News Release

Extract

経済産業省 Ministry of Economy, Trade and Industry

August 3, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 219th Release)

(As of 15:00 August 3, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa Nuclear Power Station (NPS), Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai No. 2 Power Station, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations

・ Fukushima Dai-ichi NPS (TEPCO)

- ・ Nitrogen injection into the Primary Containment Vessel (PCV) of Unit 1 was temporarily suspended due to the replacement of the nitrogen injection device with a reserved one. (From 05:52 till 08:33 August 3)
- ・ It was confirmed that the air dose rate was higher than 5Sv/h at around the entrance of the Train Room for the Standby Gas Treatment System on the second floor of the turbine building of Unit 1. (Around 11:19 August 2)
- ・ Nitrogen injection into the PCV of Unit 2 was temporarily suspended, due to the replacement of the nitrogen injection device with a reserved one. (From 05:52 till 08:29 August 3 (However, from 05:58 till 08:27, nitrogen injection was continued using a different line.))
- ・ The accumulated water in the trench of the turbine building of Unit 2 was transferred to the Radioactive Waste Treatment Facilities. (From 16:10 July 30 till 18:49 August 2)
- ・ Nitrogen injection into the PCV of Unit 3 was temporarily suspended due to the replacement of the nitrogen injection device with a reserved one. (From 05:52 till 08:29 August 3)
- ・ Fresh water (about 15t) was injected into the Spent Fuel Pool of Unit 4 via a temporary spraying facility. (From 17:05 till 17:37 August 2)
- ・ The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 till 17:00 August 2 and from 10:00 August 3)

- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 till 16:00 August 2 and from 11:00 August 3)
- Rubble (an amount equivalent to 5 containers) was removed with remote-controlled heavy machinery. (From 08:45 till 16:15 August 2)

2. Actions taken by NISA, etc.

The Ministry of Economy, Trade and Industry instructed TEPCO to submit a report on the installation state of the facilities to maintain injecting water into the reactors of Units 1, 2 and 3 of TEPCO's Fukushima Dai-ichi NPS, the resuming method for loss of the injection function and safety assessment results on the facilities, pursuant to the provisions of Article 67, paragraph 1 of the Nuclear Regulation Act on August 2.

<Instructions on Food and Drink>

- An additional item for suspension of shipment
- Cattle raised in Tochigi Prefecture, restrictions on relocation beyond the prefecture (except the cattle aged less than 12 months) and on shipment to slaughterhouses.

<Situation of Resident Evacuation>

The Local Nuclear Emergency Response Headquarters designated 65 spots (72 households) as "Specific Spots Recommended for Evacuation" based on the consultation with Fukushima Prefecture and Minamisoma City, and notified it to the city on August 3.

The Local Nuclear Emergency Response Headquarters designated 1 spot (1 household) as "Specific Spots Recommended for Evacuation" based on the consultation with Fukushima Prefecture and Kawauchi Village, and notified it to the village on August 3.

<Temporary access into Restricted Areas>

On August 2 and 3, residents were allowed temporary access into the towns of Namie, Futaba and Okuma.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

経済産業省 Ministry of Economy, Trade and Industry

August 4, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 220th Release)

(As of 12:00 August 4, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa Nuclear Power Station (NPS), Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai No.2 Power Station, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- The accumulated water in the trench of the turbine building of Unit 2 was transferred to the Radioactive Waste Treatment Facilities. (From 07:09 August 4)
- The accumulated water in the basement of the turbine building of Unit 3 was transferred to the Radioactive Waste Treatment Facilities. (From 16:13 July 30 till 07:17 August 4)
- The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 till 17:00 August 3)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 till 16:00 August 3)
- Rubble (an amount equivalent to 4 containers) was removed with remote-controlled heavy machinery. (From 08:00 till 16:10 August 3)
- Vessels in the Water Treatment Facility were exchanged (the Water Treatment Facility was not suspended.). (From 11:10 till 11:32 August 3)
- The Water Treatment Facility was suspended due to the works for preventing the flow rate decrease. (From 05:32 August 4)

・ Fukushima Dai-ni NPS (TEPCO)

- The Emergency Diesel Generator (A) of Unit 4 was completely repaired and returned to stand-by condition. (20:20 August 3)

- The pump of the Residual Heat Removal System (RHR (B)) was suspended due to the swiching works of temporary cables for the Seawater Heat Exchanger Building of Unit 4 (22:33 August 3). Thereafter, the pump of the Residual Heat Removal System (RHR (A)) was started up. (23:00 of the same day)

<Temporary access into Restricted Areas>

On August 4, residents were allowed temporary access into the towns of Namie, Futaba and Okuma.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 5, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 221st Release)

(As of 15:00 August 5, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa Nuclear Power Station (NPS), Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai No.2 Power Station, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- The water injection rate into the reactor of Unit 1 was adjusted to 3.9m^3/h, due to the decrease to 3.4m^3/h. (09:02 August 5)
- The water injection rate into the reactor of Unit 2 was adjusted to 3.8m^3/h, due to the decrease to 3.2m^3/h. (17:50 August 4)
- The accumulated water in the basement of the turbine building of Unit 3 was transferred to the Radioactive Waste Treatment Facilities. (From 08:42 August 5)
- Fresh water (about 15t) was injected into the Spent Fuel Pool of Unit 4 via a temporary spraying facility. (From 15:42 till 16:02 August 4)
- The Emergency Diesel Generator (B) of Unit 5 automatically started up due to false signal (12:09 August 4) and was manually shut off. (12:25 August 4)
- The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 August 5)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 August 5)
- Rubble (an amount equivalent to five containers) was removed with remote-controlled heavy machinery. (From 08:00 till 16:10 August 4)
- The Water Treatment Facility was suspended due to the works for preventing the flow rate decrease (From 05:32 till 15:30 August 4). Thereafter, the rated flow was reached.(16:13 of the same day)

- The Water Treatment Facility was suspended because the chemical solution injection pump of the Coagulation Settling Device automatically shut off (18:50 August 4). After the examination of the integrity of the pump, the Water Treatment Facility was started up again (20:30 of the dame day). Thereafter, the rated flow was reached. (20:50 of the same day)
- A leakage from the hose for transferring washing water for Vessels to be exchanged in the Water Treatment Facility was found (around 19:00 August 4). Thereafter, the valve was closed and the stop of the leakage was confirmed.
- The Water Treatment Facility automatically shut off because an alarm regarding unusual state in process went off (02:12 August 2). After the examination of the equipments, it was started up again (04:03 of the same day). Thereafter, the rated flow was reached. (04:21 of the same day)

2. Actions taken by NISA, etc.

On August 4, NISA evaluated the report received from TEPCO in response to the written instruction dated August 2 regarding the maintenance of water injection into the reactors of Units 1, 2 and 3 of Fukushima Dai-ichi NPS, and determined that the reported measure taken by TEPCO was appropriate as an emergency measure pursuant to Article 64, paragraph 1 of the Nuclear Regulation Act.

On August 4, NISA evaluated the situation of ensuring safety of the nuclear reactor facilities of Fukushima Dai-ichi NPS, TEPCO at the completion of the Step 1 phase, and determined that there were few possibilities of occurring unusual events that would require residents' evacuation or staying indoor, because the prevention measure against hydrogen explosion, the measure for stably cooling the reactors as well as the Spent Fuel Pools and the seismic measure, etc. were taken, and that there were very few probabilities of impacting on the areas outside the radius of 20km from the NPS even when water injection into the reactors would be suspended for many hours.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 6, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 222nd Release)

(As of 15:00 August 6, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- ・ Fresh water (about 75t) was injected into the Spent Fuel Pool of Unit 1 via the Fuel Pool Cooling and Clean-up Line. (From 15:20 till 17:51 August 5)
- ・ Fresh water was injected into the Spent Fuel Pool of Unit 3 for filling water in the Skimmer Surge Tank. (From 16:44 till 17:35 August 5)
- ・ The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 till 17:00 August 5 and from 10:00 August 6)
- ・ The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 till 16:00 August 5 and from 11:00 August 6)
- ・ Operations of opening and shutting of silt fences were carried out at the northern part of Intake Channel for Units 1 to 4 due to the blocking works with steel plates to prevent the diffusion of contaminated water. (From 09:40 till 11:00 and from 12:55 till 13:10 August 6)
- ・ Rubble (an amount equivalent to two containers) was removed with remote-controlled heavy machinery. (From 08:45 till 16:45 August 5)
- ・ The desalination device was temporarily suspended due to an inspection of the water level switch of the tank in the device. (From 06:20 till 14:30 August 6)
- ・ Vessels in the Water Treatment Facility were exchanged (the Water Treatment Facility was not suspended.). (From 11:08 August 6)

<Temporary access into Restricted Areas>

On August 6, residents were allowed temporary access into Minamisoma City, Tomioka Town and Naraha Town.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 7, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 223rd Release)

(As of 15:00 August 7, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- ・ The water injection rate into the reactor of Unit 3 was adjusted to 9.0m^3/h, due to the increase to 9.5m^3/h. (07:19 August 7)
- ・ The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 till 17:00 August 6)
- ・ The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 till 16:00 August 5 and from 11:00 till 16:00 August 6)
- ・ Rubble (an amount equivalent to one container) was removed with remote-controlled heavy machinery. (From 08:45 till 16:15 August 6)
- ・ Vessels in the Water Treatment Facility were exchanged (the Water Treatment Facility was not suspended.). (From 11:08 till 17:30 August 6)
- ・ A pump for a series of vessels of the Cesium Adsorption Device shut off. (From 07:05 August 7)
- ・ The Water Treatment Facility shut off due to an automatic shut-off of the Decontamination Unit of the facility because the chemical solution injection pump of the Coagulation Settling Device shut off. (From 08:07 August 7)

・ Fukushima Dai-ni NPS (TEPCO)

- - A trial run of the pump of the Residual Heat Removal System (RHR (A)), of which recovery operations had been implemented, was carried out (from 14:22 till 15:02 August 7). Thereafter, the pump moved to stand-by

condition.

<Temporary access into Restricted Areas>

On August 7, residents were allowed temporary access into Minamisoma City, Tomioka Town and Naraha Town.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 8, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 224th Release)

(As of 12:00 August 8, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa Nuclear Power Station (NPS), Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai No.2 Power Station, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- ・ Fresh water (about 15t) was injected into the Spent Fuel Pool of Unit 4 via a temporary spraying facility. (From 15:56 till 16:27 August 7)
- ・ The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 August 8))
- ・ The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 August 8))
- ・ The RHR (D) of Unit 5 was temporarily suspended due to the confirmation operation of the RHR (C) after switching the power source. (From 10:03 till 10:43 August 8)
- ・ Rubble (not put into containers) was removed with remote-controlled heavy machinery. (From 08:45 till 16:15 August 7)
- ・ The stroke of the pump for injecting chemical solution into the Decontamination Device of the Water Treatment Facility was adjusted to reduce the load on the pump and stably inject the solution. (16:54 August 7)
- ・ The accumulated water in the Building of the Miscellaneous Solid Waste Volume Reduction Facilities was transferred to the Process Main Building. (From 09:49 August 8)

<Temporary access into Restricted Areas>

On August 8, residents were allowed temporary access into Minamisoma

City, Tomioka Town and Naraha Town.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 9, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 225th Release)

(As of 14:00 August 9, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa Nuclear Power Station (NPS), Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai No.2 Power Station, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- The accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, was transferred to the Mega Float. (From 10:00 till 17:00 August 8)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 till 16:00 August 8)
- The Residual Heat Removal System (RHR) (D) of Unit 5 was temporarily suspended due to the confirmation operation of the RHR (C) after switching to the permanent power supply. (From 10:03 till 10:43 August 8)
- The pump was temporarily suspended (the cooling of the Reactor Core and the Spent Fuel Pool was temporarily suspended) due to the installation work of the branch line for the Residual Heat Removal Seawater System of Unit 6 (the ine is also to be added from the A lines as well as from the current B lines). (From 09:27 till 13:40 August 9)
- Transfer of the accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, to the Mega Float was started (10:00 August 9). The transfer was suspended because a small amount of leakage from a pipe was identified (10:12 of the same day). The inspection of the pipe was conducted. (11:40 of the same day)
- The accumulated water in the basement of the turbine building of Unit 6 was transferred to a temporary tank. (From 11:00 August 9)
- Transfer of the accumulated water stored in a temporary tank, which was

transferred from the basement of the turbine building of Unit 6 to the Mega Float was started. (13:35 August 9)

- The accumulated water in the Building of the Miscellaneous Solid Waste Volume Reduction Facilities was transferred to the Process Main Building. (From 09:49 till 18:32 August 8)
- Vessels in the Water Treatment Facility were exchanged (the Water Treatment Facility was not suspended.). (From 11:07 till 14:01 August 8)
- The Water Treatment Facility was temporarily suspended being struck by lightning (from 20:20 till 22:32 August 8). Thereafter, the rated flow was reached. (22:41 of the same day)

・ Fukushima Dai-ni NPS (TEPCO)

- The confirmation operation of the Emergency Diesel Generator (A) of Unit 2 was performed (from 10:00 till 11:08 August 8). After examination of the integrity of the Generator, it returned to stand-by condition. (11:08 of the same day)
- The pump of the RHR (B) of Unit 2 was suspended due to the switching of the pump of the RHR (A) (13:57 August 8). Thereafter, the pump of the RHR (A) was started up. (14:29 of the same day)

<Temporary access into Restricted Areas>

On August 9, residents were allowed temporary access into the towns of Tomioka, Namie, Futaba and Okuma.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

Extract

August 10, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 226th Release)

(As of 15:00 August 10, 2011)

The Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Onagawa NPS, Tohoku Electric Power Co. Inc.; Fukushima Dai-ichi and Fukushima Dai-ni NPSs, Tokyo Electric Power Co. Inc. (TEPCO); Tokai Dai-ni NPS, Japan Atomic Power Co. Inc. as follows:

Major updates are as follows:

1. Nuclear Power Stations (NPSs)

・ Fukushima Dai-ichi NPS (TEPCO)

- The water injection rate into the reactor of Unit 1 was adjusted to 3.8 m^3/h due to the decrease to 3.5 m^3/h. (08:32 August 10)
- Fresh water (about 10t) was injected into the Spent Fuel Pool of Unit 1 via the Fuel Pool Cooling and Clean-up Line. (From 08:59 till 09:19 August 10)
- Comfirmation operation of the Alternative Cooling System (A) for the Spent Fuel Pool of Unit 1 was carried out (from 10:06 till 10:43 August 10). Thereafter, confirmation operation of the same system (B) was carried out. (From 10:51 till 11:15 of the same day).
- Full-fledged operation of the Alternative Cooling System for the Spent Fuel Pool of Unit 1 was started. (11:22 August 10)
- The water injection rate into the reactor of Unit 1 was adjusted to 3.8 m^3/h due to the increase to 4.0 m^3/h. (12:20 August 10)
- The work of sampling airborne radioactive materials was conducted regarding the air inside the Primary Containment Vessel (PCV) of Unit 2. (From 10:39 till 11:13 August 9)
- The accumulated water in the trench of the turbine building of Unit 2 was transferred to the Radioactive Waste Treatment Facilities. (From 07:09 August 4 till 16:56 August 9)
- The water injection rate into the reactor of Unit 2 was adjusted to 3.8 m^3/h due to the decrease to 3.4 m^3/h. (08:32 August 10)
- The water injection rate into the reactor of Unit 2 was adjusted to 3.8 m^3/h due to the increase to 4.0 m^3/h. (12:20 August 10)

- Fresh water (about 15t) was injected into the Spent Fuel Pool of Unit 4 using a temporary spraying facility. (From 13:08 till 13:47 August 10)
- Transfer of the accumulated water stored in a temporary tank, which was transferred from the basement of the turbine building of Unit 6, to the Mega Float was started (10:00 August 9). The transfer was suspended because a small amount of leakage from a pipe was identified (10:12 of the same day). The inspection of the pipe was conducted. (11:40 of the same day)
- Operation of opening and shutting of a silt fence was carried out at the northern part of Intake Channel for Units 1 to 4 due to the blocking works with steel plates to prevent the diffusion of contaminated water. (From 12:45 till 13:20 August 10)
- Rubble (not put into containers) was removed with remote-controlled heavy machinery. (From 08:45 till 16:15 August 9)
- Vessels in the Water Treatment Facility were exchanged (the Water Treatment Facility was not suspended.). (From 11:27 till 12:47 August 9 and from 11:21 till 15:00 August 10)
- The accumulated water in the Site Bunker Building was transferred to the Process Main Building. (From 10:06 till 14:19 August 10)

2. Actions taken by NISA

On August 9, NISA evaluated the additional report received from TEPCO on August 3 (regarding the installation of the second Cesium Adsorption Device and so on), which is in response to the written instruction dated June 1 regarding the installation of the treatment facility for the accumulated water containing high concentration of radioactive materials at Fukushima Dai-ichi NPS, and determined that it was necessary for the prevention of radiation hazards to take the measure reported by TEPCO as an emergency measure pursuant to Article 64, paragraph 1 of the Nuclear Regulation Act.

On August 9, the Nuclear Emergency Response Headquarters announced the measurement results of the radiation monitoring action plan that was prepared for lifting the Evacuation-Prepared Area in Case of Emergency.

On August 9, the Nuclear Emergency Response Headquarters has determined the “Basic Approach to Reassessing Evacuation Areas”.

On August 9, the Nuclear Emergency Response Headquarters allowed temporary access into the 3km area, after revising the “Permision Criteria for Temporary Access to a Restricted Area” and securing sufficient safety for

residents.

<Situations of Injuries>

At around 09:30 on August 7, a subcontractor worker, who engaged in the access control work at the subcontractor's resting place on the premise of Fukushima Dai-ichi NPS, complained of something unusual with the right knee and was transferred to the Iwaki Kyoritsu General Hospital at 12:05 of the same day; however, the cause was unknown. Then, after being re-examined at Chiba Social Insurance Hospital, the worker was diagnosed with "Traumatic right knee synovialis ecchymoma".

<Situations of Resident Evacuation>

On August 9, the Nuclear Emergency Response Headquarters has determined the "Basic Approach to Reassessing Evacuation Areas".

<Temporary access into Restricted Areas>

On August 10, residents were allowed temporary access into the towns of Tomioka, Namie, Futaba, and Okuma.

For more information: NISA English Home Page
http://www.nisa.meti.co.jp/english/index.html

News Release

経済産業省
Ministry of Economy, Trade and Industry

August 4, 2011
Nuclear and Industrial Safety Agency

Regarding the Status of Safety Assurance at Reactor Facilities of Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co. Inc.

This is to inform the public that the assessment conducted following the completion of the 1st step, on the status of safety assurance implemented at Fukushima Dai-ichi Nuclear Power Station (NPS), Tokyo Electric Power Co. Inc. (TEPCO). The main points of the assessment result are as follows.

Main Points of the Assessment Result

1. Possibilities of hydrogen explosion and loss of reactor cooling capability at Fukushima Dai-ichi NPS have been reduced by the various measures taken so far.

2. Despite the above, an analysis on the impact on the surrounding environment was conducted assuming interruption of reactor cooling due to effects of earthquakes or tsunamis. The resulting radiological impact on areas beyond the 20km radius from the NPS was determined to be sufficiently small compared to the indices of "Regulatory Guide: Emergency Preparedness for Nuclear Facilities" and other sources, even when water injection was interrupted for a lengthy period (15 hours, which exceeds the actual halt duration during the March accident) at Units 1 to 3.

3. In conducting the assessment, NISA collected reports on measures planned by the operator to ensure ongoing water injection into the reactor as well as on response measures in the event of a halt, and verified their validity.

4. This assessment is a conservative study based on data available at this time. Regarding the reassessment of restricted areas and other issues, another assessment will be conducted, taking the newest data into account.

Attachment: Regarding the Status of Safety Assurance at Reactor Facilities of Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co. Inc. (Assessment Following Completion of Step 1) (Overview)

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Regarding the Status of Safety Assurance at Reactor Facilities of Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co. Inc. (Assessment Following Completion of Step 1) (Overview)

August 4, 2011
Nuclear and Industrial Safety Agency

1. The Status of Safety Assurance

(1) Prevention of hydrogen explosions

- Nitrogen injection has been performed on Units 1 to 3, making the possibility of hydrogen explosion in the containment small. Hydrogen explosion in the reactor building is also unlikely, given the building damage in Units 1, 3 and 4 and the presence of an opening in Unit 2.
- Even in the event of a hydrogen explosion within the containment, there would be no radiological impact necessitating evacuation or indoor evacuation (assessment has shown a maximum dose of 1.3mSv at the 20km mark, as previously released to the public).

(2) Prevention of facility damage and destruction due to earthquakes and tsunamis

- Units 1, 3 and 4 buildings retain sufficient seismic safety in their current state (verified through report collection, information previously released). Seismic reinforcement work has been completed on the Unit 4 spent fuel pool.
- Unit 2 reactor building shows no damage that would compromise seismic integrity.
- Pumps and power supply were relocated to high ground as a tsunami countermeasure. In addition, a temporary tide embankment was erected assuming tsunami resulting from an aftershock in the M8 range.
- <u>While the possibility of an earthquake or tsunami impact on the cooling system is considered small, an impact assessment was performed just in case, assuming inability to cool the reactor due to tsunami impact on the system.</u>

(3) Prevention of reactor cooling failure

- Units 1 to 3 are being cooled through circulating water injection, and reactor temperature and pressure are mostly stable. Multiple redundancies have been set up for water supply, pumps, piping and power supply.
- Water rejection can be resumed after approximately 3 hours of work even in the event of interruption by earthquake or tsunami (verified through report collection).
- Units 5 and 6 are under cold shutdown, undergoing stable cooling.
- <u>While stable cooling measures have been planned, an impact assessment was performed just in case, assuming inability to cool the Units 1 to 3 reactors.</u>

(4) Prevention of spent fuel pool cooling failure

- Stable cooling using heat exchanger is being implemented (Installation planned for early August for Unit 1). Even in the event of cooling failure, the fastest that the pool temperature could rise to 100℃ would be 39 hours for Unit 4 (verified through report collection, information previously released), providing more than ample time for a response.

(5) Radiological impact from radioactive materials released on a daily basis

- Assessment shows a maximum annual dose of 1.7mSv around the periphery of the NPS grounds (information released July 19), and the dose several kilometers away can be assessed as sufficiently small.

2. Impact Assessment for Abnormal Events

An assessment was performed on the radiological impact in the event of reactor cooling failure due to earthquakes or tsunamis.

(1) Assessment conditions

1) Reactor core condition

- The analysis in the official report submitted by the Japanese government to the IAEA Ministerial Conference was used as

the premise.

a. Basic analysis: "Almost no fuel left in the core of every unit" case

This case is thought to mirror actual conditions.

b. Reference analysis: "Significant fuel left in Unit 3 core" case

This case is used as a precaution, since it can involve a larger release of radioactive materials.

2) The halt duration for water injection into the core

- 5 hours, 10 hours and 15 hours (the longest that water injection was offline during the March accident was 14 hours and 9 minutes).

3) Radiation impact assessment conditions

- External exposure through Cesium and other substances and internal exposure were added together and assessed. Pediatric thyroid equivalent dose was also assessed.
- For weather conditions, the most challenging weather conditions for the entire year were chosen.

(2) Results of effective dose assessment at 20km from the NPS

The results under the most challenging conditions (cooling failure at all 3 units, water injection resumption 15 hours later at 60 tons per hour) are as follows:

1) Basic analysis: "Almost no fuel left in the core of every unit" case

- Effective dose is 0.17mSv, less than the index (10mSv) in the "Regulatory Guide: Emergency Preparedness for Nuclear Facilities". Pediatric thyroid equivalent dose is 0.038mSv, which is also sufficiently low.
- The effective dose assuming 1 year of residence is 0.65mSv, less than the recommendation index (20mSv) from the International Commission on Radiological Protection (ICRP).

2) Reference analysis: "Significant fuel left in Unit 3 core" case

- Even when assuming this case, which involves release of larger amounts of radioactive materials, effective dose is 2.3mSv, less than the index (10mSv) in the "Regulatory Guide: Emergency Preparedness for Nuclear Facilities".

Pediatric thyroid equivalent dose is 1.0mSv, which is also sufficiently low.

- The effective dose assuming 1 year of residence is 17mSv, but there is ample time to plan countermeasures in terms of long-term protection against exposure, taking into account results of environmental monitoring and other data.

(3) Assessment summary

The radiological impact in the event of cooling failure at nuclear reactors was assessed. The conclusion is that even when water injection into the reactor is suspended for a long period of time, radiological impact beyond the 20km radius of the NPS is a small one.

3. Future Response Related to Assessments of Radioactive Materials Release by Reactors

This assessment is a conservative study based on data available at this time. Regarding the reassessment of restricted areas and other issues, another assessment will be conducted, taking the newest data into account.

Results of Environmental Impact Assessment at the 20km Mark in the Event of Water Injection Interruption at Units 1, 2 and 3

(Injection Halt Duration: 15 hours / Resumption flow: 60m^3/h)

(1) Basic analysis: "Almost no fuel left in the core of every unit" case

	Effective dose (External + internal exposure)	Pediatric thyroid equivalent dose
Assuming 7 days to evacuate	0.17 mSV	0.038 mSV
Assuming 1 year of ongoing residence	0.65 mSV	0.046 mSV

(2) Reference analysis: "Significant fuel left in Unit 3 core" case

	Effective dose (External + internal exposure)	Pediatric thyroid equivalent dose
Assuming 7 days to evacuate	2.3 mSV	1.0 mSV
Assuming 1 year of ongoing residence	17 mSV	1.3 mSV

N.B. Regulatory Guide: Emergency Preparedness for Nuclear Facilities

- Specifies response indices for the initial stage following an accident. Regarding the estimated dose for the effective, external exposure dose, indoor evacuation is indicated for 10-50mSv and evacuation for over 50mSv.
- Regarding the pediatric thyroid equivalent dose, indoor evacuation (concrete building) is indicated for 100-500mSv and evacuation for over 500mSv.

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N.B. International Commission on Radiological Protection recommendation

- Posts 20-100mSv as the reference level for protecting the public during emergency exposure situation.

Regarding Temporary Access to the 3km Zone

August 9, 2011
Support Team for Residents Affected by Nuclear Incidents

1. Temporary Access to the 3km Zone

   As a result of the safety assessment on the reactor facilities at Tokyo Electric Power Co. Inc.'s Fukushima Dai-Ichi NPS, temporary access will be allowed to the 3km Zone, with all due safety caution.

   - Residents: Temporary access through the usual bussing operation
   - Business owners: Temporary access under the usual public-interest temporary access category

     N.B. Accompaniment by radiation control personnel is a requisite

2. Period

   - An August start date is the goal, for residents and business owners alike.

3. Points of Note

   - Prior to implementation, there will be more than sufficient survey of the dose as well as of road conditions and other factors

The Basic Approach to Reassessing Evacuation Areas

August 9, 2011
Nuclear Emergency Response Headquarters

1. The Basic Approach

(1) The current evacuation orders implemented by the government consist of:
   1) Orders to evacuate or prepare to evacuate with the aim of securing a certain distance from the nuclear power station, based on unstable conditions in the NPS (Evacuation-Prepared Area in Case of Emergency, Restricted Area), and
   2) Orders to evacuate with the aim of reducing the impact of radiation based on the fact that the cumulative dose received by residents in the 1 year following the accident is estimated to exceed 20mSv (Deliberate Evacuation Area).

(2) Since these evacuation orders have a huge impact on residents' lives, it would be proper to speedily reassess them in the event of major changes to the reasons they are based on, such as verified safety of nuclear reactor facilities and better understanding of dose decrease through the accumulation of detailed monitoring data.

(3) Such a reassessment will be carried out:
   1) following a safety assessment of the nuclear reactor facility and determination of how much distance should be secured from the NPS,
   2) once it has been verified through detailed monitoring of radiation dose within the Area whether the safety of residents has been secured or not, and
   3) when the restoration of everyday life environment for the residents, including public services and infrastructure, can be foreseen in the not-too-distant future.

(4) In the coming days, area-designation reassessment will take place incrementally in those areas that meet the above conditions 1) through 3), and residents will begin the homecoming process.
However, the process is also likely to highlight the existence of areas for which homecoming will prove challenging for the long term, due

to reasons such as ongoing risk even following NPS stabilization (such as the impact of reactor decommissioning process on the surrounding environment) and significantly high dose.

We hope to explore a long-range response measure for these areas, through ample discussion with local governments on the form that such long-range rebuilding measures should take.

(5) In every area that saw dispersal of radioactive contamination from this accident, including both areas planned for lifting of evacuation orders and those planned for longer-term continuation, anxiety regarding radiological damage is growing daily, necessitating bold measures.

In order to respond to this need, a basic decontamination policy will be put together, before the end of August if at all possible, and thorough, ongoing decontamination implemented in partnership with relevant parties.

In terms of long-range goals, the aim is to keep additional radiation exposure below 1mSv annually, and implement measures with even greater speed, in particular for children, for whom the impact of radiation is greater than for adults.

2. Exploring the Lifting of Evacuation-Prepared Area in Case of Emergency

(1) The situation in the nuclear power plant has improved significantly with the recent completion of Step 1. Based on this, the possibility of lifting the Evacuation-Prepared Area in Case of Emergency was explored as the first stage. Specifically, the following were assessed:

1) The possibility of hydrogen explosion
2) The possibility as well as the effects of reactor cooling failure (fuel heat-up, fuel melting and concrete reaction)
3) The possibility of cooling failure for the spent fuel pool
4) The possibility of damage to the spent fuel pool due to earthquakes and tsunamis
5) The impact of radioactive materials which continue to be released by the reactors in steam and other forms

The assessment result validated the lifting of Evacuation-Prepared Area in Case of Emergency, in terms of reactor safety.

These assessment results were also reported to the Nuclear Safety

Commission.

(2) In addition to regular monitoring such as the distribution map of radiation dose, monitoring was implemented on schools and public facilities in accordance with "The Radiation Monitoring Action Plan for Homecoming, regarding to Evacuation-Prepared Area in Case of Emergency" and in response to individual requests from municipalities. This means that the Evacuation-Prepared Areas in Case of Emergency are basically safe, as verified in terms of air dose rate.

(3) Area safety verification will continue in the future, through means such as additional monitoring in response to municipal requests. Municipalities themselves are asked to take into account the wishes of the residents and work with the prefecture to start drafting a Restoration Plan that responds to unique realities of the area, and that covers aspects such as facilitation of a smooth relocation for residents, resumption of public services such as education and medical facilities, Restoration of public infrastructure and decontamination of schoolyards.

(4) The idea is to lift Evacuation-Prepared Areas in Case of Emergency en masse on a national level, once every municipality has carefully considered their Restoration Plan and finalized them.

The municipalities in Evacuation-Prepared Areas in Case of Emergency run the gamut from areas where the entire village has been evacuated to areas where almost every resident has already returned home, and actual homecoming timing is expected to vary widely from municipality to municipality.

The national government will provide the necessary support for homecoming, taking into account the individual municipality's evacuation situation, the existence of infrastructural restoration response, the state of public service resumption, the progress of decontamination and the residents' wishes, staying respectful of the individual municipality's wishes.

3. The Response in Restricted Areas and Deliberate Evacuation Areas

(1) In the future, the Japanese government as well as TEPCO will spare no effort to implement Step 2, bringing the release of radioactive

materials under control and achieving a massive curb of radiation dose, through a transition to reactor cold shutdown, further stabilization of fuel pool cooling and overall reduction in contaminated water volume.

(2) Ongoing assessment will be conducted on reactor facility safety and other aspects as the above tasks proceed. At the same time, there will be proactive exploration into the impact on the surrounding environment following NPS stabilization, such as in the course of post-Step 2 reactor decommissioning, with regular, ongoing and helpful information updates.

(3) The possibility (or not) of downsizing Restricted Areas and reassessing Deliberate Evacuation Areas will be explored after proceeding with these assessments and explorations and completing Step 2, once the release of radioactive materials has been brought under even tighter control through measures such as achievement of reactor cold shutdown.

(4) Detailed radiation dose monitoring and other efforts aimed at restoration of everyday life environment for the residents will go ahead, without waiting for the completion of Step 2.

(5) Specifically, thorough monitoring such as 2km-mesh air dose survey and soil concentration mapping will be implemented, to gain a detailed understanding and assessment of the dose status in Restricted as well as Deliberate Evacuation Areas.

Also, in addition of promoting efficient and effective decontamination including the development of decontamination methods, work aimed at restoring habitation environment will be implemented, such as rubble removal, and damage survey and restoration of public infrastructure including waterworks, sewer system, and electricity and gas lines.

(6) These explorations and undertakings will be carried out in close partnership the local government involved, taking into account the realities of each locality and staying respectful of the judgment of individual areas.