

2. Ensuring Stability of Supply

(1) Further increase trust in and ensure safety and peace of mind with respect to nuclear power stations.

The serious accident that occurred at the Fukushima Daiichi Nuclear Power Station owned by Tokyo Electric Power Company, Incorporated has raised concerns about the use of nuclear power and questions about how to supply energy. In this feature, we respond to your comments regarding the management of Kyushu Electric Power's nuclear power plants.

Comment from Stakeholders | “Now that trust in the safety of nuclear power has been so badly shaken, I want Kyushu Electric Power to show that it puts safety first.”

Supplemental Information

The ability to safely shut down a nuclear reactor, cool the fuel with water, and seal off radioactive material is essential to ensuring nuclear power plant safety.

At the Fukushima Daiichi Nuclear Power Station, the nuclear reactor successfully shut down when the earthquake struck. However, the tsunami that hit soon after, which was far larger than anyone had imagined, flooded the emergency diesel generators, seawater pumps and other equipment, causing all electric power to be lost. This subsequently caused the supply of water for cooling to fail.

With the fuel unable to be cooled, the radioactive material ultimately could not be properly sealed off, resulting in an accident.

Safely **SHUT DOWN**
nuclear reactor

Use water to **COOL** fuel

SEAL OFF
radioactive material

This could not be done due to the power loss caused by tsunami

Learning from the accident at the Fukushima Daiichi Nuclear Power Station, Kyushu Electric Power enacted emergency safety measures that will allow the nuclear reactor and the storage pool for spent fuel to be continuously cooled even in the event of a complete loss of electricity due to a tsunami. Power plants will also maintain the ability to cool using seawater, and the ability to cool the storage pool for spent fuel.

[Emergency Safety Measures]

1. Safeguard power sources

- Deploy high-voltage generator trucks
- Implement measures to restore external power sources



2. Safeguard pumps, etc. for transporting coolant water

- Deploy temporary pumps and hoses
- Measures to prevent flooding of vital equipment areas



3. Safeguard coolant water

- Safeguard water resources



[Conduct emergency safety practice drills]



Practice drill on supplying power with high-voltage generator trucks



Practice drill on supplying coolant water with temporary pumps

[Conduct practice drills on restoring external power sources]



Practice drill on supplying power using mobile equipment



Practice drill on temporary restoration of pylons, etc.

Re

How We Are Answering | We are taking voluntary, ongoing steps to ensure trust in nuclear power, with our sights set on achieving even greater safety and enhanced reliability.

Kyushu Electric Power has enacted appropriate emergency safety measures, with the Japanese government verifying that we can ensure the level of safety necessary to prevent damage to the reactor core.

Furthermore, a stress test (primary evaluation) performed confirmed that emergency safety measures have improved the safety of our nuclear power plants, which are now being inspected by the government.

The voluntary and ongoing promotion of initiatives aimed at enhancing safety and reliability even further are indispensable to ensuring public trust in nuclear power. Today, in light of technological insights emphasized by the Japanese government and other lessons gained from the accident at the Fukushima Daiichi Nuclear Power Station, we are moving forward with measures for attaining greater safety and reliability.

Stress Test (Primary Evaluation) Results

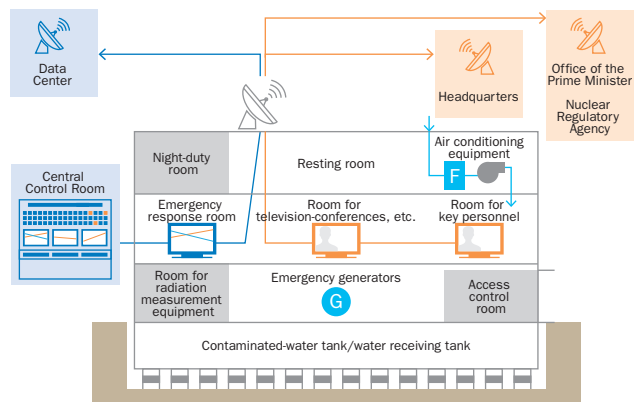
A stress test is a type of evaluation that tests the extent to which a nuclear power plant can withstand earthquakes and tsunamis that surpass its original design parameters.

For stresses that exceed the original estimates (earthquakes and tsunamis), we have confirmed that our facilities can withstand earthquakes that are 1.61 to 1.89 times stronger than the standard for a seismic event, and tsunamis between 13.0 to 15.0 meters high, without losing the ability to cool fuel.

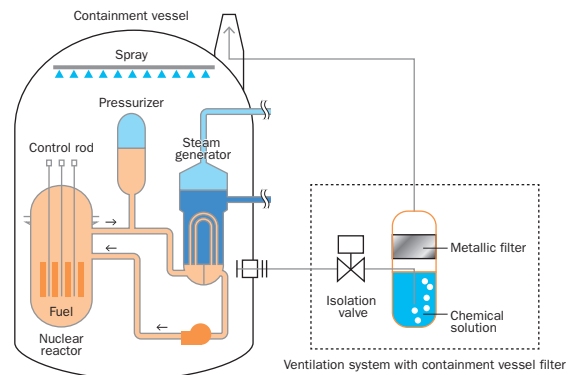
Similarly, we have confirmed that fuel at our facilities can be continuously cooled for between approximately 65 to 104 days without any outside assistance. This means that there is ample time for outside assistance to arrive should it be needed.

Initiatives for Achieving Greater Safety and Reliability

■ Constructing new buildings with a seismic isolation structure (tentatively by fiscal 2015)



■ Installation of ventilation systems with containment vessel filters (tentatively by fiscal 2016)



Scenario Evaluating Loss of All AC Current

	Reactor No.	Fuel Location	Time That Fuel Can Be Continuously Cooled Without Outside Assistance	
			Before emergency safety measures	After emergency safety measures
Genkai Nuclear Power Station	No. 1	Reactor	Approx. 5 hours	Approx. 65 days
		Spent fuel storage pool	Approx. 2.6 days	
	No. 2	Reactor	Approx. 5 hours	
		Spent fuel storage pool	Approx. 2.7 days	
	No. 3	Reactor	Approx. 5 hours	
		Spent fuel storage pool	Approx. 2.2 days	
	No. 4	Reactor	Approx. 5 hours	
		Spent fuel storage pool	Approx. 2.3 days	
Sendai Nuclear Power Station	No. 1	Reactor	Approx. 5 hours	Approx. 104 days
	No. 2	Spent fuel storage pool	Approx. 1.8 days	

2. Ensuring Stability of Supply

(2) Supply-demand measures for summer 2012

The suspension of nuclear power station operations prompted concerns about power supply stability among a growing number of customers. In this section, we present an overview of measures implemented by Kyushu Electric Power to cope with supply and demand in summer 2012.

Comment from Stakeholders | “I want Kyushu Electric Power to be able to unwaveringly supply power that we can depend on in daily life.”

Supplemental Information

In summer 2012, all of Kyushu Electric Power's nuclear power stations remained shut down. Under these trying circumstances, we made every imaginable effort to ensure we could maintain our ability to supply power, from procuring additional fuel and readjusting maintenance schedules for thermal power stations that were replacing lost nuclear power, to restarting long-suspended operations at thermal power stations and purchasing power from other utilities.

[Supply Capacity Measures Enacted from the Planning Stages]

■ Readjustment of Scheduled Maintenance Shutdown for Thermal Power Stations

- Periodic inspections for five oil-fired thermal power stations postponed until fall 2012 or later (500,000 kW x four, 375,000 kW x one)
- Postponement of construction to upgrade Gas Turbine 1 (100,000 kW) at Shin-Oita Power Station Unit 1

■ Restarting of Long-suspended Operations at Thermal Power Stations

- Restarted Karita Power Station Shin-Unit 2 (375,000 kW, 40-year history), scheduled for permanent shutdown at the end of fiscal 2011



■ Installation of Emergency Power Facilities

- Installed a diesel generator (4,000 kW) at the Buzen Power Station



- Utilized mobile power-generating equipment for a remote island (3,000 kW)

■ Procurement of Additional Thermal Power Fuel

■ Receiving Power from Other Companies

- Received power through planned arrangements with other utilities
- Received power from entities generating surplus electricity

Re

How We Are Answering | Kyushu Electric Power and its employees are united in an all-out effort to ensure future power supply stability.

For summer 2012, we devised a scenario that envisaged similar cooperation in conserving electric power from customers as in 2011 (7% reduction over 2010), and assumed temperatures comparable to the intense summer heat of 2010. Even so, our projections predicted supply shortfalls and a very challenging power supply-demand picture.

The situation was projected to be tightest from July 2 to September 7, 2012. For this reason, we asked for customer cooperation in targeting a reduction of 10% or more in their weekday power consumption for this period (excluding a traditional weeklong summer holiday) over their maximum usage in 2010. As a final option should any unlikely events arise, we also prepared for scheduled power outages. These measures, though necessary, undoubtedly caused a great deal of worry and concern for our customers.

Under these conditions, maximum power demand for the summer, excluding the effects of temperatures during the period, fell by around 10% from two years earlier, thanks in large part to the conservation efforts of our customers. In terms of supply, no major obstacles emerged thanks to power received through the support from other utilities and our efforts to procure power on the open market, together with other actions taken to secure additional supply capacity.

At this point, we would like to express our gratitude to all our stakeholders for their cooperation in conserving electricity. Looking ahead, the employees of Kyushu Electric Power are committed to doing their very best to ensure the stable supply of power in the future.

[Measures for Additional Supply Capacity Based on Power Supply-Demand Conditions]

- Receipt of additional power allotment from other utilities
- Procurement of power on the open market

[Measures to Reduce Demand During Periods When Conservation is Requested]

- Request for cooperation in conserving electricity
- Expansion of contracts for summer planned adjustments
- Adoption of menu of additional steps to reduce demand



2. Ensuring Stability of Supply

(3) Proactive development and introduction of renewable energy sources

As national-level debate around general energy policy rages on, more attention is being given to the development of renewable energy sources. The following is a brief introduction to how Kyushu Electric Power is answering the call with regard to renewable energy development.

Comment from Stakeholders | “I would like to see Kyushu Electric Power take assertive steps to develop renewable energy sources.”

Supplemental Information

Kyushu Electric Power is relatively far along in the adoption of solar, wind and geothermal power compared to other utilities in Japan. We proactively develop and introduce renewable energy sources, including biomass and hydropower.

		Total Output of Facilities (10,000 kW)	Explanation
 Nagashima Wind Hill Co., Ltd.	Wind Power Generation	41 (6.7)	Along with vigorously promoting the development of wind power generation with Group companies, we purchase power from wind farm operators to obtain a total capacity of 410,000 kW (approx. 15% of Japan's total wind power output).
 Mega Solar Omuta Power Station	Solar Power Generation	74 (0.5)	Together with the installation of solar power equipment at former plant sites and business sites, we began purchasing power mainly for residential use with the launch of a system in Japan for the purchase and sale of surplus power in November 2009. Our total capacity is 740,000 kW (approx. 20% of Japan's solar power output).
 Hitotsuse Power Station	Hydroelectric Power Generation	183 (128)	We are aggressively developing hydroelectric power together with a careful consideration for the surrounding environment, and now have 1.83 million kW of hydroelectric capacity (excluding pumped hydroelectric storage power generation).
 Hatchoubaru Geothermal Power Station	Geothermal Power Generation	21 (21)	Kyushu is rich in geothermal resources. Accordingly, our total geothermal power output is 210,000 kW (approx. 40% of Japan's total geothermal power output). Geothermal power generation is centered on the Hatchoubaru Geothermal Power Station (110,000 kW), the largest power plant of its kind in the country.
 Miyazaki Biomass Recycle Co., Inc.	Biomass and Waste Product Power Generation	25 (4)	In addition to our own power generation using materials such as poultry manure, woodchips and garbage as fuel, we purchase surplus power from producers of power from biomass and waste products, obtaining a total capacity of 250,000 kW.

*Figures in parentheses are the total output of Kyushu Electric Power and Group company facilities
Results at end of fiscal 2011

Re:

How We Are Answering | We are firmly committed to moving ahead with the development and adoption of a variety of renewable energy sources, and have steadily made much progress.

Kyushu Electric Power has moved ahead in the development and adoption of renewable energy sources from the standpoint of utilizing domestic energy sources more effectively, and taking advantage of sources manifesting a superior performance in the fight against global warming.

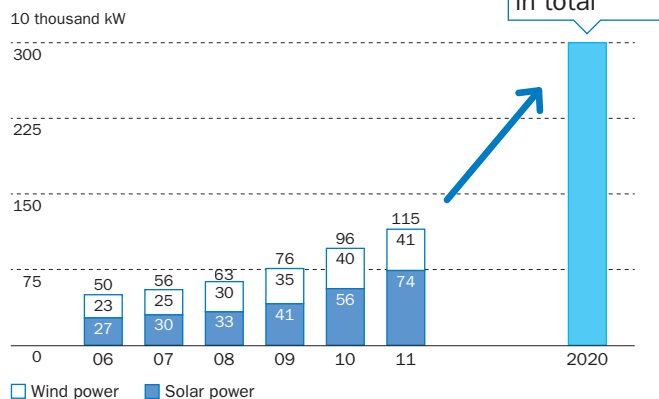
For two such energy sources, wind and solar, we aimed in the previous fiscal year to achieve combined capacity for all our facilities of 2.5 million kW by fiscal 2020. However, in light of the increase in residential solar power and the adoption of a feed-in tariff power purchase and sales system in Japan, we have upwardly revised this aim to 3 million kW.

For wind power generation, in a bid to expand the volume of electricity available, from May 2012 we began accepting applications to feed in to the power grid on an as-needed basis. Previously, the number of applications was set, and they were accepted once annually, with participants chosen from the pool of applicants at random.

For solar power generation, Group company Kyuden Ecosol Co., Ltd. is developing a mega-solar power station (13,500 kW) on the former site of the Omura Power Station in Omura City, Nagasaki Prefecture. The new power station is slated to begin operating in spring 2013.

In hydroelectric power generation, while the development of our large-scale hydroelectric sites is nearly complete, we remain committed to studying the feasibility and development of future hydroelectric capacity, taking economic potential, site location and other factors into account. We are also installing

Our capacity outlook for wind and solar power



Figures include our own development efforts and purchases from other companies.

a hydropower plant and providing technical support for it using river maintenance flow discharge resources.

Geothermal power generation is the most stable renewable energy source that is able to supply electricity over the course of a year. We are conducting studies and gathering information for the development of new sites, including examining local conditions at promising locations, after considering factors such as technological challenges, economic potential, and the site environment.

In biomass power generation, we are processing sewage sludge and converting it to fuel. From fiscal 2013, we plan to begin co-combusting this material with coal at our Matsuura Power Station.

