Kansai Electric Power Group

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## **Responsibilities Toward Customers**



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## Securing a stable supply of energy

## Policy and Concept

### Energy risks faced by Japan

Japan's energy self-sufficiency rate is around 12%, including nuclear power generation, which is a very low value compared to major countries in the world. For most of its fossil fuel needs, Japan must rely on imports. Since energy resources on the earth are not inexhaustible, stably securing energy resources is a top-priority issue for Japan. For continued stable supply of energy in the future, it is vital to combine various power generation methods in a well-balanced manner, while not relying on only a single power generation method.

#### Energy self-sufficiency rates of major countries (for 2018, except FY 2019 for Japan)



### Decarbonization drive

The Japanese government pledged in October 2020 to achieve carbon neutrality by 2050. Moreover, at the climate change summit in April 2021, it announced a greenhouse gas reduction target of 46% below fiscal 2013 levels by fiscal 2030, and the Strategic Energy Plan is being reviewed to achieve these targets.

### Facility configuration based on S+3E

Under these circumstances, with priority given to Safety (S), we are committed to seeking optimum, well-balanced combination of our power sources to simultaneously achieve 3E, namely Energy security, Economy, and Environmental conservation. Specific measures include introducing renewable energy and using nuclear energy both to the maximum, as well as decarbonizing thermal power generation.



### Changes in power source composition

### Goals

On the basis of our Zero Carbon Vision 2050, with priority given to safety, we are committed to decarbonizing all of our power generation systems, optimizing the combination of power sources to increase Japan's energy self-sufficiency, thereby stabilizing and improving the cost efficiency of energy supplies. Specific measures include introducing renewable energy and using nuclear energy, using both to their maximum potential, as well as decarbonizing thermal power generation.

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## Efforts

### Approach for stable fuel procurement

We place a premium on stable, economically flexible procurement of thermal power generation fuel.

We are thus diversifying procurement sources, offering flexible pricing options and taking part in the entire LNG value chain from procurement to receiving, including upstream operations (stake acquisition) and middle-stream operations (transportation), encompassing a wide range of businesses.

These efforts are designed to ensure fuel procurement, better meet fluctuating power demand in a flexible manner, and improve overall cost efficiency.



### • Enhanced spot trading for agile LNG procurement and sales



In an effort to deal with power demand fluctuations, KE Fuel Trading Singapore Pte. Ltd., which was established in April 2017 to secure procurement of LNG and expand our sales network, plays a pivotal role in extending our information gathering network based in Singapore, the LNG trading hub in the Asia Pacific region. The role of KE Fuel Trading Singapore includes timely gathering of information such as spot LNG trading and promotion and improvement of our flexible LNG procurement/sales systems.

### • Developing a full-scale nuclear fuel cycle

Uranium, a fuel for nuclear power generation, is produced in politically stable nations, which enables a stable supply. It can also be a "semi-domestic energy resource" mainly because a small amount of uranium is required for long-term power generation and spent fuel can be reprocessed and used again as fuel. Promotion of the "nuclear fuel cycle," a cycle of re-using uranium and plutonium out of fuels used at nuclear power plants, is a practical way to effectively use energy resources and secure stable energy for Japan, a resource-poor country.



\* MOX (mixed oxide) fuel: Plutonium mixed with depleted uranium Source: "Nuclear Power and Energy Drawings" (Japan Atomic Energy Relations Organization)

### Interim storage facility

Spent fuels are stored in a spent fuel pool inside power stations for a certain period of time and then transported to a reprocessing plant. In case the pool is filled to capacity, the power station cannot be operated. For this reason, spent fuels have to be taken out in a planned manner. Installation of an interim storage facility, in which spent fuels are temporarily stored, enables the stable operation of power plants into the future. With the "Plan to promote measures for spent fuel" set up in 2015, we are working on selecting the candidate sites for interim storage facilities outside Fukui Prefecture, to be finalized by the end of 2023 for planned commencement around 2030.

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## Initiatives prioritizing safety at nuclear power plants

## To prevent the lessons of the Mihama Nuclear Power Station Unit 3 accident from fading away

## Policy and Concept

On August 9, 2004, an accident involving the rupture of secondary system piping occurred at Mihama Nuclear Power Station Unit 3. Based on the President's Declaration "Ensuring safety is my mission, and the mission of the Company," we have strictly implemented recurrence-prevention measures, with a firm determination that we shall never cause such accidents. The Nuclear Power Division has established Five Basic Principles as preventive measures that form part of our quality policy concerning the operation of nuclear power businesses with safety as the top priority. These measures are revised as necessary for safety improvement purposes. Making every August 9th our "Safety Vow Day," every employee observes a moment of silence. We are working to cultivate a safety culture in order to implement business management with safety as the top priority and prevent the lessons of the Mihama Nuclear Power Station Unit 3 accident from fading.

> Quality policy concerning the operation of nuclear power businesses with safety as the top priority

- 1. We will prioritize safety above all.
- 2. We will positively invest resources for safety purposes.
- 3. We will fully recognize the characteristics of nuclear power and continue our effort in reducing risks.
- 4. We will put our endeavor to recover the trust of plant-hosting communities and the whole country by further pushing ahead with the communication with them.
- 5. We will objectively assess our effort toward safety.

## Goals

Give top priority to safety in business operations, based on lessons learned from the accident at Mihama Nuclear Power Station Unit 3.

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## **Efforts**

#### "Safety Vow Day"

- A stone memorial was erected in the premises of the Mihama Nuclear Power Station with a pledge not to repeat similar accidents.
- All employees shall commemorate the victims of the accident with a moment of silence every year on August 9 at 15:22 (the time of the accident) with each individual renewing his/her determination to give top priority to safety.
- The President and others renew vows of safety and observe a moment of silence before the stone memorial every year.
- All employees review their Conduct Cards on which they have written their own safe conduct oaths.

#### • Communication between management and front-line workers

All offices are visited by the president while executives (including those of other divisions) engage in face-to-face discussions with power station staff. It is an opportunity for front-line workers to communicate their opinions to management.

#### Improved communication with manufacturers and subcontractors

Continuous improvements are made through interactive communication to ensure the safe operation of nuclear power plants as well as strengthening the cooperative relationships we have with manufacturers and subcontractors. Opinions collected through questionnaires contribute to developing our safety culture, identifying unsafe operational practices in nuclear power plants and improving the work environment.

#### • Door-to-door visits with local residents

Our employees, including the Director of the Nuclear Power Division, visit each household in communities where our power plants are located (towns of Mihama, Ohi and Takahama in Fukui Prefecture) to engage in mutual dialogue.

### In-house training

Tailor-made training courses are provided to all employees, from new recruits to newly-appointed managers, to brief them on the accident at Mihama Nuclear Power Station Unit 3 and help them learn lessons from it.



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### **Commitment to Enhancing Nuclear Safety**

## Policy and Concept

In response to the accident at the Tokyo Electric Power Fukushima Daiichi Nuclear Power Station, we established our Commitment to Enhancing Nuclear Safety, which clearly states our ideals about nuclear power safety, as a company proclamation that is one of our most important company rules. The company proclamation underlines our determination to constantly improve safety in nuclear power generation, whereby all executives and employees fully understand the characteristics and risks of nuclear power generation and always remind themselves of the potential magnitude of an accident, with the President playing a leading role in making company-wide efforts to protect local communities, society and environment.

#### <Composition and summary>

Preface	Every one of us shall remember the lessons learned from the Fukushima-Daiichi nuclear accident and ceaselessly strive to enhance nuclear safety to protect the people not only in the plant-hosting communities but also the whole country, and to preserve the environment.		
Characteristics of nuclear power generation and risk awareness	Nuclear power generation has superior characteristics in terms of energy security, prevention of global warming and economic efficiency, and is an essential power source for the future. On the other hand, nuclear power generation has risks of radiation exposure and environmental contamination. Every one of us shall always bear in mind that once a severe accident happens due to lack of proper management, it could cause enormous damage to the people and the environment.		
Continuous removal/ reduction of risk	To enhance nuclear safety, we shall fully understand the characteristics and risks of nuclear power generation and continually remove or reduce such risks while identifying and evaluating them, never believing at any moment that we have reached the goal of ensuring safety. These efforts shall be conducted at each level of the Defense-in-Depth.		
Development of safety culture	Safety culture is the basis for continuously removing or reducing risks. Since the accident of Mihama Unit No. 3, we have been reviewing and improving our safety culture, and we shall develop such safety culture. To this end, we shall always be ready to question anything, learn from others and listen to the voices of society and discuss issues uninhibitedly while respecting diverse opinions with further efforts.		
Commitment to enhancing nuclear safety	Enhancing nuclear safety is the overriding priority in the company. It is also important to promote two-way communications with the people in the plant-hosting communities and the whole country, and to share common perceptions on nuclear safety. Under the President's leadership, every one of us shall work together to tirelessly enhance nuclear safety.		

### Goals

Every one of us shall remember the lessons learned from the Fukushima Daiichi nuclear accident and ceaselessly strive to enhance nuclear safety to protect the people not only in the plant-hosting communities but also the whole country, and to preserve the environment.

### Efforts

#### In-house training

A series of e-learning training courses are in place to help all employees understand our Commitment to Enhancing Nuclear Safety.
Each department voluntarily holds group discussions while managers communicate safety messages to raise safety awareness among employees.

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### Safe and stable operation of power plants

## Policy and Concept

Take all possible measures to safely and carefully operate and maintain nuclear power plants, underlining our determination to constantly improve their safety.

### System



### Goals

We will continue to safely and carefully operate and maintain our nuclear power plants, thereby ensuring the safe and stable operation of Units 3 and 4 of the Takahama Nuclear Power Station and the Ohi Nuclear Power Station, and the Mihama Nuclear Power Station Unit 3, each of which has resumed operations.

## **Efforts**

#### Key safety measures

#### Careful inspection and examination

In an effort to ensure the safe and stable operation of our nuclear power plants, facilities and instrumentation are regularly inspected and shut down in accordance with the relevant laws and regulations, all of which is intended to protect shop-floor employees and maintenance personnel.

• Data on regular inspection results and facility conditions is reviewed to determine the content and frequency of inspections according to the characteristics of each facility. This approach serves as the basis of our inspection and maintenance protocol.

#### Education and training of plant employees (operators, maintenance personnel, etc.)

Improving the technical skills of shop-floor employees (operators, maintenance personnel, etc.) is key to the safe and stable operation of nuclear power plants. In-house and external training is conducted on a regular basis.

- OJT is conducted through routine practice.
- Operators regularly simulate normal operating procedures and practice troubleshooting.
- Maintenance personnel are trained on inspection work at the Nuclear Power Training Center, using the same instrumentation one would find at a power plant.

#### Five-layered wall structure to contain radioactive substances

Uranium nuclear fission at nuclear power plants produces radioactive substances, which are contained in a building with a five-layered wall structure (pellets, cladding tubes, pressure vessels, containment vessels and external shielding walls).

#### In-depth defense system

Nuclear power plants are designed to prevent malfunctions and operational errors when, in the event of failure, reactors are immediately shut down, followed by the cooling and containment of radioactive substances.



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#### Reactor cooling system

Following a shutdown, residual heat removal pumps are activated to operate coolers, which cool the primary system water. In the event of a complete power loss, auxiliary feed pumps powered by steam-driven turbines feed water to steam generators, which cool the primary system water.

#### Safety measures to deal with various risks

#### Toward improved safety and confidence

Learning lessons from the accident at the Tokyo Electric Power Fukushima Daiichi Nuclear Power Station, the new regulatory requirements provide measures against earthquakes and tsunamis, with design standards revised to prevent similar accidents; taking into account the risks of natural disasters in Japan, these standards cover various other risks such as volcanic eruptions, tornadoes and forest fires. Complying with these new regulatory requirements, we are renovating our licensed power plants to protect them against severe accidents, earthquakes, tsunamis, tornadoes and fires. At the same time, voluntary efforts are underway to improve plant safety.

#### Improving technical capabilities and systems in the event of a severe accident

#### Conducting nuclear power disaster response training in collaboration with central and local government

Disaster response training programs are underway at our nuclear power plants, the Nuclear Power Division and the head office, some of which are conducted in collaboration with central and local government, manufacturers and subcontractors. Specifically, comprehensive training programs are conducted without prior notice to participants, simulating severe conditions, where emergency response capabilities are tested for improvement purposes. This includes the feasibility of post-accident remedial measures using water trucks and alternative portable low-pressure water pumps - which is already part of routine drill exercises at each of our power plants - and the examination of the communication systems in place for each task force.

#### Education and training tailor-made for each role and responsibility

Supervisors and operators undergo repeated education and training according to their roles and responsibilities, in how to respond to a severe accident. This is to improve their emergency response capabilities and technical skills. Contents and target employees of this education and training were made more diversified than those at the time right after the accident at the Tokyo Electric Power Fukushima Daiichi Nuclear Power Station. In fact, the total number of trainees training on plant behavior during a severe accident has increased significantly, as has the frequency of training on emergency response procedures.

#### Creating a response system

#### Improving the out-of-hours response system

Emergency personnel stand by around the clock at Mihama, Takahama, and Ohi Nuclear Power Stations, taking into account findings learned from the accident at the Tokyo Electric Power Fukushima Daiichi Nuclear Power Station. They are in charge of the initial response to an incident, where resources are mobilized within six hours after an accident has been declared.

#### Improving the Nuclear Emergency Assistance Center

The Nuclear Emergency Assistance Center (at Mihama, Fukui Prefecture) was jointly established by nuclear operators and went into full-scale operation in December 2016. Here remote-controlled equipment and instruments have been upgraded for flexible, advanced disaster response while emergency personnel of respective nuclear operators are trained. In the event of an emergency, equipment and instruments can be transported to a disaster site, with remote-controlled assistance provided to jointly minimize radiation exposure of shop-floor employees.

#### Cooperation between nuclear operators

Nuclear operators are expanding their cooperative relationship to further improve the safety and reliability of their operations.

- Mutual cooperation agreement between five electric power companies in western Japan
- Our Company, the Chugoku Electric Power, Shikoku Electric Power and Kyushu Electric Power entered into a cooperative agreement on nuclear power generation on April 22, 2016, and they were joined in the agreement by Hokuriku Electric Power on August 5, 2016. This agreement is designed to improve preparedness and emergency responses to nuclear power disasters by providing mutual assistance, equipment, instruments, etc., as well as taking advantage of their geographical proximity. There is also agreement to cooperate in conducting decommissioning in a safe, well-organized manner and setting up special facilities to deal with designated severe accidents, all intended to further improve the safety and reliability of nuclear power generation.

In fiscal 2020 attachments to connect our electric facilities to power supply vehicles owned by four electric power companies in western Japan were made and provided to secure multiple power sources for emergency situations at power plants.

• Technical cooperation agreement between four electric power companies with pressurized water reactors (PWRs) Four electric power companies operating nuclear power plants equipped with similar PWRs (Hokkaido Electric Power, Kansai Electric Power, Shikoku Electric Power and Kyushu Electric Power) entered into a technical cooperation agreement on October 19, 2016. With this agreement in place, the four companies, each of which operates PWRs, exchange their technical knowledge and experience, where they share information on power plant operation management in other countries and examine new technologies to further improve reactor safety.



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### Supporting municipal evacuation plans

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### Efforts toward nuclear emergency preparedness

While a variety of safety measures are in place at our nuclear power plants, we cooperate with central and local government in minimizing impacts on local residents in the event of a nuclear disaster involving the massive release of radioactive substances. These activities are in line with relevant laws including the Disaster Countermeasures Basic Act and the Act on Special Measures Concerning Nuclear Emergency Preparedness. Nuclear operators are and will be making full efforts to ensure nuclear safety and prevent disasters in cooperation with central and local government.

#### Communication in the event of a nuclear disaster

In the event of a nuclear disaster, we as nuclear power plant operators shall immediately report to the relevant authorities at all levels; all the parties concerned shall get together at the Offsite Center to share information and determine protective measures for local residents as the situation demands, while the nuclear disaster task force of each municipality communicates the center's decisions to local residents.

#### Supporting nuclear disaster victims

- Providing transportation for evacuation We shall mobilize all resources available to help local residents evacuate; this includes the provision of evacuation supervisors and transportation such as employee shuttle buses, welfare vehicles and contracted helicopters and vessels.
- Assisting and managing testing during an evacuation
   At the request of municipalities, we shall assist and manage testing at the time of evacuation, targeting all those evacuated from the
   Urgent Protective action planning Zone or UPZ. Inspectors shall be provided along with equipment such as contamination survey
   meters and Tyvek suits.
- In order to increase the number of inspectors for evacuation (to secure about 3000 inspectors), agreements between nuclear power plant operators were revised in March 2021.
- Providing necessities

We provide necessities such as food and blankets as well as radiation protection facilities.



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#### **Over 40 years of operation**

### Policy and Concept

Nuclear power - a well-balanced energy source contributing to 3E (Energy security, Economy and Energy conservation) - is essential in resource-poor Japan. As a result, nuclear power generation should be maintained at a certain level to ensure energy security and develop technical/human resources, whereby accident-proof nuclear power plants can be operated for over 40 year-spans. Therefore, we will be making the most of our nuclear power plants, placing a premium on their safe operation.

### Goals

We take all measures to operate and maintain the over 40-year-old Mihama Nuclear Power Station Unit 3, which was resumed operations, for keeping safe and stable operation with a continuous sense of safety and caution.

In addition, with responsible construction management in place and safety prioritized, we are committed to improving the safety of our nuclear power plants while thoroughly reviewing our current construction plans.

Moreover, we aim to communicate the importance and safety of operating nuclear power plants for over 40 years to local communities and residents.

## Efforts

Our Company has always maintained the durability of our nuclear power plant facilities by continuously implementing maintenance and management, including regular inspections and planned equipment replacements. At the time of our application for an operation period extension for 40 years from the starting month of operation, in accordance with the law, for Takahama Nuclear Power Station Units 1 and 2 and Mihama Nuclear Power Station Unit 3, special inspections were carried out for reactor vessels and other equipment. In addition, technical evaluations of degradation from age were carried out, confirming that the durability of important facilities for safety could be assured even for an operation period of 60 years. After these examinations, we received operation period extension approvals from the Nuclear Regulation Authority for both power stations. Safety improvement measures at Mihama Nuclear Power Station Unit 3 and Takahama Nuclear Power Station Unit 1 have been completed, and those for Takahama Nuclear Power Station Unit 2 are underway, with top priority given to safety. In addition, we are communicating face-to-face with stakeholders through online symposiums, briefing sessions and lectures on demand to help them better understand over 40 years of operation at our nuclear power plants. We will also continue to proactively communicate with the public as well as communities near the plants.



Takahama Nuclear Power Station Units 1 and 2 containment vessel upper shield installation work



Online symposium

### **Reliable decommissioning processes**

## Policy and Concept

- We comply with the relevant laws and regulations on decommissioning, while giving top priority to safety in order to minimize exposure, reduce radioactive waste and properly manage security measures.
- We have designed safe decommissioning procedures and processes, incorporating effective decontamination techniques, remote-controlled equipment and measures to prevent the spread of contamination all intended to minimize the exposure of those engaged in radiation-related work, strictly complying with statutory dose limits. In addition, a safe storage period is set for zones with relatively high radiation levels, taking into account the attenuation of radioactivity.
- We will continue to work on a series of measures for safe decommissioning, environmental conservation and regional development, according to the Agreement on Nuclear Power Plant Decommissioning, which was signed with Fukui Prefecture, Mihama Town and Ohi Town.

## Goals

#### Securing human and environmental safety

With safety prioritized, we will focus on minimizing exposure and radioactive waste as well as properly managing security measures.

#### • Designing safe decommissioning procedures and processes

We will design safe decommissioning procedures and processes, incorporating effective decontamination techniques, remote-controlled equipment and measures to prevent the spread of contamination, as well as operating waste disposal facilities to minimize the exposure of neighborhood residents and those engaged in radiation-related work.

### Foolproof system

The Decommissioning Management & Engineering Center (which was established in June 2015 within the Nuclear Power Division) cooperates with subcontractors in decommissioning nuclear power plants in a safe and foolproof manner.

### • Activities according to the Agreement on Nuclear Power Plant Decommissioning

We will continue to work on a series of measures for safe decommissioning, environmental conservation and regional development.

## Efforts

#### Radioactive waste treatment and disposal

#### Solid radioactive waste treatment

Non-radioactive general waste accounts for about 97% of decommissioning waste while radioactive waste is disposed of at designated facilities prior to completion of decommissioning in accordance with its radioactive level.

Meanwhile, waste that does not need to be treated as radioactive waste (clearance) is recycled as much as possible, following approval by the government.

#### Treatment of gaseous and liquid radioactive waste

Gaseous and liquid radioactive waste is properly treated and released into the environment as is the case during regular plant operations, with strict monitoring in place.

### Decommissioning with safety prioritized

Decommissioning is conducted in four stages, which all together takes a total of about 30 years. While Stage 1 (dismantling) is underway, proper measures are in place for safe decommissioning.

#### Decommissioning underway at Mihama Nuclear Power Station Units 1 and 2

O Dismantling of equipment, etc. in the turbine buildings

Dismantling of contamination-free equipment, etc. is underway at the turbine buildings (items that may serve as obstacles to the dismantling process such as piping, frames and other small equipment) in addition to large equipment such as turbines, condensers and deaerators.

 $\odot$  Transportation of new fuel

New fuel (unused fuel assembly) kept in storage vaults or spent fuel pits is being shipped in transportation casks for processing at fuel-processing plants at home and abroad.



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#### Decommissioning underway at Ohi Nuclear Power Station Units 1 and 2

#### $\bigcirc$ System decontamination

Chemicals will be used to remove radioactive substances attached to the inner surfaces of equipment and piping – a process is underway to minimize the exposure of workers and facilitate dismantling.

 $\odot$  Dismantling of equipment, etc. in the turbine buildings

Dismantling of contamination-free equipment, etc. is underway at the turbine buildings (items that may serve as obstacles to the dismantling process such as piping, frames and other small equipment) in addition to large equipment such as turbines and moisture separator heaters.

#### Activities as a pioneer of decommissioning

#### Japan's first decontamination of a pressurized water reactor (PWR) system

The system decontamination procedure underway at Mihama Nuclear Power Station Units 1 and 2 is unprecedented, involving the decommissioning of pressurized water reactors (PWRs), which requires advanced and special techniques. Therefore, any and all literature on system decontamination and plant manufacturer expertise were extensively surveyed from sources both home and overseas from the perspectives of "foolproof decontamination" and "reduction of waste produced by decontamination." This has led to cooperation with overseas manufacturers with proven track records in decontamination and with domestic manufacturers producing the same equipment as those used in Mihama Nuclear Power Station Units 1 and 2 (and hence well-versed in all aspects of the station). As a result, as originally planned more than 90% of the radiation has been removed, with safety prioritized.

#### Learning from the world

The work at Mihama Nuclear Power Station Units 1 and 2 is expected to pioneer the decommissioning of pressurized water reactors (PWRs) while research on decommissioning is underway in partnership with universities and the Wakasa Wan Energy Research Center. In addition, information sharing agreements are in place with nuclear operators in US, France, Spain and South Korea, etc. on many aspects of nuclear power generation (including decommissioning) to learn from safety improvement measures in these countries.

### • Cooperation with nuclear operators in Japan

We signed an agreement with Hokuriku Electric Power, Chugoku Electric Power, Shikoku Electric Power and Kyushu Electric Power on cooperation across nuclear power businesses to facilitate safe decommissioning including reviewing techniques and procurement for large-scale decommissioning, information sharing on decommissioning processes, etc.

#### Review of techniques and procurement for large-scale decommissioning

Measures such as joint material procurement are underway for safety and efficiency improvement purposes, according to the schedule of large-scale decommissioning projects at each power company including the inspection of the reactor interior, etc.

#### Information sharing on decommissioning processes

The status of decommissioning projects at each power company is mutually monitored to facilitate safe decommissioning while information on expertise, best practices and concerns in other countries are shared.

#### Local business development and employment promotion

According to the Agreement on Nuclear Power Plant Decommissioning (which was signed with Fukui Prefecture and Mihama Town on February 10, 2016, and with Ohi Town on November 22, 2018), the timing and procedures for decommissioning are being planned and announced, based on coordination with local businesses and employment promotion policies related to the decommissioning work.

#### Information sharing for each decommissioning process

In cooperation with the Wakasa Wan Energy Research Center, contractors and subcontractors share information on decommissioning processes to encourage the participation of local businesses according to their technical capabilities.

○ Information sharing, implemented three times for Mihama Nuclear Power Station Units 1 and 2 (on March 2017, January 2018 and January 2019)

O Information sharing, implemented once for Ohi Nuclear Power Station Units 1 and 2 (on March 2020)

#### Research with local businesses

Research on decommissioning is underway with local businesses and other stakeholders to address and solve technical challenges, thereby streamlining decommissioning processes and improving their reliability. At the same time, assistance is provided to local businesses committed to developing new techniques to aid with decommissioning.

 $\odot$  Four techniques were adopted in fiscal 2016, two in fiscal 2017, one in fiscal 2018, two in fiscal 2019 and two in fiscal 2020.

#### Human resources development for decommissioning

Guidance on decommissioning, lectures on relevant techniques, study tours and first-hand experience programs are provided in cooperation with the Wakasa Wan Energy Research Center.

O Conducted 13 times in total between fiscal 2016 and 2020.

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SOCIAL

## Voluntary efforts to enhance nuclear safety

## Policy and Concept

Learning lessons from the accident at Mihama Nuclear Power Plant Unit 3, we place a premium on nuclear safety. Specifically, the accident at Tokyo Electric Power Fukushima Daiichi Nuclear Power Station made us aware that our understanding and preparedness for risks unique to nuclear power generation were not necessarily sufficient. We, therefore, established a roadmap to "step-up voluntary/continuous efforts to improve nuclear safety," based on which various measures are being implemented.

### Goals

Efforts are underway to realize a nuclear safety ideal, which translates into development and implementation of a framework for voluntary/continuous safety improvement measures as well as incorporating external knowledge for further improvement, in accordance with our "Commitment to Enhancing Nuclear Safety."

## Efforts

### • Communication and standardization of a philosophy, giving top priority to safety

#### Sharing a philosophy of giving top priority to safety

- $\odot$  Management takes the lead in communicating our philosophy of giving top priority to safety.
- Members in management visit frontline workplaces in the power plants, etc. to communicate with plant employees and subcontractors, stressing the importance of improving safety.

○ A company-wide proclamation: "Commitment to Enhancing Nuclear Safety" has been adjusted, communicated and standardized at workplaces.

- Group discussions and workshops are held, involving case studies relating to the proclamation.
- Internal communication tools are in place, such as a calendar proclaiming our commitment.

### Safety improvement activities

#### Promoting safety improvement measures

- O Large-scale safety renovations are underway at Takahama Nuclear Power Station Unit 2 toward over 40 years of safe operation.
- Safety renovation completed: Seawater tunnels were bored through solid ground to improve earthquake resistance, with existing tunnels replaced.
- $\odot$  Voluntary safety improvement measures are underway, in addition to new regulatory requirements.
- Water trucks, which replace fire pumps for emergency cooling of reactor cores, etc., are deployed at Takahama Nuclear Power Station Units 3 and 4 to quickly pour water and save on manpower.

#### Boosting the accident response capacity

- $\odot$  Our accident response capacity is improving to deal with possible nuclear disasters.
- Comprehensive disaster drills are conducted at all nuclear power plants.
- As measures against severe accidents beyond design basis, assuming extreme conditions such as injuries among emergency responders, unscripted drills are regularly conducted.
- With timely and accurate accident remedial measures in place to prevent the spread and expansion of damage following an accident, continuous improvements are made, based on achievements made in previous drills.
- <Key features of the drill>

Confirmed that disaster mitigation programs at new emergency response locations are conducted as planned.

- We have improved our facilities and optimized their layouts in the large-space emergency response locations, and checked to confirm in the drills that we can facilitate activities such as information gathering and strategical review (at Ohi Nuclear Power Station and Mihama Nuclear Power Station).
- We are working with five power companies\* and affiliates in western Japan to better deal with nuclear disasters.
- In addition to various power supply facilities complying with new regulatory standards, attachments are made and deployed to connect to other companies' power supply vehicles, a means to diversify power sources.
- A special assignment team (SAT) consisting of group companies' employees is in place to respond to severe accidents 24/7, working in cooperation with our employees (Takahama Nuclear Power Station).
- \* The Chugoku Electric Power Co., Inc., Shikoku Electric Power Co., Inc., and Kyushu Electric Power Co., Inc., Hokuriku Electric Power Company, and our Company

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#### • Developing and improving systems to manage risks, etc.

#### Continuously improving our risk management system

O Learning lessons from industrial accidents that took place last year in addition to those that occurred in the past\*, we are stepping up our risk management efforts to prevent accidents and respond to disasters.

- Risk review meetings are held as needed to discuss risks involved in decommissioning, etc. and to develop countermeasures
- Efforts to further prevent industrial accidents
- As COVID-19 cases were reported at our power plants, we are stepping up measures to prevent further cases.
- · Conduct extensive voluntary PCR tests in addition to those requested by public health centers.
- Check health conditions and past movements of all those who enter the premises, regardless of their history of moving out of and into the prefecture, as well as those of their families.

\* Including a fatal accident that took place during safety renovations at Takahama Nuclear Power Station Units 1 and 2 (March 2020); serious worker injuries that took place during tunnel construction at Ohi Nuclear Power Station Units 3 and 4 (October, 2019), earthquake-proof construction and reinforcement work on the spent fuel pits at Mihama Nuclear Power Station Unit 3 (September 2019), and safety renovations at Takahama Nuclear Power Station Units 1 and 2 (September 2019); serious worker injuries caused by falling steel materials at Takahama Nuclear Power Station Unit 1 (October 2018); the collapse of a crane at Takahama Nuclear Power Station Unit 2 (January 2017); and water leakage in the premises of Takahama Nuclear Power Station Unit 4, as well as automatic reactor shutdown following automatic generator shutdown (February 2016).

#### Developing and improving tools for risk management and assessment

○ We have developed a risk assessment tool (PRA\*1 model) and plan to promote its use in plant operations.

- "Weekly risk information," which involves regular inspections to visualize weekly changes in risk factors, is shared among plant
- employees, including subcontractor employees (Takahama Nuclear Power Station Unit 4 and Ohi Nuclear Power Station Unit 4).
- A system is in place for decision making based on quantitative risk assessment using PRA, where facility reconstruction, procedural changes, and determination of failure significance are managed at Takahama Nuclear Power Station Units 3 and 4 and Ohi Nuclear Power Station Units 3 and 4.
- The PRA model has been completed for Takahama Nuclear Power Station Units 1 and 2 and Mihama Nuclear Power Station Unit 3, incorporating each plant's updated operation status and the latest data provided by NRRC\*2.
- \*1 Probabilistic Risk Assessment: A scenario where events that can take place at facilities such as nuclear power plants develop into serious accidents (core damage, etc.) is systematically and comprehensively considered to quantitatively determine the probability of core damage and other accidents.

\*2 Nuclear Risk Research Center

#### Incorporating objective evaluation and external knowledge

O Safety measures at our nuclear power plants are monitored and evaluated for improvement purposes.

• Divisional oversight review meetings are held tentatively, where the Nuclear Power Division regularly reviews information\*1 on each plant's oversight activities (PI\*2, MO\*3, etc.).

• Operational information is shared with overseas electric power companies, specifically with working-level staff, to incorporate practices and knowledge from around the world.

• Operational information is also shared with EDF (France) through websites and email.

• General managers representing EDF in Japan and South Korea (headquartered in Tokyo) visited Ohi Nuclear Power Station.

\*1 Data compiling and analyzing information (PI, MO, etc.), and information for performance comparison between sites or with other power companies at home and abroad (each of which will be tested for improvement) \*2 Performance Indicator: An index for quantitative management of power plant performance

\*2 Performance Indicator: An index for quantitative management of power plant performance \*3 Management Observation: Power plant observation by the Nuclear Power Division and plant managers

### Improving communication

#### Promote risk communication\*1

○ As we take the opinions and concerns of the public seriously, some of which voice concern toward operating power plants over 40 years, we are engaging in mutual communication to jointly seek solutions.

- We visit each household in Mihama Town, Takahama Town and Ohi Town, where our nuclear power plants are located, to engage in mutual dialogue.
- The need for over 40 years of operation and its safety have been communicated through briefings to local residents, local meetings, symposiums, etc.
- $\odot$  Communication tools are being developed with focus on energy and nuclear power generation.
- "The Nanden Kanden Theater" video is available for view on social media\*<sup>2</sup> and our website, where stand-up comedians explain energy and nuclear power in an easy-to-understand way.

\*1 A mechanism whereby the risk aspects of nuclear power generation are shared and the public's opinions are incorporated into business management. \*2 On the Company's YouTube and Twitter, and the Group's Facebook accounts

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Sustainability for the Kansai Electric Power Group	Environment		Social	Governance
	Kansai Electric Power G	roup	Kansai Electric Power Co., Ind	(Kansai Transmission and Distribution, Inc. )

#### Strengthening our resources (human resources development)

 $\odot$  We are training and educating "personnel supporting nuclear safety" according to our human resources development plan. <Acquiring knowledge for power plant operation>

• Operators are trained in preparation for plant restart after a long period of shutdown, using a system that simulates a new plant control panel (Mihama Nuclear Power Station and Takahama Nuclear Power Station).

<Education and training for raising hazard awareness>

• A program is in place to let our employees and of subcontractor employees "experience a sense of safety firsthand," where a 3D VR is used to simulate construction work risks (Ohi Nuclear Power Station).

<Leveraging risk information>

• Working-level staff who have learned PRA attend a "risk specialist course" offered by the Nuclear Risk Research Center (NRRC). At the same time, Deputy Plant Manager (Nuclear Safety) takes part in a "risk-informed management program" designed for those in charge of plant RIDM\*1.

<Developing leadership abilities>

• Management-level staff take part in a leadership development program sponsored by JANSI\*<sup>2</sup> for top management and managers, where they exchange views and opinions.

\*1 Risk-Informed Decision Making

\*2 Japan Nuclear Safety Institute

### Relevant data

	2019/3	2020/3	2021/3
Number of participants in training and practice programs for nuclear power disasters	About 5,900	About 5,700	About 5,400
Number of nuclear power disaster drills	_	About 6,100	About 5,200

SOC

Kansai Electric Power Co., Inc.

Kansai Transmission and Distribution, Inc.

## Efforts for cyber security measures

### Policy and Concept

Amid increasing cyber attacks targeted at important infrastructure operators around the world, as an important infrastructure operator in the electric power business, the Group believes that its key commitment to customers and society is to steadily advance cyber security efforts to ensure the safe and stable supply of power. To fulfill this responsibility, we are strengthening cyber security measures in accordance with the relevant laws, regulations and guidelines for cyber security management, along with internal regulations. Moreover, as cyber attack methods are evolving day by day as they become more complex and sophisticated, we strive to obtain cyber attack information from outside the company in addition to the latest security information, so we can prepare countermeasures in a timely manner.

### System

Director responsible: Makoto Araki [Kansai Electric Power CISO (Executive Vice President)] Deliberative body: Executive Meeting Management office: Cyber Security Administration Group, Office of IT Strategy (Information Security Management Office)

### Goals

### Major information security incidents "0"

### Efforts

By quickly recognizing threats such as security incidents and vulnerabilities that occur outside the Company, as well as issues with our Information Technology (IT) systems used in our daily work and all Operational Technology (OT) systems related to the provision of a stable power supply, we are continuously implementing necessary security measures.

Specifically, risk assessments are made for IT and OT systems, necessary technical measures are taken, and monitoring is carried out 24 hours a day, 365 days a year at dedicated IT and OT monitoring centers. In addition to an emergency response system established in preparation for incidents, we are continuing to provide drills for how to respond to cyber attacks as well as relevant training for employees. We are gathering information about cyber attacks that occur outside our Company and the latest security information through, for example, the activities of the Japan Electricity Information Sharing and Analysis Center (JE-ISA\*), which is an organization that undertakes the sharing and analysis of cyber attack information among electric power businesses. Moreover, countermeasures are reviewed as needed.



Company-wide training to respond to cyber attacks



ility for the Kansai Electric Power Group	Environment	Social	Governance

Kansai Electric Power Grou

Kansai Electric Power Co., Inc.

Kansai Transmission and Distribution, Inc.

## Providing services as a consolidated group

## Policy and Concept

#### Creating a prosperous future with customers

Our Group has been meeting the various demands of our customers and society by offering total solutions that combine our services, including comprehensive energy supply which is mainly offering electricity, as well as telecommunications, daily life and businesses. While customers and society have increasingly different needs, with social changes triggered by the global decarbonization movement and COVID-19 infection, we are committed to exceeding customers' expectations so that they will continue to select the Kansai Electric Power Group. Specifically, we are addressing head-on the needs and problems of customers and society while expanding and providing valuable service solutions to serve the public, businesses and communities.

### Goals

Sustainabili

Customer satisfaction survey: Satisfaction index 90% or higher  $\rightarrow$  FY 2020 results: 91.5%

### Efforts

#### Services for residential customers

We offer a variety of services to help customers live comfortably, conveniently and economically. These include electric bill structures that meet customers' lifestyles, combined price plans for gas and electricity, total electric conversion for a zero-carbon life and integrated plans for energy and electric equipment.

We also have services that are helpful for our customers' daily lives, including a service to dispatch support personnel to customers experiencing problems, such as sudden power outages, as well as opening an EC mall designed to make life more convenient. All these solutions are available, tailormade to the needs and lifestyles of customers.

As a comprehensive energy company, we will continue to promote initiatives for customer satisfaction.

#### Service improvement and service creation to reflect the opinions of customers

We work to create and improve services in response to requests received from customers through our contact centers, website, etc. so we can meet our customers' needs.





#### Customer satisfaction survey

We conduct "Customer Satisfaction Surveys" asking our customers to assess how understandable our telephone operators' explanations regarding inquiries such as "The lights in the house went out suddenly." We receive high evaluations from a lot of customers. We will keep working to make our customers more satisfied by utilizing the evaluation results for improvements in services and businesses.





Kansai Electric Power Co., Inc. Kansai Transmission and Distribution, Inc.

#### Lifestyle services with the confidence of our customers as the foundation

By addressing head-on the needs and problems of customers, we aim to become a corporate group that continues to provide new value to customers; we offer safe, comfortable, and convenient lifestyle services in the areas of home security, communication services, health management support, and nursing care, at high quality and reasonable prices that will satisfy our customers.



### • Services for corporate customers

We offer a wide range of services, including energy sales, energy management system services, energy solutions (PV, storage batteries, electrification, etc.), mobility services and business solution services. All these are designed to help customers solve increasingly diversified and complex management and social issues, such as growing environmental needs associated with decarbonization and carbon neutral initiatives, and constantly changing business environments due in part to intensifying natural disasters.

#### Example of on-site solar power generation services provided

We provided on-site solar power generation services to Trial Company, Inc., where the Super Center Tondabayashi (Osaka Prefecture), a supermarket opened in the spring of 2020, uses green electricity to power the entire store, thereby contributing to environmental conservation.

They plan to continue using the services and opt for solar power generation for captive consumption while looking at combining solar power generation with storage battery solutions as part of its Business Continuity Plan (BCP). We will therefore further strengthen our partnership to help them expand their business.



Trial Company logo and solar panels

#### Examples of adopting utility services

Opened in Chuo-ku, Kumamoto City, Kumamoto Prefecture in September 2019, SAKURA MACHI Kumamoto building, a large-scale complex comprising various shops, a cinema complex, a bus terminal, residences, a hotel, office buildings, etc. has adopted utility

services of Kanden Energy Solutions Co., Inc. (hereinafter, Kenes). This client commented that the utility services, not requiring initial investment and enabling the leveling of equipment maintenance costs, exactly meet the need of making effective use of project costs while lowering initial costs, and that Kenes' track record of service introduction and energy management in large complex facilities was a major deciding factor in adopting its services. SAKURA MACHI Kumamoto building also accepts people stranded with no way home in the event of a large-scale disaster. While Kenes continues to ensure a stable energy supply, we will protect the safety and security of our customers and local residents, including aid in disaster preparedness, in cooperation with Kenes.



SAKURA MACHI Kumamoto building

istainability for the Kansai Electric Power Group	Environment	Social	Governance
	Kansai Electric Power G	roup Kansai Electric Power Co., Ir	nc. (Kansai Transmission and Distribution, Inc.)

#### Examples of services for corporate customers

Examples of services for corporate customers					
Enudge 2.0 (Kansai Electric Power Co., Inc.)	Next-generation energy platform. In addition to encouraging energy-saving behaviors, this service provides integrated solutions for operational improvement and renovation of store equipment and operational support for individual stores.				
Omaka Save-Air (Kansai Electric Power Co., Inc.)	A new air conditioning control service equipped with our proprietary Al-based auto-tuning function. A control computer installed on the air conditioner used by the customer automatically controls the air conditioner according to the usage situation and thereby achieves "energy saving" while maintaining "comfort."				
Solar power generation on-site service (Kansai Electric Power Co., Inc.)	A service in which dispersed power generation equipment such as solar power generation equipment and storage batteries are installed on the customer's premises at our expense for long-term operational use. Customers can reduce their environmental burden by using energy from the equipment we operate.				
Kanden comprehensive disaster mitigation service (Kansai Electric Power Co., Inc.)	Utilizing our long-cultivated knowledge about disaster mitigation as a comprehensive energy company, we coordinate and provide products and services necessary for corporate customers to respond to various "unexpected" events (safety confirmation system, emergency fuel delivery service, emergency power generator rental service, etc.).				
Utility service (Kanden Energy Solution Co., Inc.)	A service that enables customers to outsource facility management and even makes initial financing unnecessary for them by providing comprehensive services from fund-raising and design to installation and maintenance administration for utility facilities related to energy, including power receiving equipment, air-conditioning and heating equipment and boilers.				
Asset solution (Kanden Realty & Development Co., Ltd.)	As a company operating real estate brokerage and real estate consulting businesses (real estate survey, appraisal, proposals for effective utilization, etc.) owned by general corporations, we provide one-stop support to solve customer problems, leveraging our nationwide network and information-gathering abilities.				
Office eo Hikari (OPTAGE, Inc.)	Small and medium customer companies/offices and SOHO can entrust their office internet, telephone, and hosting (email, web, database) to OPTAGE, and enjoy these services with confidence at a reasonable price.				
Comprehensive building management (Kanden Facilities Co., Ltd.)	A service that provides safe and secure facility environments and contributes to increasing property values through, for example, the daily maintenance management and cleaning of buildings and facilities, security, environmental hygiene and energy management				

The Group companies that provide the services are indicated inside parentheses.

SOG

### • Relevant data

Sus

	2019/3	2020/3	2021/3
Number of reform cases based on customer feedback (cumulative)	225	129	140
Customer satisfaction (telephone consultation)	90.2%	92.0%	91.5%
Number of Hapi e-Miruden* subscribers	4,830,000	5,522,000	5,912,000

\* A web-based service that provides notifications related to electricity and gas charges and usage (a service provided by the Kansai Electric Power Co., Inc. only)

Sustainability for the Kansai Electric Power Group	Environment		Social		Governance
	Kansai Electric Power G	roup	Kansai Electric Power Co.,	Inc.	Kansai Transmission and Distribution, Inc.

# To provide high-quality electric power

## Policy and Concept

Our quality policies for the safety of our electric facilities

Ensuring safety

Maintaining high supply reliability

In order to ensure safety and a reliable supply amid an extremely harsh business environment, we are reviewing the way we do business, which includes checking if there are any oversights in risk management related to supply reliability, and increasing operational efficiency on the premise of not sacrificing safety and quality. While maintaining these efforts, we will carry out the following activities.

- Maintain electric facilities based on ensuring safety.
- Strive to prevent accidents caused by human error.
- Carry out our business in compliance with relevant laws, regulations and internal rules.
- Set and review quality goals in line with our quality policies.
- Confirm that front line workers are familiar with our quality policies.
- Review the appropriateness of the quality policies.

### Goals

Annual power outage time per household "Maintain the highest standard in the world"

### Efforts

#### Toward a safe and stable supply

We at Kansai Transmission and Distribution, Inc. work to operate power systems that provide a reliable link between power plants and consumers and optimize the configuration of facilities. We are also making thorough efforts to prevent failure recurrence. As a result of our efforts, with the exception of major natural disasters, we are maintaining one of the world's highest power quality levels in the transmission and distribution business.

#### Annual duration of power outage per household



Sustainability	for the Kansai Elect	ric Power Group
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Governance

Kansai Transmission and Distribution,

Kansai Electric Power Group Kansai Electric Power Co., Inc.

Social

On September 4, 2018, the powerful Typhoon No. 21 ripped through the Kansai area, causing breakages totaling more than 1,300 utility poles and a power outage affecting roughly 2.2 million households in total. We apologize to our customers for the inconvenience and trouble caused by the extensive and long-term power outage.

With natural disasters intensifying nationwide, the Electricity Resilience Working Group\* compiled verification results regarding our response to these emergencies. On July 1, 2020, the Acts for Establishing Resilient and Sustainable Electricity Supply Systems came into force. With the aim of fulfilling our power supply obligations through prompt restoration of the power supply, we have created an inter-business collaboration plan for disaster response and have started its implementation. This plan specifies cooperation with general power transmission

and distribution business operators and related organizations (local governments, Self-Defense Forces, etc.).

In line with the plan, by addressing issues presented by the Electricity Resilience Working Group and sharing the lessons learned from Typhoon No. 21, we are determined to fulfill our mission of supplying safe and stable electricity and supporting society. To that end, we will develop and introduce new technologies and new construction methods, as well as systematically maintaining or replacing aging equipment, aiming for prevention of accidents and prompt restoration of the power supply. We will continue to step up our efforts for quick recovery in the event of an emergency.

\* A joint working group of the Electricity and Gas Basic Policy Subcommittee under the Advisory Committee for Natural Resources and Energy, and the Electric Power Safety Subcommittee under the Industrial Structure Council

#### Examples of countermeasures taken following Typhoon No. 21

- Quick information gathering using smartphones
- Understanding the scope of damage using drones; using this information for restoration work
- Trial operations of power outage information collection utilizing smart meter data
- Bolstering a broad support system inside and outside the company
- Timely provision of information to the customer on power outages and restoration work

#### • Understanding the scope of damage using drones; using this information for restoration work

In places that are difficult to access, such as a site following a landslide, we use drones to check the status of equipment so we can quickly grasp the whole picture.

Drones are also expected to be used in restoration work, for example, using a drone for overhead wiring of a cord to replace power lines.



Damage investigation by aerial drone video



Using a drone for overhead wiring of a cord to replace power lines



A drone taking off with a cord



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	Kansai Electric Power C	iroup ) (	Kansai Electric Power Co.,	nc.	Kansai Transmission and Distribution, Inc.

Introduction of a third-generation automated power distribution system

Twenty years have passed since the introduction of the conventional automated power distribution system. To address technical issues associated with the mass introduction of dispersed power generation equipment, etc., the system was renewed at the replacement timing in May 2021. By consolidating the dispersed systems and making them physically redundant, we can "ensure business continuity in the event of a disaster," "improve security," and "increase efficiency in system maintenance." In addition, central management of system information facilitates understanding of the system status of the entire Kansai region as well as data analysis. We expect that this can be utilized for considering optimal facility configuration and further improving system operation.



Third-generation automated power distribution system console

### • Formulation of efficient replacement plans using facility information

In order to deal with issues such as aging of power transmission and distribution facilities, increases in the amount of renovations, lack of construction capability, and labor scarcity, we have been working to build a framework that enables formulation of sustainable and efficient renovation plans toward the future by collecting and analyzing information regarding deterioration of substations, power transmission, and distribution facilities, the main facilities of electric power infrastructures, giving priority to renovation. In recognition of our efforts for efficient facility replacement continuing over the years, we received the METI Minister's Award in the 2020 Infrastructure Maintenance Awards.



\*2 Including underground transmission lines

### Relevant data

Sustainability fo

	2019/3	2020/3	2021/3
Number and rate of smart meters installed	About 10.58 million / About 81%	About 11.53 million / About 88%	About 12.25 million / About 93%
Specialist technicians with specialized skills	188	124	132
Number of injured ordinary citizens	5	4	6
Transmission and distribution loss rate	5.05%	4.80%	5.10%

### SASB-related data System resilience

Code	Index	2019/3	2020/3	2021/3
	System Average Interruption Duration Index (SAIDI)	397 min (due to Typhoon No. 21)	6 min	8 min
IF-EU-550a-2	System Average Interruption Frequency Index (SAIFI)	—	0.11	0.1
	Customer Average Interruption Duration Index (CAIDI)	—	54.55	80.00
IF-EU-000.C	Length of power transmission and distribution lines	Transmission lines: 18,823 km Distribution lines: 132,456 km	Transmission lines: 18,804 km Distribution lines: 132,662 km	Transmission lines: 18,851 km Distribution lines: 132,880 km



Sustainability for the Kansai Electric Power Group	Environment		Social		Governance
	Kansai Electric Power C	roup ) (	Kansai Electric Power Co., In	c. )	Kansai Transmission and Distribution, Inc.

## To prevent electrical accidents

## Policy and Concept

• Our quality policies for the safety of our electric facilities

### Goals

Goals based on the materiality of the Kansai Electric Power Group

Number of injured ordinary citizens "None"

### **Efforts**

If something approaches, touches or damages electrical facilities of Kansai Transmission and Distribution, Inc., including transmission and distribution equipment, it may lead to not only a power outage but also to possible injury or death from electric shock. To prevent such electrical accidents, we conduct various public relations activities through mass media and on our website as well as on the website of Kansai Transmission and Distribution, Inc., including transmission electrical accidents, we conduct various public relations activities through mass media and on our website as well as on the website of Kansai Transmission and Distribution, Inc. As part of these activities we ask construction companies, when they perform construction work near our transmission and distribution equipment, to attach protective covers to electric wires for sure and not to touch the wires that have been cut.

### • PR campaign for accident prevention

- ① Announcements via our website and mass media
  - Reminders to attach protective covers and where to apply for these covers
  - Warning about touching severed wires, etc.
  - Notice of precautions in daily life and in an emergency situation
  - Prior to a typhoon, reminders to work on preventing objects from becoming projectiles

#### 2 On-site publicity

As part of our PR campaign, if we discover a construction site with protective covers not attached to electric wires, etc., we call the operator's attention to the dangers of electricity and request that they apply for the protective covers.

③ Featured in *Electricity and Security* published by Kansai Electrical Safety Inspection Association

Our PR campaign for the prevention of accidents related to electricity on construction sites was published in the July-August 2021 issue.

④ Visiting classes

We visit various skills training classes, such as crane work operations, and introduce examples of electrical accidents as well as relevant countermeasures.