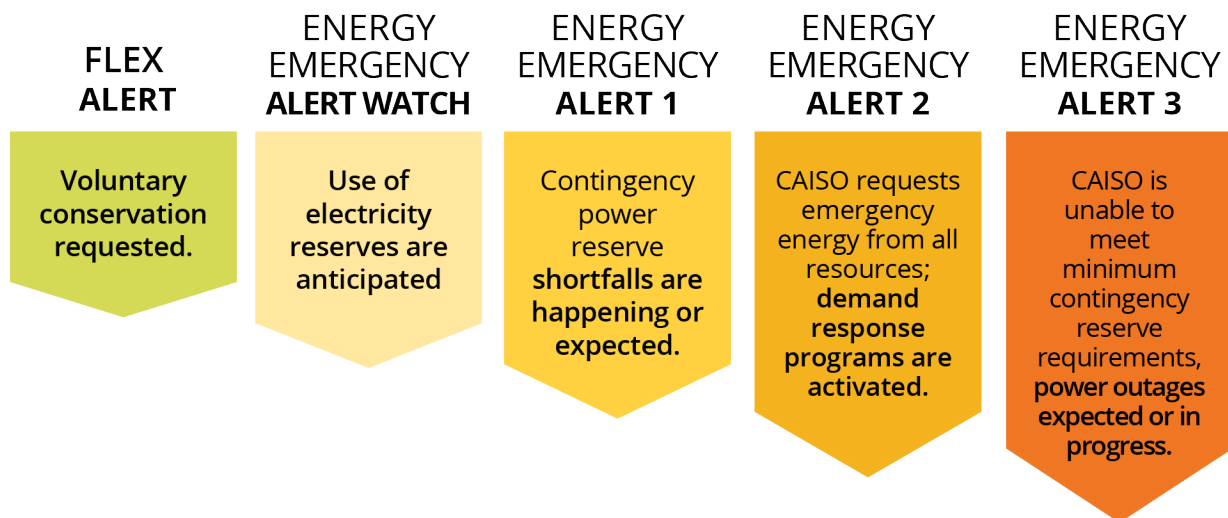# CAISO ROTATING POWER OUTAGES

The California Independent System Operator (CAISO) manages the California high-voltage electric grid and the energy market for 80% of the state. It is responsible for coordinating and ensuring the supply of power across the state used by the state's three investor-owned utilities (IOUs), including Southern California Edison. Typically, by managing contracts with power producers both in and outside of California, there is enough energy to meet California's needs. Using weather reporting and modeling, CAISO provides look-ahead forecasts that typically allow it to predict and cover any anticipated peak loads.

While the amount of energy storage across the state is growing, electricity generally must be supplied on demand. The time from when power is generated to when it hits air conditioners and light switches is almost instantaneous. A failure to supply electricity when the system demands it could lead to major power outages, which can disrupt communities, businesses and lives; endanger public safety; and damage electrical infrastructure, slowing restoration. CAISO will take numerous preventative steps, with rotating power outages being the last, in order to avoid a widespread blackout.

THE STAGES OF A CAISO EMERGENCY

When CAISO anticipates that demand is going to outpace available supply, it will call a statewide emergency. Early steps include alerting utilities, triggering demand response programs that require participating customers to reduce their energy usage and calling on business customers to provide backup generation (see diagram below). CAISO can also ask customers to conserve energy by calling a statewide Flex Alert. If these steps do not reduce enough demand or add enough additional sources of generation, CAISO may declare an Energy Emergency Alert 3 order to the utilities to turn off service immediately through rotating power outages. Given the immediacy of power generation, the time between the three stages of Energy Emergency Alerts can be very short. After an Energy Emergency Alert 3 is called, SCE may have as few as 10 minutes before starting rotating power outages. Rotating power outages typically last one hour.

CAISO SYSTEM ENERGY EMERGENCY ALERTS

FLEX ALERT	ENERGY EMERGENCY ALERT WATCH	ENERGY EMERGENCY ALERT 1	ENERGY EMERGENCY ALERT 2	ENERGY EMERGENCY ALERT 3
Voluntary conservation requested.	Use of electricity reserves are anticipated	Contingency power reserve shortfalls are happening or expected.	CAISO requests emergency energy from all resources; demand response programs are activated.	CAISO is unable to meet minimum contingency reserve requirements, power outages expected or in progress.

For more information, visit: caiso.com/Documents/Emergency-Notifications-Fact-Sheet.pdf

HOW CAISO ROTATING OUTAGES ARE MANAGED

Every customer is in a rotating power outage group and has a rotating power outage group number on their bill. Each group includes 20,000 to 30,000 customers and represents 100 megawatts of energy demand. The groups are geographically dispersed across SCE's service area so that no one community loses all its power in the event of a CAISO rotating power outage. The groups are updated and reviewed annually to ensure that they continue to have the right number of megawatts of power and that circuits supplying public safety providers or other emergency operations are removed. Several groups could be called at a time, depending on the amount of the energy shortfall. If the emergency continues longer than one hour, new groups of customers are shut down. Once a group has participated in a CAISO rotating power outage, it is moved to the bottom of the outage list and will not be called again until the entire list has been cycled through. In the last 20 years, no group has participated in more than one power outage during a single CAISO emergency.

EXEMPT AND NONEXEMPT CUSTOMERS

- Certain business customers who provide essential public health, safety and security services (essential use customers) are typically exempt from rotating power outages. The list of categories of essential use customers can be found at sce.com/outage-center/outage-information/rotating-outages.
- Critical care customers (those who cannot be without electric service for more than two hours) are not excluded from rotating power outages. These customers are typically prepared for potential outages and other emergencies, including having backup generators. They are also notified in advance of any outage regardless of the amount of lead time that we have for the outage.
- Community Choice Aggregators (CCAs) are also subject to rotating outages since their electricity is supplied through the SCE electric grid.

HOW TO FIND A CAISO ROTATING OUTAGE GROUP NUMBER

Customers can find their CAISO rotating power outage group number by:

- Logging in to My Account on sce.com and following the step-by-step guide
- Locating the number printed on the front of each month's printed bill
- Calling SCE Customer Service at 1-800-611-1911
- Searching neighborhood rotating outage maps at sce.com/outage-center/outage-information/rotating-outages

Customers' CAISO rotating power outage group numbers are treated as confidential information to protect privacy and safety.

PREVENTING FUTURE CAISO ROTATING OUTAGES

With climate change, more intense and longer heat waves are expected in the coming decades. SCE and the state have noted the need for more generation To strengthen grid reliability, SCE has been actively working to bring more emission-free energy storage online. SCE currently has more than 1,382 MW of energy storage online and we have procured or have under construction another 1,608 MW. This energy storage will provide additional reliability to the grid, especially during the critical hours of 4-9 p.m.

For more information on CAISO rotating outages, visit caiso.com.
For more information on SCE's response to rotating outages, visit sce.com/outage-center/outage-information/rotating-outages