

## A 24/7 monitoring system and advanced IT technology secure the power distribution system that covers the Kansai area.

### Central Load Dispatching Center works to meet fluctuating demand.

Demand for electricity fluctuates by the second. Our Central Load Dispatching Center monitors demand 24 hours a day, 365 days a year, and issues instructions to our nuclear, thermal and hydroelectric power plants. The Center works with local dispatch centers and control centers across the Kansai to adjust voltage and frequency as necessary. Kansai EP also operates an intricate network of power transmission lines throughout the region, monitoring such things as repair activities, equipment failures and lightning, and selecting the most appropriate transmission routes accordingly. These efforts are all part of ensuring that our customers enjoy a stable supply of high-quality electricity.



●Central Load Dispatching Center



●Power transmission lines

### High-voltage power transmission network carries bulk power.

Our plants generate electricity at the voltage from several thousand to 20,000 volts. To minimize power loss during transmission, however, the voltage is actually boosted to higher voltage such as 275,000 and 500,000 volts before it's sent out. The electricity is transmitted from our plants to our customers through power lines supported by large steel towers built between mountains. Those transmission lines extend beyond the Kansai, connecting to countrywide networks that span the country from Hokkaido to Kyushu. This vast network of power lines helps ensure reliable delivery of electricity to homes and business.

### Before distribution, substations lower the voltage to meet customer needs.



●Primary substation

Power generated at our plants is transmitted over lines to primary substations, which lower the voltage to 154,000 volts or 77,000 volts. For customers who need large amounts of electricity, such as railway companies and large factories, electricity is delivered at this voltage level. Electricity for other customers is sent to secondary substations, which further lower the voltage to 77,000 volts or 22,000 volts. This process of reducing the voltage in stages allows the electricity to be transported more efficiently, minimizing power loss due to transmission over long distances.

### Electricity to your home... After a long journey, electricity undergoes final distribution.

Electricity of which the voltage is reduced at secondary substations to 77,000 volts or 22,000 volts is sent to distribution substations. There the voltage is reduced further to 6,600 volts and fed to local distribution lines. Electricity is delivered in this condition to high-rise buildings and medium-size factories. Electricity for home users is sent to electrical poles, where transformers further reduce the voltage to 100 or 200 volts before it reaches our homes.



●Distribution line maintenance

Electricity follows a long, complicated journey from a power plant to your home. But the journey is over in a blink. Because electricity travels at around 300,000 km per second, customers use the electricity a mere instant after it's generated at one of our plants.



●Electrical pole and transformer