Efforts Based on Our CSR Action Principles

1. Safe, Stable Delivery of Products and Services

Our mission and responsibility as a lifelong service provider

To fulfill the most important mission of the Kansai Electric Power Group—providing safety and stability—the entire Group is working to place safety first, and to make the provision of electric power as stable as possible.

Facilities configuration based on S+3E

To carry out our mission of providing customers with high-quality, economical electricity on a stable basis, Kansai Electric Power has adopted a philosophy of work that involves providing safe and stable electricity supply while ensuring the long-term energy security as well as maintaining the balance of economy and environmental protection. The adoption of this approach to consider all aspects of our facilities configuration to achieve a favorably balanced combination of nuclear, thermal, hydroelectric, and renewable energy generation.

Changes in Power Source Composition

<table>
<thead>
<tr>
<th>Power Source</th>
<th>Year</th>
<th>Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear power</td>
<td>1960</td>
<td>3,000</td>
</tr>
<tr>
<td>Thermal power</td>
<td>1963</td>
<td>1,000</td>
</tr>
<tr>
<td>Hydroelectric power</td>
<td>1967</td>
<td>1,500</td>
</tr>
<tr>
<td>Renewable energy</td>
<td>1974</td>
<td>200</td>
</tr>
</tbody>
</table>

Changes in Power Source Composition

To provide high-quality electric power

To ensure safe, stable supplies of electric power, Kansai Electric Power works to operate facilities that can create a reliable link between power plants and consumers and enable an optimal configuration of facilities. We are also engaged in rigorous efforts to prevent accident recurrence, as a result of which Kansai Electric Power achieved one of the world’s highest power supply quality levels in FY 2012. The Company is continuing to develop and install new technologies and construction methods to ensure that accidents are prevented, and to enable swift recovery in the event an accident does occur. Equally important, systematic renovation is in progress for aging facilities that were constructed during Japan’s post-war period of rapid economic growth. In response to public demand, we are striving to create a flawless power supply system, thereby contributing to the continuing development of the Kansai region.

Annual Duration of Power Outage Per Household

<table>
<thead>
<tr>
<th>Power outage (hours)</th>
<th>Number of households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Due to construction work</td>
<td>0.5</td>
</tr>
<tr>
<td>Due to maintenance work</td>
<td>0.2</td>
</tr>
<tr>
<td>Due to natural disasters</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Configuring work schedules to meet tight supply and demand conditions

Although the Ohi Nuclear Power Station resumed operation in fiscal 2012, we continue to face tight supply and demand conditions. In response, we reviewed our maintenance and inspection work on thermal and other power plants including acceleration of work or postponing where practical, and took other steps on a unified Group basis to ensure stable power supplies. Nevertheless, such efforts as repair work on transmission lines and transformers did not progress as originally outlined, and in some cases, we were forced to revise our plans. In such cases, the load dispatching center shared information closely with related locations, and took the actions required. In the event of a loss in supplied power quality due to unexpected circumstances, the Group worked to swiftly restore the electric power supply and demand. Moreover, we worked to adjust repair schedules to continue safe working conditions. Going forward, we will continue to maintain close collaboration with subcontractors, load dispatching centers, and other facilities to provide stable, powerful energy while enhancing the efficiency of our repair work.

Demand-related efforts to encourage stable power supply

Kansai Electric Power strives to secure adequate power generation capacity and to improve the stability of electric power supply for the prevention of large-scale power interruptions, we work to project demand conditions in advance and coordinate closely with national and local governments to secure the understanding of customers and society with respect to demand conditions, and call on them for cooperation in conserving electricity.

We also work to improve compliance with social custom and improve corporate culture in handling customer requests for the suspension of power due to disasters. We have established new contract schemes to enable supply and demand adjustment, and work with BEMS aggregators whose business is to adjust loads and reduce peak demand. In addition, we encourage our residential customers to take up use of our net-based “Hapi O-Minute” service (sees pages 32 and 38), which make use visible, and offer energy-saving consultations in response to heightened awareness regarding the exigency of conserving energy and the wide variety of customer needs. With the continued cooperation of our customers and society, we are working toward stable supply of electricity.

Tireless efforts to create a safety culture

We believe that safety is the core of all our business activities and the basis upon which the public places their trust in us. It is essential that the Group continue to improve the quality of all our business activities and to our future growth. Kansai Electric Power will therefore continue working tirelessly to ensure that safety assurance is given the highest priority in our business activities so that we can continue achieving results in this area. Through daily interactive communication with all associated companies that sustain the operation of the Kansai Electric Power Group, including its partner companies, we promote the sharing of experiences and technical improvements. We are thus working to create an unbreakable culture of safety— the Kansai Electric Power Safety Culture Zone—at even higher levels throughout the Group.

Training the personnel who support safe and stable supply functions

To enable us to provide products and services in a safe, reliable manner, Kansai Electric Power recruits new staff yearly and implements systematic education with the aim of nurturing specialist personnel. We are also promoting a range of initiatives to ensure that technologies and skills are maintained and passed on. These include our Specialist Technician System* and a system for promoting the technological capabilities of individual employees. In doing so we hope to ensure that the technologies and skills our personnel have built up thus far will be passed on Group-wide and further improved upon.

Strengthening facilities for disaster resistance

Thanks to lessons from past natural disasters, electric power facilities are today designed to sustain minimal damage even in the event of earthquakes, tsunamis, typhoons, or other natural dis-asters. Also, the power distribution system covers the Kansai region like a fine mesh net. In the unlikely event of damage occurring to this network, power can be supplied quickly from alternative connecting routes.

Efforts to enable rapid recovery

In the event that power facilities are likely to be damaged as a result of a disaster, or upon actually detecting such damage, a disaster response structure, as described below, will immediately be established to deal with the situation. Through this structure, the Company gathers and distributes information both from within the Group and from other sources, determines recovery policy, and proceeds with recovery activities. We have also enhanced our structures for rapid response, through measures such as the secured equipment of means and transportation of communication, as well as preparation of other necessary supplies.

Verifying response plans through training and further enhancement of disaster readiness

The Japanese government has released a study of the possible effects of a major Natural Earthquake in a major subduct- ing zone on the ocean floor southeast of the Kansai region. In light of this study, we consider a major Nankai Trough earth- quake to be the greatest natural disaster risk we face, and we are carrying out simulated, role-play type emergency training aimed at honing our capacity to respond to widespread quake damage at our offices and power generation facilities. Through this training, we are enhancing our response skills as well as verifying the disaster response measures we have implemented so far. At the same time, the training is highlighting the best approaches for information sharing, ensuring employee safety, and other processes. We are considering how best to respond to these challenges as we strengthen our ability to cope with major disasters.

Collaboration with entities involved

As part of our efforts toward speedy disaster recovery, we work closely with local governments by, for example, participating in disaster response exercises, in addition to providing information related to the recovery status of Company facilities. This allows local governments to facilitate our efforts for the earliest possible restoration of power supply by prioritizing repair of roads that are essential to our recovery work.

Furthermore, we are contributing to regional disaster recovery by loaning portable generators to local governments in case road blockage threatens to prolong the interruption of power in the wake of a disaster. We are also ready to provide support in delivering vital life supplies.

In addition, we are actively participating in activities including reviews of regional government disaster response plans, and pro- moting disaster response measures in coordination with local communities. We consider it important that, when responding to a major Nankai Trough earthquake or other wide-area disaster, the accumulation of disaster response measures is better achieved by government, infrastructure providers, regional communities, and individuals working in close collaboration, rather than by a single entity working alone.

Preparing for a major disaster

Based on our mission of the stable provision of electric power, Kansai Electric Power is engaged in initiatives to strengthen facilities to withstand disaster and establish a disaster control system to enable rapid recovery as basic measures for dealing with natural disasters such as earthquakes, tsunamis, heavy snow, heavy rain, and typhoons.

Drawing on the lessons of the Great East Japan Earthquake, as well as a study issued by the Japanese government in March 2013 concerning potential damage from a major Nankai Trough earthquake, we are promoting measures to deal with larger than predicted earthquake effects, and are working on measures to allow visible feedback on earthquake levels and offering energy-saving consultations in response to heightened awareness regarding the exigency of conserving energy and the wide variety of customer needs.

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Nuclear power is widely distributed, centered on countries with stable politics and large-scale development. As such, it helps to avoid dependence on oil imports, which have oscillated between 80% and 85% over the past 30 years. Natural gas (LNG) exports, are unstable. As such, overdependence on imported energy is a risk for countries that rely on oil supplies.

When nuclear power is excluded, Japan’s energy self-sufficiency rate is only around 40%. For the remainder of its needs, Japan must rely on imported energy. However, political conditions in the Middle East, from which Japan imports over 80% of its crude oil needs, and which also accounts for a third of the world’s liquid natural gas (LNG) exports, are unstable. As such, overdependence on these sources of energy entails not only price risk, but also stable supply risk. In contrast, the uranium used in nuclear power plants is widely distributed throughout the world, and many of the nations where it is produced are politically stable, giving uranium excellent supply stability. It is therefore necessary to maintain diversified resource procurement and an optimal mix of electric power generation methods to stabilize future energy supplies.

### Nuclear power generation

Nuclear power generation uses the heat energy of uranium fission to create steam. The steam drives turbines that generate electricity.

#### Initiatives prioritizing safety at nuclear power plants

**Principal energy sources**

Each energy resource used to generate electric power has its own unique characteristics.

- **Nuclear power**
  - Uranium (uranium) is widely distributed, centered on countries with stable politics, and can be recycled. It is a source of global warming, but less expensive than oil.
- **Hydroelectric power**
  - Renewable, closest domestic energy source, low remaining potential, construction locations and large-scale development are constrained.
- **Solar power**
  - Renewable, closest domestic energy source, subject to weather, affected by cloudy, large-scale development is required.
- **Wind power**
  - Renewable, closest domestic energy source, unlimited, affected by weather

**Reference:** "Electricity Review Japan 2013," Federation of Electric Power Companies of Japan, other sources.

**Ensuring stable energy supplies**

#### Nuclear Fuel Cycle

Fuel used in nuclear power plants is not completely consumed during the power generating process. Uranium and plutonium remain in the fuel and rods, and these elements can be used further as fuel. The process of extracting these elements, processing them into nuclear reactor fuel, and using them for further power generation is known as the nuclear fuel cycle. In particular, MOX fuel, which is made with plutonium extracted during the fuel cycle, can be used in conventional light water reactors.

In January 2011, Kansai Electric Power began using MOX fuel at Takahama Nuclear Power Station Unit 3. To achieve a more flexible nuclear fuel cycle operation, we are promoting the establishment of an interim storage facility where spent fuel can be held for a certain period of time before reprocessing.

**New Regulatory Requirements for Nuclear Power Plants**

- **Nuclear Fuel Cycle**
- **Enhancing nuclear power safety and reliability**
- **Ensuring nuclear power plant safety**
- **New Regulatory Requirements for Nuclear Power Plants**

**Nuclear Power Plants**

Kansai Electric Power is carrying out a variety of measures to minimize risk and ensure sufficient safety at its nuclear power plants.

**Reference:** "Graphical Flip-chart of Nuclear and Energy Related Topics 2013," Federation of Electric Power Companies of Japan, other sources.

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**Nuclear power generation**

The results of this environmental radiation monitoring, and of monitoring by other organizations, are regularly compiled and released to the public after verification by specialists.

**Environmental sampling (land-based)**

- Soil, river water, and indicator plants are regularly sampled and tested for levels of radioactive substances contained.

**Radiation control**

Radiation and radioactive substances are stringently controlled at nuclear power plants. To monitor the effects of radioactive substances on the surrounding environment, multiple monitoring stations and monitoring posts are located around each plant. Atmospheric radiation levels are monitored around the clock, and this data can be accessed on our website and elsewhere. In addition, Kansai Electric Power regularly samples soil, river water and seawater, indicator plants (e.g. pine leaves), and marine products in the vicinity of its nuclear power plants and tests for the levels of radioactive substances contained to monitor impact on the environment.

**Monitoring vehicle**

- Towed in a vehicle testing radiological and dose measurements in the environment.

**Monitoring post**

- Continuously monitors environmental radiation levels around the power plant, including levels of radioactive substances in visiting vehicles.

**Environmental Monitoring**

We are also studying closely the reports and other materials relating to the accident at TEPCO’s Fukushima Daiichi Nuclear Power Station. Adopting lessons extracted from the reports into the viewpoints of the assessment, we are thus enhancing the structure of our safety culture assessment system.

We will undertake to carry out continuous improvements to foster an even stronger culture of safety.

**Summary of Activities to Foster a Culture of Safety**

- **Assessment of awareness and actions of individuals and organizations**
  - Plant safety
  - Workers’ safety
  - Public trust

- **Assessment of safety related performance**
  - Plant safety (number of accidents)
  - Workload (injuries, unreported radiation exposure)
  - Public trust (number of compliance violations)

- **External opinion**
  - Opinions from the public and the Nuclear Safety Verification Committee

- **Communication**
  - 14 assessment about standards developed in three departments
  - Learn-to-organization

- **Safety Culture Assessment**
  - Plant safety
  - Workers’ safety
  - Public trust

We have mounted a full-scale effort to ensure that we undertake our business operations without forgetting the lessons of the Mihamada Unit 3 accident, with safety as our highest priority. Since 2008, we have introduced a safety culture assessment system, through which the conditions of our nuclear power safety culture can be assessed from a variety of viewpoints, and priority measures can be extracted from those assessments.

Safety culture assessments are carried out by each department within the Nuclear Power Division and by each power plant. The results of these assessments are compiled to arrive at an overall assessment. The 2012 assessment identified focal tasks such as “expansion and strengthening of employee training to maintain technical capabilities” and “enhancing nuclear power plant safety above and beyond the regulatory framework,” and we are striving to accomplish these tasks.