

# Measures to a Request for Suspension of Operation at Hamaoka Nuclear Power Station

May 2011



# Urgent Safety Measures at Hamaoka Nuclear Power Station 1

- **Minister of Economy, Trade and Industry directive to take urgent safety measures (March 30, 2011)**
- Chubu Electric should take safety measures to prevent damage to reactor cores or spent fuels and to restore the cooling function while controlling the discharge of radioactive substances, even if all three major functions\* are lost due to tsunami attack.

\* (1) External power supplies and emergency diesel generators, (2) seawater cooling, and (3) cooling of spent fuel pools

## - Chubu Electric's urgent safety measures

- On April 20, 2011, the progress of measures taken by Chubu Electric was reported to the Nuclear and Industrial Safety Agency (NISA).

Measures	Details	Progress
Urgent inspection	<ul style="list-style-type: none"> <li>- Emergency equipment and facilities were inspected.</li> <li>- Waterproof capability of reactor buildings was confirmed.</li> </ul>	Completed in April 18, 2011
Review of emergency action plan	<ul style="list-style-type: none"> <li>- Organization for Emergency countermeasures was established.</li> <li>- Specific procedures for ensuring proper Emergency actions were developed.</li> </ul>	Completed in April 20, 2011
Securing electric power in emergencies	<ul style="list-style-type: none"> <li>- Emergency power generators were deployed.</li> </ul>	Completed in April 19, 2011
Securing a final heat-removing mechanism in emergencies and securing emergency cooling mechanism for spent fuel pools	<ul style="list-style-type: none"> <li>- Portable power pumps necessary for filling water were deployed.</li> <li>- Nitrogen cylinders were deployed for venting.</li> </ul>	Completed in April 19, 2011
Other voluntary measures implemented	<ul style="list-style-type: none"> <li>- Back-up supplies and parts necessary for operating electric motors for seawater pumps were stored.</li> </ul>	Completed in April 19, 2011
Emergency drills in accordance with emergency reaction plan	<ul style="list-style-type: none"> <li>- Comprehensive emergency drill for a scenario of concurrent damage to Reactors Nos. 1 to 5</li> <li>→ Effectiveness was verified and assessed, and necessary improvements were made.</li> </ul>	Completed in April 19, 2011 (To be conducted periodically in the future)

# Future Safety Measures at Hamaoka Nuclear Power Station

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## - Chubu Electric's future safety measures

- On April 20, 2011, Chubu Electric reported to NISA on future safety measures to be taken, including building breakwater walls.

Measures to be taken	Period of work	Expenditure
Building breakwater walls on the coast-side of the plant premises	2-3 years	approx. 30 billion yen
Building waterproof walls in seawater pump areas	within 1 1/2 years	
Strengthening the reliability of water-proof structured doors	within 2 years	
Installing emergency AC power supply units in higher locations	within 1 year	
Maintaining back-up batteries	within 2 years	
Maintaining extra equipment and parts for cooling reactor cores in emergencies	within 2 years	
Installing emergency material/equipment warehouses	within 2 years	



We will make all-out efforts to complete these measures as soon as practicable.

# Measures to a Request for Suspension of Operation at Hamaoka Nuclear Power Station <1>

## - Investigation of urgent safety measures by the government and request for suspension of operation at Hamaoka Nuclear Power Station (May 6, 2011)

- Urgent safety measures reported from Chubu Electric to NISA on April 20, 2011 were assessed by the Ministry of Economy, Trade and Industry and NISA as appropriate.
- However, on May 6, 2011, the Prime Minister announced a request to suspend operations at Hamaoka Nuclear Power Station, with Chubu Electric receiving the following written request from the Minister of Economy, Trade and Industry:

[Request for complete implementation of protective measures against tsunami at Hamaoka Nuclear Power Station and suspension of operation until completion of the measures]

Request	Grounds for Suspension Request
<p>Future safety measures reported by Chubu Electric on April 20, 2011 should be completed:</p> <ul style="list-style-type: none"><li>- <u>Protective measures against tsunami</u></li><li>- <u>Maintenance of back-up supply of seawater pumps</u></li><li>- <u>Installation of air-cooled emergency power generators</u></li></ul> <p><u>Until all of these measures are completed and assessed by NISA as appropriate, all reactors at Hamaoka Nuclear Power Station should be suspended.</u></p>	<p>Hamaoka Nuclear Power Station is built in an area <u>adjacent to the focal region of a possible Tokai earthquake.</u></p> <p>According to an assessment by the Headquarters for Earthquake Research Promotion of the Ministry of Education, Culture, Sports, Science and Technology, <u>the probability of the occurrence of a Tokai earthquake of magnitude 8 on the Richter scale within 30 years is very high, at 87%.</u> If the possible Tokai earthquake occurs, <u>huge tsunami waves will probably attack the coastal areas.</u></p>

## Risks related to the suspension

Peak load balance	- If all available measures possible at this point (restart of the thermal plant under scheduled long-term shutdown, and termination of power supply to Tokyo Electric) are considered, the power generation reserve rate in July 2011 would be very low, at 2%.
Output balance Fuel procurement	- If all power generation capacity lost by the suspension of Hamaoka Nuclear Power Station are supplemented by thermal plants of Chubu Electric, additional fuels should be procured (for FY 2011, about 3.2 million tons of LNG and about 1.3 million kl of petroleum oil).
Effect to Operating income	- If all capacity lost by the suspension of Hamaoka are supplemented by thermal plants of Chubu Electric, Chubu Electric will experience a tough income situation for two to three years at the longest.
Funding	- Worsening of the income situation would result in increased funding requirements from outside sources. - Funding costs may increase or funding itself could become difficult due to the worsening of the income situation.
CO <sub>2</sub> emission	- If all capacity lost by the suspension of the Hamaoka Station are supplemented by thermal plants of Chubu Electric, CO <sub>2</sub> emissions will increase by about 12 million tons/year.

## Risks related to continuing operation

Risks of suspension or prolongation of suspension	- Continuing operations will increase anxiety among people in the region. Chubu Electric may not gain agreement from local people to resume operation of not only Reactor No. 3 but also Reactors Nos. 4 and 5 after the next scheduled maintenance shutdown; thus, the shutdown period could become long.
Effects on business operations	- Confidence of local businesses, indispensable for operation of the power plant, would be lost, causing difficulties in our operations. - Acquisition of future government permits, approvals and licenses, or future operation may become difficult. - Degradation of the brand image or reputation could cause adverse effects on our business operations.

## ■ Chubu Electric's Actions

- We accept the Prime Minister's request very seriously since it is equivalent to a government directive or order in fact.
- If we continue the operation of Hamaoka Nuclear Power Station against this request, we will lose confidence among local people, which is indispensable to the operation of the nuclear power plant. Without the community's support, we cannot make a definite schedule for resumption of operations after scheduled shutdown for maintenance, which could have serious adverse effects on our business operations.
- It was also confirmed with the Minister of Economy, Trade and Industry that we can resume operation promptly upon completion of breakwater walls and other safety measures that are planned for the next two to three years.
- Therefore, Chubu Electric has decided as follows:

-Reactors Nos. 4 and 5 at Hamaoka Nuclear Power Station will be suspended and the restart of Reactor No. 3 currently under scheduled shutdown will also be postponed for the time being.

-To further reinforce the safety of the Plant against tsunami, the building of breakwater walls and other safety measures will be implemented promptly. We will present details of those measures to people in the region as well as the general public in order to attain their understanding and to realize early restart of the Reactors shut down.

-The suspension of Hamaoka Nuclear Power Station will cause severe supply-demand balance conditions. Therefore, a power supply-demand task force will be established within Chubu Electric to take all possible measures to ensure stable power supply.

- Since the power demand and power supply-demand balance cannot be predicted yet under the current conditions, it is difficult to make reasonable forecasts at this point. Accordingly, forecasts of operating revenue, operating income, ordinary income and net income will not be announced at this time, for both consolidated and non-consolidated results.

## ■ Consolidated

(billion yen, %)

	FY2011	FY2011	Change	
	(Current Forecast)	(Previous Forecast)	(A-B)	(A-B)/B
	(A)	(B)		
Operating revenue	-	2,530	-	-
Operating income	-	130	-	-
Ordinary income	-	105	-	-
Net income	-	55	-	-

(Fractions are dropped)

## ■ Non-Consolidated

(billion yen, %)

	FY2011	FY2011	Change	
	(Current Forecast)	(Previous Forecast)	(A-B)	(A-B)/B
	(A)	(B)		
Operating revenue	-	2,370	-	-
Operating income	-	115	-	-
Ordinary income	-	90	-	-
Net income	-	45	-	-

(Fractions are dropped)

## ■ Policy of returns to shareholders

**Until the installation of breakwater walls and other safety measures are completed at Hamaoka Nuclear Power Station, we must endure a considerably severe income situation.**

**-Under such circumstances, however, we will strive to maintain the current dividend level (annual dividend of ¥60/per share).**

**-However, it will be difficult to implement the planned buy-back and cancellation of about 20 million shares of the Company in four years. Thus, we are withdrawing this previously announced quantitative target for treasury shares.**



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