed to service reliability: de-energizing customers is not something we take lightly and is only sparingly used in the most extreme conditions.
- In light of increased wildfire risk and public safety, SCE is evaluating more frequent use of this measure
- SCE will make every effort to notify local governments and customers ahead of time – especially critical care and medical baseline customers
- Power restoration begins after local conditions have improved and safety checks have been performed

PUBLIC SAFETY POWER SHUTOFF - CONSIDERATIONS

We consider many factors before making the decision to turn power off. Factors include but are not limited to, the following:

- Real time information from trained personnel positioned locally in high fire risk areas
 - Input from SCE Fire Management experts
- Information from technologies like weather stations and high resolution weather data
- Input from local and state fire authorities and Emergency Management Personnel
 - Awareness of mandatory or voluntary evacuation orders in place
 - Expected impact of service interruption on essential services
 - Location of evacuation centers
 - Other emergency operations



PUBLIC SAFETY POWERSHUTOFF

Last resort public safety measure to mitigate wildfire risk

4-7 DAYS
AHEAD



- When forecasts indicate extreme weather, SCE will begin predictive modeling to assess potential impact

3 DAYS
AHEAD



- SCE monitors fire weather watch alerts from the National Weather Service (NWS) and continues to refine predictive models

2 DAYS
AHEAD



- Extreme fire weather conditions forecasted and NWS Red Flag Warning issued
- Coordinate with local gov't and agencies (e.g. emergency responders)
- Initiate customer notifications on possible power shutoff

1 DAY
AHEAD



- Extreme fire weather conditions imminent; continued modeling and more accurate forecasts determine affected areas
- Continue to coordinate and communicate with local government, agencies and customers of possible PSPS

POWER
SHUTOFF



- Extreme fire weather and dangerous conditions validated by field resources
- Notify local government, agencies and customers of power shutoff

POWER
RESTORATION



- Extreme fire weather subsides to safe levels and conditions validated by field resources
- Inspections and patrols of equipment begin, then power is restored to affected communities
- Agencies and customers notified of power restoration

PLANNING AND MONITORING

OUTAGE

Note: Actual onset of weather conditions and other circumstances beyond our control may impact coordination and notification efforts

IMPLEMENTING PSPS NOTIFICATION PROCESS

Recognizing that our local governments may need to implement their own emergency plans, SCE will make every attempt to provide advance notice to our agency partners.

- SCE intends to activate an Incident Management Team (IMT) prior to a PSPS event
 - The IMT will be monitoring the situation and will be available to respond to city and county emergency personnel including requests to restore service in response to emergency situation
- **Notifications:**
 - Notice to our local government/agency partners two hours prior to executing customer notifications which are expected to be 48 and 24 hours prior to executing a PSPS.
 - Will be sent to contacts provided by the agency using both email and text and will include
 - Lists of impacted circuits with maps for all impacted circuits in the county
 - 24-hour SCE contact information for the agency to use during the incident

