

IAEA Briefing on Fukushima Nuclear Accident (11 April 2011, 13:00 UTC)

Presentation:

→ [Summary of Reactor Status](#)

On Monday, 11 April 2011, the IAEA provided the following information on the current status of nuclear safety in Japan:

1. Current Situation

Earthquake of 7 April

External power has been restored at all sites affected by the 7 April earthquake.

Earthquake of 11 April

The IAEA confirms that an earthquake occurred in Japan at 08:16 UTC, 11 April. The IAEA International Seismic Safety Centre (ISSC) has rated it as a 6.6 magnitude, revised from an initial 7.1 magnitude. The epicenter of the earthquake is 68 km from Daichi, 60 km from Daini, 61 km from Tokai, 173 km from Kashiwazaki-Kariwa and 179 km from Onagawa power plants. The epicenter was in land (37.01 N/ 140.48 E) at a depth of 13.1 km. The IAEA has been in contact with NISA and can confirm the following. Based on a report by TEPCO, NISA confirms at the Fukushima Daiichi nuclear power plant. No changes have been observed on the readings at the on-site radiation monitoring posts. Workers have been evacuated to the seismic evacuation shelter. Off-site power was lost and water injection pumps for Units 1, 2 and 3 stopped. NISA confirmed later that off-site power was restored and water injection resumed 50 minutes after the earthquake.

Changes to Fukushima Daiichi Plant Status

Overall, the situation at the Fukushima Daiichi plant remains very serious but there are early signs of recovery in some functions such as electrical power and instrumentation.

In **Units 1, 2 and 3**, 60 000 T of contaminated water need to be removed from the turbine buildings and trenches. This water will be transferred to the condensers of each unit and the Radioactive Waste Treatment facility. In addition, temporary storage tanks have been ordered to provide additional capacity for the water and will be located adjacent to the Radioactive Waste Treatment facility. At **Unit 1 and 2** water transfer from the condenser to the condensate storage tank was completed on 10 April.

In order to make room for higher contaminated water from the turbine buildings and trenches, 1 343 T of low level contaminated water from **Units 5 and 6** sub-drain pit were released to the sea from 4 to 9 April. In addition, 9 070 T of low-level contaminated water was discharged from the Central Radioactive Waste Disposal Facility to the south discharge point.

Nitrogen gas is being injected into the **Unit 1** containment vessel to reduce the possibility of hydrogen combustion within the containment vessel. The pressure in this containment vessel is increasing due to the addition of nitrogen.

Since 6 April, TEPCO has been moving debris from **Units 1 to 4** to a common storage area on-site using remote controlled heavy equipment.

On 10 April additional anti-scattering agent was sprayed in an area of about 550 m² on the mountain-side of the Common Spent Fuel Pool to prevent the radioactive materials on the ground from being scattered.

In **Unit 1** fresh water is being continuously injected into the RPV through the feed-water line at an indicated flow rate of 6 m³/h using a temporary electric pump with off-site power. In **Units 2 and 3** fresh water is being continuously injected through the fire extinguisher lines at an indicated rate of 7 m³/h using temporary electric pumps with off-site power.

In **Unit 1** the pressure in the RPV is increasing, as indicated on both channels of instrumentation. In **Units 2 and 3** Reactor Pressure Vessel and Drywell pressures remain at atmospheric pressure.

RPV temperatures remain above cold shutdown conditions in all Units, (typically less than 95 °C). In **Unit 1** temperature at the feed water nozzle of the RPV is 228 °C and at the bottom of the RPV is 121 °C. In **Unit 2** the temperature at the feed water nozzle of the RPV is 149 °C. The temperature at the bottom of the RPV was not reported. In **Unit 3** the temperature at the feed water nozzle of the RPV is 92 °C and at the bottom of the RPV is 111 °C.

An additional 60 T of fresh water was injected via the Spent Fuel Cooling System line to the spent fuel pool in **Unit 2** by a temporary pump on 10 April.

There has been no change in status in **Units 4, 5 and 6**.

2. Radiation Monitoring

On 10 April, deposition of both iodine-131 and cesium-137 was detected in 7 and 6 prefectures respectively. The values reported for iodine-131 ranged from 6.3 to 920 Bq/m² and for cesium-137 from 7.9 to 800 Bq/m². The highest deposition was reported for both, iodine-131 and cesium-137, in the prefecture of Ibaraki. /p>

Gamma dose rates are measured daily in all 47 prefectures, the values tend to decrease. For Fukushima, on 10 April a dose rate of 2.2 µSv/h, for the Ibaraki prefecture a gamma dose rate of 0.15 µSv/h was reported. The gamma dose rates in all other prefectures were below 0.1 µSv/h.

Dose rates are also reported specifically for the Eastern part of the Fukushima prefecture, for distances of more than 30 km to Fukushima-Daiichi. On 10 April, the values in this area ranged from 0.2 to 25 µSv/h.

MEXT has set up an additional monitoring programme, in cooperation with local universities, measurements are made in 26 cities in 13 prefectures. As of 10 April, in 19 cities, the gamma dose rates were below 0.1 $\mu\text{Sv/h}$. In 6 cities, gamma dose rates ranged from 0.13 to 0.17 $\mu\text{Sv/h}$. In Fukushima City, a value of 0.42 $\mu\text{Sv/h}$ was observed. Typical normal background levels are in the range of 0.05 to 0.10 $\mu\text{Sv/h}$.

Only in a few prefectures, iodine-131 or cesium-137 is detectable in drinking water at very low levels. As of 10 April, a restriction for infants related to iodine-131 (100 Bq/l) is in place as a precautionary measure in only one village of the Fukushima prefecture.

On 10 April, the IAEA Team made measurements at 7 different locations in the Fukushima area at distances of 23 to 39 km, South and Southwest from the Fukushima nuclear power plant. At these locations, the dose rates ranged from 0.4 to 1.6 $\mu\text{Sv/h}$. At the same locations, results of beta-gamma contamination measurements ranged from 0.01 to 0.18 Megabecquerel/m². The highest beta-gamma contaminations have been determined at distances of less than 30 km from Fukushima-Daiichi.

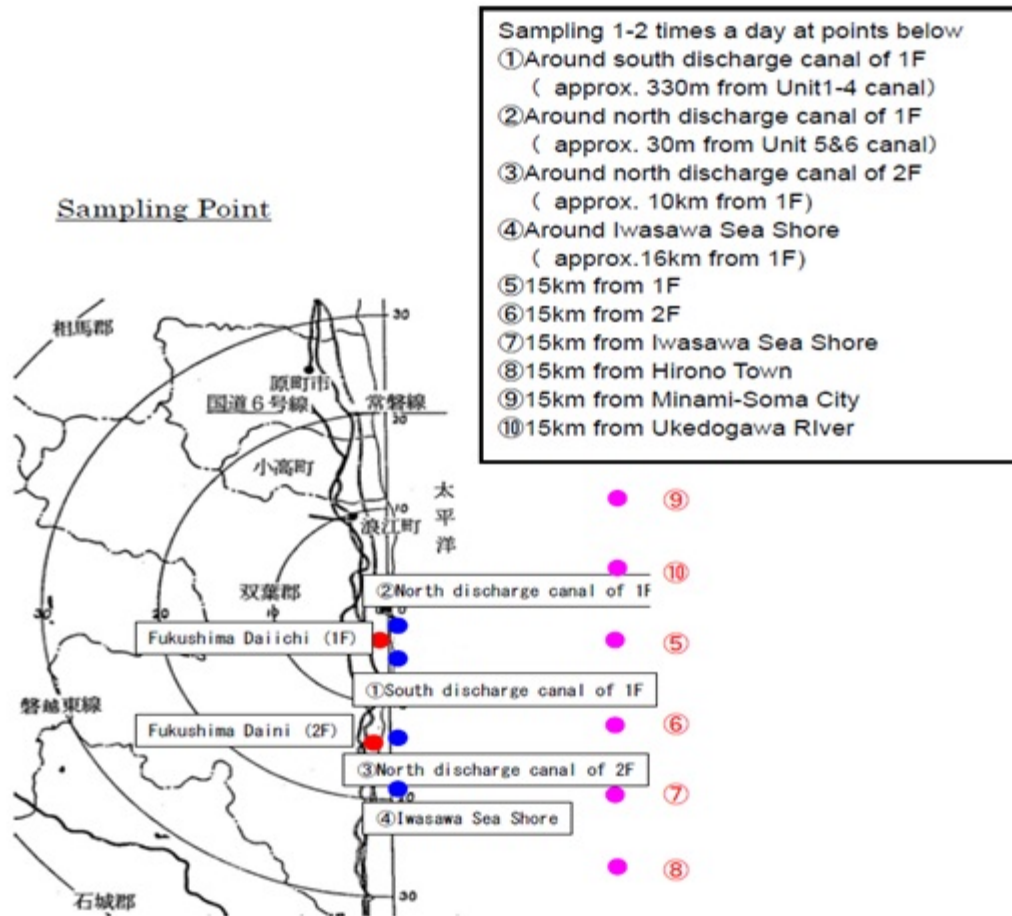
Analytical results related to food contamination, reported by the Japanese Ministry of Health, Labour and Welfare from 8 to 10 April covered a total of 157 samples taken from 6 to 10 April. Analytical results for 153 of the 157 samples for various vegetables, spinach and other leafy vegetables, shitake mushrooms, fruit (strawberries), pork, seafood and unprocessed raw milk in eight prefectures (Chiba, Fukushima, Gunma, Ibaraki, Kanagawa, Nagano, Niigata and Saitama), indicated that I-131, Cs-134 and/or Cs-137 were either not detected or were below the regulation values set by the Japanese authorities. In Fukushima prefecture, one sample of seafood (sand lance) taken on 7 April was above the regulation values set by the Japanese authorities for I-131 and three samples of shiitake mushrooms taken on 8 April were above the regulation values set by the Japanese authorities for I-131 and/or Cs-134 and Cs-137

3. Marine Monitoring

TEPCO Monitoring Programme

As reported in the brief of 8 April TEPCO is conducting a programme for seawater (surface sampling) at a number of near-shore and off-shore monitoring locations as illustrated in Map 1.

Map 1: TEPCO Seawater Sampling Locations:



Until 3 April a general decreasing trend was observed at the sampling points TEPCO1 to TEPCO4. After the discharge of contaminated water on 4 April, a temporary increase has been reported.

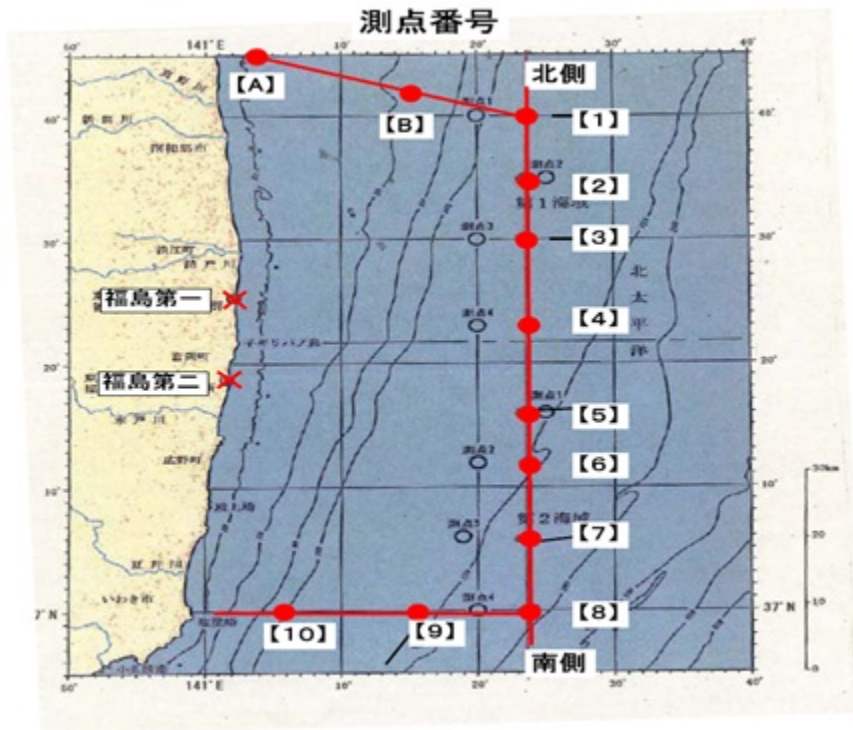
On 11 April new data (8 April sampling day) for TEPCO 1 - 4 sampling points have been reported. At the near-shore sampling point TEPCO 1 an increase from 2,2 kBq/l (7 April) to 19 kBq/l for I-131 and from 1.7 kBq/l (7 April) to 12 kBq/l for Cs-137 has been reported. As for TEPCO 3 and TEPCO 4 a further decrease as respect to the results for the sampling day, 7 April, in the concentration of I-131 and Cs-137 has been reported. At the sampling point TEPCO 2 a decrease in the concentration of I-131 to about 50 kBq/l) and Cs-137 to about 34 kBq/l as respect to the results obtained on 7 April was observed.

For the six sampling points TEPCO 5 to TEPCO 10 since 7 April no new data have been reported. The data since 7 April have been summarized in the previous brief of 10 April.

MEXT Off-shore Monitoring Programme

As reported in the brief of 8 April MEXT initiated the off-shore monitoring program on 23 March and subsequently points 9 and 10 were added to the off-shore sampling scheme. On 4 April, MEXT added two sampling points to the north and west of sampling point 1. These are referred to as points A and B on the map below.

Map 2: MEXT Seawater Sampling Locations:



On 11 April new data have been reported for MEXT 1, 3, 5, 7 and 9 for 9 April sampling day.

At MEXT 1 both I-131 and Cs-137 were no longer detectable. At MEXT 3 an increase of the level of both I-131 and Cs-137 was recorded. At MEXT 5 the level of I-131 decreased and Cs-137 was not detected. At MEXT 7 and MEXT 9 an increase for I-131 was recorded and Cs-137 was no longer detectable.

No new data for the other sampling points have been reported at the date of 11 April 2011.

4. IAEA Activities

The team of three Agency experts in BWR technology have concluded their mission with meetings with NISA, Ministry of Foreign Affairs (MOFA), MEXT, Atomic Energy Commission (AEC) and Nuclear Safety Commission (NSC).

IAEA Update: New Earthquake in Japan (11 April 2011, 11:30 UTC)

The IAEA confirms that an earthquake occurred in Japan on 11 April at 08:16 UTC. The IAEA International Seismic Safety Centre has rated it as a 6.6 magnitude, revised from an initial 7.1 magnitude. The epicenter of the earthquake is 68 kilometres from the Fukushima Daiichi nuclear power plant, 60 kilometres from the Fukushima Daini nuclear power plant, 61 kilometres from Tokai Daini nuclear power plant, 173 kilometres from Kashiwazaki-Kariwa nuclear power plant, and 179 kilometres from Onagawa nuclear power plant. The epicenter was in land (37.01 N/ 140.48 E) at a depth of 13.1 km.

The IAEA has been in contact with Japan's Nuclear and Industrial Safety Agency (NISA) and can confirm the status of the following nuclear facilities:

Fukushima Daiichi Nuclear Power Plant

Based on a report by the Tokyo Electric Power Company (TEPCO), NISA confirms that no changes have been observed on the readings at the on-site radiation monitoring posts. Workers have been evacuated to the seismic evacuation shelter. Off-site power was lost and water injection pumps for Units 1, 2 and 3 stopped.

NISA confirms later that off-site power was restored and water injection resumed 50 minutes after the earthquake.

Fukushima Daini Nuclear Power Plant

NISA confirms that no changes have been observed on the readings at the on-site radiation monitoring posts and that off-site power remained available.

Onagawa Nuclear Power Plant

The five off-site power lines remain available. No changes have been observed on the readings at the on-site radiation monitoring posts.

Tokai Daini Nuclear Power Plant

The Tokai Daini nuclear power plant remains in cold shutdown since the 11 March earthquake. No abnormality has been observed.

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