IAEA Update Briefing on Fukushima Nuclear Accident (28 April 2011, 18:00 UTC)

Presentation:
→ Summary of Reactor Status

1. Current situation

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

Changes to Fukushima Daiichi plant status

The IAEA receives information from various official sources in Japan through the Japanese national competent authority, the Nuclear and Industrial Safety Agency (NISA). Additional detail is provided in the IAEA Incident and Emergency Centre (IEC) status summary with information received by 17:00 UTC on 27 April 2011.

Management of on-site contaminated water

According to the 25 April evaluation by NISA of the report submitted by the Tokyo Electric Power Company (TEPCO), there is a little less than 70,000 tonnes of stagnant water with high level radioactivity in the basement of the turbine buildings of **Units 1, 2 and 3**.

Plant status

On 25 April the power supply for the temporary electrical pumps that supply water to the reactor pressure vessel of Units 1, 2 and 3 was switched from the off-site power supply to temporary diesel generators to allow work to enhance the off-site power supply. The power supply has now been returned to the off-site supply.

White smoke continues to be emitted from Units 2 and 3. No more white smoke was seen coming from Unit 4 as of 21:30 UTC on 25 April.

In **Unit 1** fresh water was being continuously injected into the reactor pressure vessel through the feedwater line at an indicated flow rate of 6 m3/h using a temporary electric pump with off-site power. On 27 April at 01:02 UTC an operation was initiated to increase the flow rate for injected water gradually from 6 m3/h to 14 m3/h to determine the amount of water required to flood the reactor core.

In **Unit 2 and Unit 3** fresh water is being continuously injected into the reactor pressure vessel through the fire extinguisher line at an indicated rate of 7 m3/h using temporary electric pumps with off-site power.

In **Unit 4** water continues to be sprayed on to the spent fuel pool using a concrete pump truck. An amount of 85 tonnes of water was sprayed on 27 April.

Nitrogen gas is still being injected into the containment vessel in **Unit 1** to reduce the possibility of hydrogen combustion in the containment vessel. The indicated pressure in the reactor pressure vessel is still increasing.

In **Unit 1**, the indicated temperature at the feedwater nozzle of the reactor pressure vessel is 132.0 °C and at the bottom of reactor pressure vessel is 110.5 °C.

In **Unit 2** the indicated temperature at the feedwater nozzle of the reactor pressure vessel is 120.4 °C. The reactor pressure vessel and the dry well remain at atmospheric pressure. On 26 April an amount of 47.5 tonnes of fresh water was injected into the spent fuel pool using the spent fuel pool clean-up system.

In **Unit 3** the indicated temperature at the feed water nozzle of the reactor pressure vessel is 72.0 °C and at the bottom of the reactor pressure vessel is 110.7 °C. The reactor pressure vessel and the dry well remain at atmospheric pressure.

There has been no change in the status in **Unit 5** or **Unit 6** or in the common spent fuel storage facility.

Spraying of anti-scattering agent at the site is continuing. An area of 7500 m2 to the east of the **Unit 3** turbine building was sprayed on 27 April.

2. Radiation monitoring

Deposition of Cs-137 was detected in four prefectures on 26 and 27 April, the values reported ranging from 4 Bq/m2 to 29 Bq/m2. I-131 deposition was reported for one prefecture on 26 April, with a value of 3.3 Bq/m2.

Gamma dose rates are measured daily in all 47 prefectures. A general decreasing trend has been observed in all locations since around 20 March. For the Fukushima prefecture gamma dose rates remain at 1.8 μSv/h. In Ibaraki prefecture gamma dose rates were slightly below 0.12 μSv/h. The other 45 prefectures had gamma dose rates of below 0.1 μSv/h, falling within the range of local natural background radiation levels. Gamma dose rates reported specifically for the eastern part of Fukushima prefecture, for distances beyond 30 km from the Fukushima Daiichi plant, showed a similar general decreasing trend, ranging from 0.1 to 13.6 μSv/h, as reported on 26 April.

On-site measurements at the west gate of the Fukushima Daiichi plant indicate the presence of I-131 and Cs-137 in the air in the close vicinity of the plant (within approx. 1 km). The concentrations in air reported since 31 March show a maximum on 14 April of 11.8 x 10−4 Bq/cm3 for total I-131 and 2.7 x 10-4 Bq/cm3 for total Cs-137. The values reported for 26 April are 9.0 x 10−5 Bq/cm3 for total I-131 and 2.4 x 10−5 Bq/cm3 for total Cs-137.

Since 1 April there has been one remaining restriction on the consumption of drinking water relating to I-131 (with a limit of 100 Bq/L), which applies to one village in the Fukushima prefecture and only for infants.

Enforced plan on environmental monitoring

On 22 April the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) issued a press release on an 'Enforced plan on environmental monitoring' with the objectives of obtaining an overview and providing data necessary to support the decision to establish the planned evacuation zones.

To meet these objectives, the plan included the following:

− Collection of data on the distribution of radioactive material inside an appropriate area, including the area in the vicinity of the Fukushima Daiichi plant;

− Preparation for future evaluations of changes in dose rates and accumulated amounts of radioactive material in all delineated zones around the Fukushima Daiichi plant;

− Provision of information on environmental dose rates for the purpose of evaluation of personal radiation doses to local residents.

It was announced that maps will be produced on the basis of the results of environmental monitoring, including maps of dose rates and distributions of radioactivity, estimated accumulated doses and levels of soil surface contamination.

This 'enforced plan on environmental monitoring' will be conducted in close cooperation between MEXT, Japan Atomic Energy Agency, universities, the Ministry of Defence, the police, prefectural police, Fukushima prefecture, electrical utilities and others, including the United States Department of Energy.

MEXT will compile all the data collected. MEXT and the Nuclear Safety Commission will cooperate with the Ministry of Economy, Trade and Industry (METI) and other organizations, and will establish procedures for standardizations on ranges and methods for the emergency environmental monitoring.

Food monitoring

Food monitoring data were reported by the Japanese Ministry of Health, Labour and Welfare on 27 April for a total of 129 samples taken on 21 and 24-27 April from 10 prefectures (Chiba, Fukushima, Gunma, Ibaraki, Kanagawa, Miyagi, Niigata, Saitama, Tochigi and Yamagata). Analytical results for 125 of the 129 samples for various vegetables, mushrooms, fruit (strawberry), pork, seafood, fresh milk and raw unprocessed milk indicated that I-131, Cs-134 and Cs-137 were either not detected or were below the regulation values set by the Japanese authorities. In Fukushima prefecture, two samples of spinach from 24 and 25 April and two samples of seafood (sand lance) from 26 April were above the regulation values set by the Japanese authorities for Cs-134/Cs-137.

Food restrictions

On 27 April restrictions were lifted on the distribution of spinach in Tochigi prefecture. In Fukushima prefecture, restrictions were lifted on the distribution and consumption of head type leafy vegetables from 17 locations in the Aizu and Minamiaizu districts (cities of Aizuwakamatsu and Kitakata; towns of Aizubange, Aizumisato, Bandai, Inawashiro, Kaneyama, Minamiaizu, Mishima, Nishiaizu, Shimogo, Tadami and Yanaizu; villages of

Hinoemata, Kitashiobara, Showa and Yugawa) and flower head brassicas from nine locations (city of Shirakawa; towns of Hanawa, Tanagura, Yabuki and Yamatsuri; villages of Izumizaki, Nakajima, Nishigo and Samegawa).

3. Marine monitoring

Marine monitoring programme

The marine monitoring programme is carried out both near the discharge areas of the Fukushima nuclear power plant by TEPCO and at off-shore stations by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). The locations of the sampling positions, including several new additional positions, were provided in the briefings of 26 April and 27 April. Contamination of the marine environment occurred by aerial deposition and by discharges and outflow of water with contamination.

Monitoring at off-shore sampling positions consists of:

1. Measurement of ambient dose rate in air above the sea;

2. Analysis of ambient dust above the sea;

3. Analysis of surface samples of sea water;

4. Analysis of samples of sea water collected at 10 m above the sea bottom.

The analysis for almost all sampling positions has shown a general decreasing trend in concentrations of the relevant radionuclides over time. Samples from the coastal positions still show higher concentrations of such radionuclides than samples from the off-shore positions. The radionuclides I-131, Cs-134 and Cs-137 are still detected in most sea water samples, but no longer for some of the off-shore positions.