Special Report 1: Safety Efforts at Nuclear Power Plants

Voluntary and Ongoing Measures to Boost Nuclear Power Safety

- We have always been aware of the risks of nuclear power, and have worked to assure its safety. Since the Great East Japan Earthquake, we have resolved never to allow an accident such as that which occurred at Fukushima, and are taking every possible measure to ensure the safety of our nuclear power plants. This includes adhering to the new regulatory standards.
- Minimizing the risks of nuclear power will continue to be our top operational priority, and we believe there is nothing more important than going beyond the regulatory requirements in taking continuous, voluntary measures to improve and enhance nuclear power safety.
- Therefore, we are implementing initiatives based on the risk governance framework directed by our top management, as follows.

1 Nurturing a culture of safety

Cultivate a culture of safety to serve as the foundation of our voluntary and continuous safety enhancement initiatives.

2 Strengthening risk management

Enhance safety by managing risk using the PDCA cycle.

3 Improving nuclear power plant safety

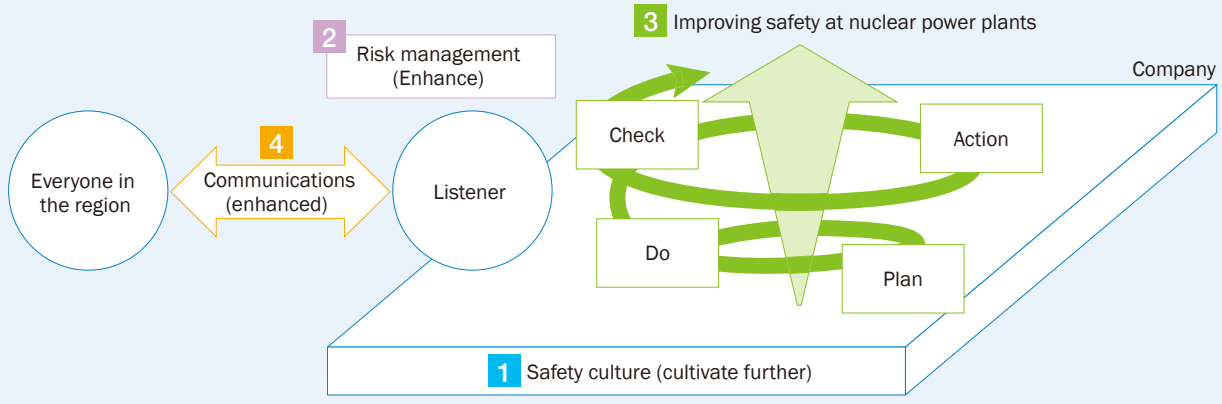
Repeat the PDCA cycle and employ “hard” and “soft” measures to improve nuclear power plant safety.

4 Fully communicating with everyone in local communities

Use communications to share information about the above initiatives with everyone in our local communities, listen to the opinions of everyone concerned and reflect those opinions in our efforts.

Our aim with these efforts is always to maintain the world’s highest safety standards.

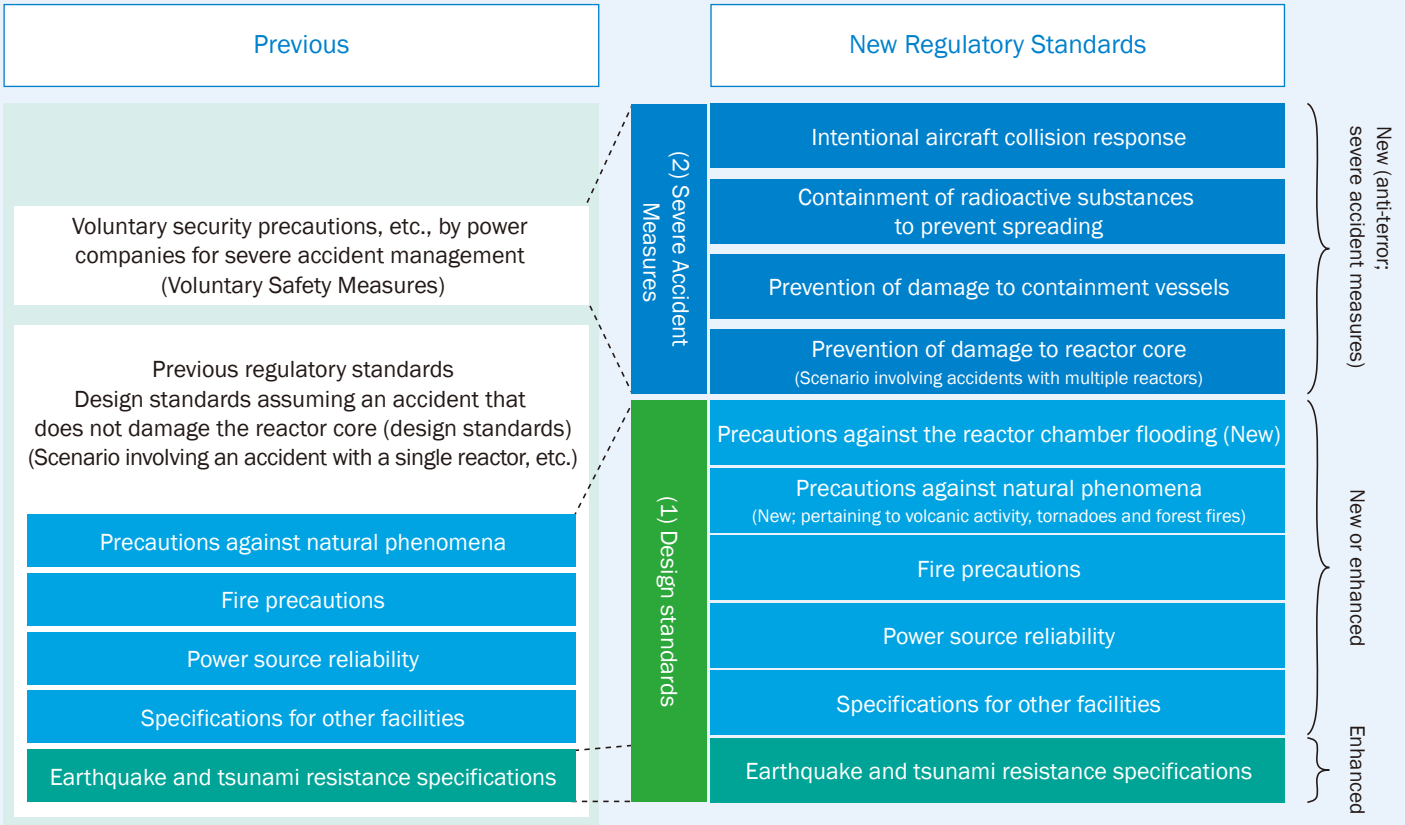
Risk Governance Framework



Kyushu Electric Power's Safety Measures: In Line with New Regulatory Standards

- Kyushu Electric Power applied in July 2013 to confirm that safety measures in place at Sendai (Units 1 & 2) and Genkai (Units 3 & 4) are in compliance with the new regulatory standards.
- Also, on April 30 and June 24 of 2014 we submitted supplements to our application for permission for a change in the reactor installation license pertaining to the compliance inspections performed up to now on Sendai Units 1 & 2 to the Nuclear Regulation Authority.
- The Nuclear Regulation Authority on July 16 acknowledged and announced that the inspection proposal in the application is in line with the new regulatory standards. Next, a call was put out for scientific and technical opinions concerning the inspection proposal during the 30-day period from July 17 through August 15.
- Kyushu Electric Power will voluntarily continue to employ "hard" and "soft" measures to improve safety, engaging in every possible measure to ensure the safety of our nuclear power plants.

New Regulatory Standards Overview



Response to New Standards (main efforts at the Sendai nuclear power plant)

Standard Seismic Motion

▪ Safety evaluations are being conducted based on new understanding as a result of surveys of earthquakes and geological features covering a broad range of details

[Earthquakes with specified epicenters at each site]

• Based on active fault evaluation by the Headquarters for Earthquake Research Promotion, it has been confirmed that there is no change in the Ss-1 standard seismic motion (540 gal).

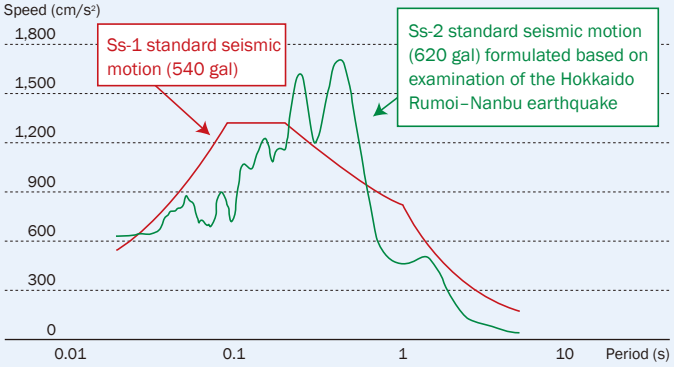
[Earthquakes with unspecified epicenters]

• Based on the results of examination of the Hokkaido Rumoi–Nanbu earthquake, a new standard seismic motion of Ss-2 (620 gal) has been added.

[Standard seismic motion used for mission-critical base-isolated structures]

• The Ss-L (400 gal) standard seismic motion for use in anti-seismic designs for mission-critical base-isolated structures was added for use in creating base-isolated structures that can withstand a mild, drawn-out earthquake

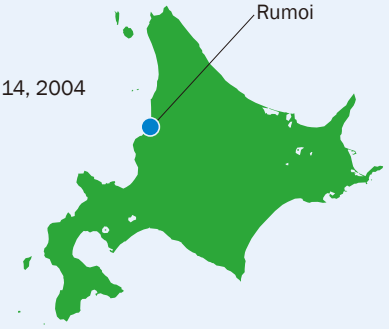
Standard Seismic Motion for the Sendai Nuclear Power Plant



Outline of the Hokkaido Rumoi–Nanbu Earthquake

• Date:
December 14, 2004

• Magnitude:
Mw5.7



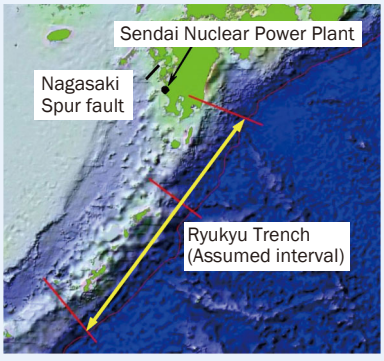
Standard Tsunami

▪ Rather than assuming that our current store of knowledge and data is all there is, our safety evaluations are conducted from the perspective that something may occur that exceeds what is known.

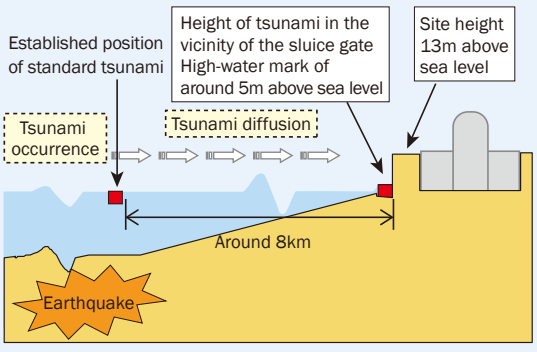
• The standard tsunami has been reevaluated to cover tsunamis stemming from an interplate earthquake (Mw 9.1) in the Ryukyu Trench, to a generator (in the vicinity of the sluice gate) maximum high-water mark of around 5m above sea level (at high tide).

*The generator's maximum run-up height, taking into account the difference between land subsidence and the tide level, is around 6m above sea level.

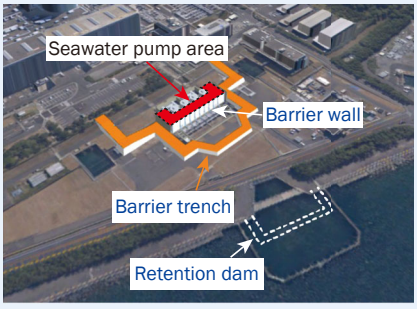
• A protective wall has been placed around the seawater pump area at 5m above sea level with a retention dam located in front of the sluice to allow the water to drain when the wave recedes as well.



Tsunami source assumed in tsunami evaluation



Outline of tsunami evaluation



Seawater pump area waterproofing measures

Evaluating Volcano Impact

- Calderas that were the sites of catastrophic eruptions in the past would be monitored.
- Regular monitoring of volcanoes for changes (diastrophism and seismic activity measurement data, collection and analysis of data released by public organizations)
- In the event of the possibility of a catastrophic eruption, the reactor would be shut down and fuel removed.
- Implementation of continuous efforts, such as the creation of an actual system by establishing a monitoring committee, and the gathering of input from experts.

Volcanoes Monitored

Serious Accident Response Measures (Main Efforts at the Sendai Nuclear Power Plant)

Reactor Core Damage Prevention

- Measures are taken to cool the interior of the reactor through the use of portable injection pumps and mobile high-capacity pump trucks to prevent damage to the fuel (core) in the reactor.

Mobile high-capacity pump truck

Prevention of Damage to Containment Vessels

- Measures are taken to cool and decompress the container vessel through the use of portable injection pumps and other equipment, to prevent hydrogen explosions and damage to the containment vessel that encapsulates the radioactive substances.

Containing the Spread of Radioactive Substances

- Measures are taken to contain the spread of radioactive substances into the atmosphere, for example if the containment vessel is damaged.

Discharge test using a water cannon

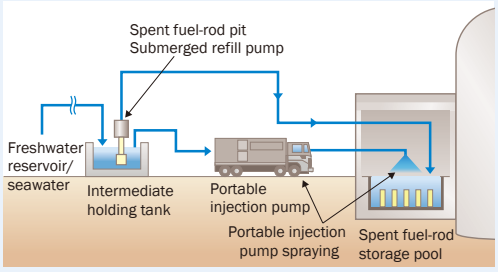
Power Source Support Functions

- Diversify of power supply options.

Mobile high-capacity generator (alternate current)

Spent Fuel-Rod Storage Pool Cooling

- Measures are taken that employ submerged pumps to cool the spent fuel-rod storage pool and prevent damage to fuel rods.



Establishment of Emergency Response Posts for Maintaining Functions as an On-Site Command Center

- Established substitute emergency response posts.
- Establish mission-critical anti-seismic building (fiscal 2015).

Substitute emergency response post

Interview with the Chief of the Sendai Nuclear Power Plant

Everyone at the plant is working as one on safety measures and drills to bring about a restart of operations.

Nobuhiko Fujiwara
Executive Officer
General Manager of Sendai Nuclear Power Plant

Q. How is the atmosphere at the plant, and what sort of efforts will you be engaging in from now on?

A. The Nuclear Regulation Authority announced the Sendai nuclear power plant's draft inspection record, and while that has increased our motivation toward getting the plan restarted, we also feel a lot of pressure.

We feel a sense of tension as we work to implement the safety measures in the new regulatory standards at the plant. Everyone at the plant and in our partner companies is making safety their top priority, and we are giving our all in a unified effort as we make our preparations.

Repeated drilling is vital to ensuring that from now on each of us sticks to his post and responds appropriately at all times, no matter what.

Q. As plant chief, what is foremost in your mind?

A. I think that no matter what we do to shore up the facility itself, the most important thing is the ability of our people, by which I mean the intuition that comes from using all one's senses. Our people must watch, pay close attention, and remain aware so as not to let any changes escape their attention.

There are many people working at the nuclear power plant, including those from our partner companies. I believe that communications, by which each person speaks his mind and pays heed to the thoughts of his associates, are important to each of us understanding co-workers, connecting with them, and performing as a member of the organization.

I myself tour the site daily, including the business offices, and do my best to foster opportunities for communications so I can get to know everyone at the plant as an individual and get a sense of what they are like.

Conducting Drills in Conjunction with the National and Local Government

The first national government-sponsored nuclear power emergency drill, which was based on a new disaster prevention framework created to reflect the lessons learned through the Fukushima Unit 1 accident, was held in October of last year.

Drills at the Sendai nuclear power emergency response posts
(Collaboration through teleconferencing with the Prime Minister's official residence and others)

Communications Program

We are engaging in a face-to-face communications program involving visits to provide explanations and power plant tours throughout Kyushu to improve understanding of the safety measures implemented at our nuclear power plants. We will strive to disseminate information appropriately and accurately in order to maintain close ties with national and related government bodies, as well as affiliated institutions.

Results of our Communications Program (Throughout Kyushu)

(People)

	Visits	Explanatory meetings	Power plant tours	Total
FY2013	Approx. 33,000	Approx. 39,000	Approx. 9,000	Approx. 81,000
FY2012	Approx. 23,700	Approx. 28,800	Approx. 10,500	Approx. 63,000