

Report regarding the impact due to the discharge of drained water with concentrations of radioactive materials exceeding discharge standard to the ocean (summary)

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1. Summary of the water amount

The discharge amount into the port due to the leakage of high radiation-level contained water from the turbine building of Unit 2 from April 1st to 6th (hereinafter called "Unit 2 contained water") was 500 m³, the amount of radioactive materials was 4.7 x 10¹⁵ Becquerel as the total of 3 type of radioactive materials (already announced on April 21st), the discharge amount of low radiation-level contained water due to the emergency discharge from the Central Radioactive Waste Disposal Facility etc from April 4th to 10th (hereinafter called "low radiation-level contained water") was 10,393 m³, the amount of radioactive materials was 1.5 x 10¹¹ Becquerel as the total of 3 type of radioactive materials (already announced on April 15th). And the discharge amount into the port due to the leakage of high radiation-level contained water from the turbine building of Unit 3 from May 10th to 11th (hereinafter called "Unit 3 contained water") would be estimated as 250 m³, the amount of radioactive materials would be estimated as 2.0 x 10¹³ Becquerel as the total of 3 type of radioactive materials (planned to be announced on May 21st).

2. The discharge amount out of the port

By the estimation based on the measured value of concentration of radioactive materials, it is considered that 99.9% of Unit 2 contained water has discharged out of the port by May 9th. Meanwhile, low radiation-level contained water has discharged out of the port directly. On the other hand, it is considered that most of Unit 3 contained water is staying in the port now because of the nonproliferation measure such as silt fence set near intake channel. The amount of radioactive materials staying in the port is smaller compared with the total amount of radioactive materials of Unit 2 contained water, therefore it could be estimated that the impact to the coastal sea area is small even if it would discharge out of the port. In any case, we will continue to monitor carefully through the ocean monitoring.

3. Summary of ocean monitoring result

Regarding the ocean monitoring around Fukushima Daiichi Nuclear Power

Station, we continued monitoring from March 21st, and Ministry of Education, Culture, Sports, Science and Technology (MEXT) continued monitoring of sea water within 30km radius of the periphery, after that, in response to the instruction of Nuclear and Industrial Safety Agency (“NISA”) etc., we increased the sampling points mainly 15km off the coast and southern area, now the number of points is 27. According to these monitoring result, from April 5th to 20th, not only in the area near the power station, but also 15km off the coast of the power station and in the distance of 30km, the peak-shaped increase was observed which is estimated to be the impact of Unit 2 contained water. After that decrease was observed, most of the value fell below measurable limits (approx. 10 Becquerel/L) at the beginning of May. And regarding the impact of Unit 3 contained water, most of the monitoring result of 15km off the coast on May 15th fell below measurable limits, therefore no impact is observed now.

The detail is as follows;

- (1) Monitoring result on Fukushima Daini Nuclear Power Station (10km to 15km off the coast in the southern area)

The peak-shaped increase of radioactivity concentration was observed from April 5th (on April 5th, 3,700 Becquerel/L at maximum I-131, 1,400 Becquerel/L at maximum Cs-137), and after that slowly decrease was observed; therefore the radioactive materials are estimated to move in a southward direction.

- (2) Monitoring result of the points on 15km off the coast

The peak-shaped increase was observed at every point (on April 11th, 920 Becquerel/L at maximum I-131, 760 Becquerel/L at maximum Cs-137), after April 22nd slowly decrease was observed and most value fell below measurable limits.

And no peak-shaped increase was observed in the northern area (15km to 30km).

- (3) Monitoring result of the points of sea area within 30km radius of the periphery

The peak-shaped increase of concentration was observed from April 5th to 20th in the eastern points (on April 15th, 161 Becquerel/L at maximum I-131, 186 Becquerel/L at maximum Cs-137), No significant increase was observed from the result of northern part, it means that the movement of radioactive materials in a northward direction was very small.

- (4) Monitoring result around Ibaraki Prefecture

After April 25th, in the 4 time monitoring result at 10 points, extremely small amount of I-131 was detected on April 25th, but all of other value

was below measurable limits.

4. Evaluation by diffusion simulation

In order to comprehend the total image of impact by complementing monitoring data each other and to evaluate the situation out of the area covered by monitoring points, we implemented the diffusion simulation.

By summarizing the simulation result and observation result, it shows that the discharged contained water mainly diffuse along the coast in a southward direction, and finally move in a eastward direction by the Black Stream. And the observation result totally has a peak in the middle of April and decrease, the simulation result also has same trend, then it is assumed that the concentration continues to decrease from now.

5. Future ocean monitoring plan

Based on the plan regarding the spread of investigation by MEXT (already announced on May 6th, 2011), we will continue to implement not only the investigation for coastal sea area and 15km off the coast, but also the monitoring (sea water and marine soil) within 30km radius of the periphery and the coast of Ibaraki Prefecture, and comprehend in detail about the situation of contamination in the sea, especially in the area where it is assumed that there is big impact of the accident.